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*Editors*

# Handbook of Adolescent Behavioral Problems

Evidence-Based Approaches to Prevention and Treatment

*Second Edition*

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Evidence-Based Approaches
to Prevention and Treatment

Second Edition

Research Assistant: Jessica M. Ramos

Springer

Child & Family Agency of Southeastern Connecticut, Inc.
It's About Children

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*1946–2014*

# Foreword

As we review the chapters that represent the work of the many talented scholars who contributed to this volume, we cannot help but reflect back on our own careers. We were educated at a time when the dominance of psychoanalytic theory was waning and the importance of the environment and learning was emerging. *Family* was the "buzz word." *Social justice* was the "buzz phrase."

During the late 1970s, we witnessed the reemergence of genetics and neurobiology, which were grounded not in eugenics but a new science that used CAT, MRI, and PET imaging and DNA unraveling as its methodologies. This interest would grow in subsequent years such that the buzz word of the 1990s would be *genes*, and the *decade of the brain* was the buzz phrase. During this time, we saw pharmacological treatment options grow from a small handful to a multitude of psychotropic drugs.

As the general public became increasingly focused on mental health issues, it expected managed health care companies to include coverage for services such as counseling and medications. Against this backdrop, our understanding of helping underwent a transformation (thanks to managed care) that is still in progress—no longer are we interested in the mental health of our clients, but in their behavioral health. Apparently, actions speak louder than thoughts and feelings. Whether this is indeed true is debatable.

Finally, across these decades, a small but vocal group within the helping professions questioned the noble but futile efforts of their clinical colleagues and dared to ask if there might be ways to reduce the incidence of mental illness/dysfunctional behavior and promote mental health/functional behavior. Looking at the epidemiological data, these pioneers, like Gerald Caplan, George Albee, Don Klein, and others, recognized that there would never be adequate treatment services available to help those who needed it. They envisioned a mental health care system built not upon treatment and rehabilitation but rather on the prevention of mental illness and the promotion of mental health.

As this new century moves into its second decade, these different tracks are converging as social science seeks to identify effective practices leading to successful treatment and prevention approaches. The new buzz words are *bio-psychosocial theory*. The new buzz phrases are *gene expression* and *evidence-based practice*. This handbook reflects not only this movement toward identifying best practices, it acknowledges that no single causal agent causes the pain of mental illness or the behaviors considered dysfunctional. Rather, most experts in the field agree that biology creates a susceptibility that can be exploited under certain circumstances. The growing consensus is

that personality characteristics can enable an individual to handle adversity more effectively or to have a less-than-desirable, riskier reaction. And clearly, the environment matters.

Environment matters as a trigger for illness and a protective factor for health. We use environment in the broadest sense. Environment is the air we breathe that encourages the development of asthma, and it is the Clean Air Act. Environment is the media that exposes youth to desensitizing video games and sexually demeaning images on film and the Internet, and it is *Sesame Street*. Environment is impoverished high unemployment neighborhoods in which criminal activity is the employer not of choice but necessity. It is also efforts to improve housing and increase meaningful living wage jobs. Environment is family, friends, teachers, and others that nurture positive and less positive personality characteristics. These multiple elements merge to create the uniqueness that is found in each of us.

We hope that practitioners regularly use this reference work in their practices and that policymakers and human services directors use this state-of-the-art guide to pursue promising paths of helpfulness. For graduate students in the helping professions, we have provided a set of blueprints for fashioning intervention plans for addressing the needs of young people. We urge you to look beyond the immediate need of the client and to imagine how that client's issues might be prevented in others. If we work at it together, we can create a healthier society.

<div style="text-align: right">

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# About the Authors

**Margaret S. Andover, Ph.D.** is an Assistant Professor of Psychology at Fordham University in New York. She earned her doctorate in clinical psychology from Binghamton University and completed her clinical internship and postdoctoral training in treatment development and outcome research at Brown Medical School. Her research examines the continuum of self-injurious behaviors, including non-suicidal self-injury (NSSI) and attempted suicide. Specifically, her research focuses on the treatment of NSSI and attempted suicide, factors contributing to the expression of one form of self-injury versus another, the functions of different types of self-injury, and the effects of self-injury on psychopathology and behavior severity.

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She has held a number of academic positions in Canadian (Lakehead University), Austrian (Karl-Franzens University Graz), and German (Max-Planck Institute of Psychiatry, University of Konstanz, University of Bremen, Technical University Braunschweig, University of Muenster) universities before joining Roehampton University in 2004 as a Professor of Developmental Psychopathology. At Roehampton, she is also the Director of Centre for Applied Research and Assessment in Child and Adolescent Wellbeing.

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**Alison G. Nagel** is a clinical and community psychology Ph.D. student at the University of Virginia, where she also received her B.S. in 2010. She is interested in risk and protective factors related to the quality of adolescent romantic relationships, as well as multiple contexts of intersection between youth and the legal system. These include juvenile interrogations and confessions, youth-gang legislation, and adolescent sexual behavior. Her current research focuses on teen dating violence and relationship-level contributors to abuse.

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**Part I**

**Introduction and Overview**

# Understanding Primary Prevention

Thomas P. Gullotta

## Why Is Illness Prevention/Health Promotion Important?

It has been nearly a decade since this Handbook first appeared. Since that time, the economic rationale for illness prevention and health promotion has only increased. The Centers for Disease Control and Prevention report that in 2006 nearly 58 billion dollars was spent on mental health services in the United States (Centers for Disease Control and Prevention, 2012). With an estimated 26 % of the US experiencing a diagnosable mental illness in any given year (Kessler, Chiu, Demler, & Walters, 2005) making illness prevention and health promotion a central part of national health care is as logical as this: "Preventing an illness from occurring is inherently better than having to treat the illness after its onset" (U.S. Surgeon General, 1999, p. 62). The majority of emotional problems are not diseases that can be traced to some microorganism, chemical imbalance, or gene. As the former Surgeon General of the United States, C. Evert Koop (1995, p. 760) long ago observed, "diseases are of two types: those we develop inadvertently and those we bring upon ourselves by failure to

practice preventive measures. Preventable illness makes up approximately 70 % of the burden of illness and associated costs."

While some human characteristics like height are highly inheritable, with 90 % of a person's height can be attributable to the genetics, other characteristics or behaviors do not have this effect size. As one of the world's most respected geneticists has stated,

> [Genetic research] provides the strongest available evidence for the importance of environmental influence. That is, twin and adoption studies usually find more than half the variance in behavioral development cannot be accounted for by genetic factors. For example, if identical twins are 40 % concordant for schizophrenia, as recent studies suggest, no genetic explanation can account for the 60 % discordance between these pairs of genetically identical individuals (Plomin, 1994, p. 28).

As our knowledge of genes and their influence on behavior grows, we increasingly are led to conclude that genetic susceptibility is not a preordained destiny. Rather, there is the mediating variable of environment that contributes mightily to whether or not and how a gene might express itself. This environmental opportunity, if taken, offers society the possibility to reduce the incidence of physical illnesses such as cancer and heart disease as well as behavioral disorders such as depression and conduct disorder.

Prevention does not yield a utopia. Illness and suffering requiring expert treatment and a full range of interventions from quality accessible

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outpatient care and medication to inpatient and rehabilitation services must also be provided. But the United States is experiencing an epidemic of suffering that overwhelms and will continue to overwhelm the service capacity of the nation and in the absence of preventive and treatment options impair the life potential of millions of children, youths, and adults. How so?

In a recent epidemiological study it was reported that approximately 26 % of the US population (18 years and older) experience a diagnosable mental illness in any calendar year (Kessler et al., 2005). Of this number roughly 15 % will experience a co-occurring alcohol or other drug-use disorder. With an estimated United States population of 314,000,000 individuals, this means that roughly 81,000,000 individuals are in need of help each year. Yet, the treatment and rehabilitation capacity of the United States is but a small fraction of this number. Each year many millions of seriously ill individuals struggle without the necessary help to address problems that interfere with their ability to lead productive lives. If prevention were to reduce this population by only 20 %, or 16,200,000 cases a year, it would have exceeded the total treatment capacity of the United States for any given year. Given that not all clinical interventions are either successful or are directed at those defined as most seriously ill, the cost-benefit ratio of prevention becomes readily apparent (Durlak & Wells, 1997; Yodanis & Godenzi, 2003). But even more important than prevention's favorable cost-benefit ratio is that millions of children and adults would avoid unnecessary suffering.

## What Is Primary Prevention?

Briefly put, prevention involves universal, selective, and indicated actions "… that protect existing states of health … promote psychosocial wellness and prevent… problems" (Bloom & Gullotta, in press, p. ?). What does promoting health and psychosocial wellness mean? It means taking actions that encourage resiliency, coping, adaptation, and developing human social capital. What does preventing illness mean? This refers

to reducing, modifying, and avoiding the risks known to foster ill health.

The terms *universal*, *selective*, and *indicated* are borrowed from Gordon's (1983) work as adopted by the Institute of Medicine (Mrazek & Haggerty, 1994) to describe the domain for preventive interventions. *Universal* is synonymous with the word *all*. For example, to reduce the incidence of tooth decay many communities add fluoride to their public water supplies. Thus everyone who drinks from that water supply is a recipient of this intervention known to reduce tooth decay. Childhood immunizations for polio and other crippling illnesses and automatically deploying car airbags are other examples of universal preventive interventions.

A *selective* intervention focuses more narrowly on populations at risk. In this instance, epidemiological evidence exists to suggest that a group of people is at higher than average risk for developing a disorder. To prevent that disorder and to promote the health of that group, interventions are offered. To illustrate, school teachers, who as a population have high contact with young people with runny noses, might be encouraged to receive flu shots to avoid influenza, an illness that peaks during the school year.

## Understanding Primary Prevention

An *indicated* intervention draws on epidemiological evidence, but in this instance the risk for the group in question is considered very high. To use the flu shot example again, a teacher who is elderly and has heart disease would move from the selected group into an indicated group. Notice that in each instance the intervention for health promotion and illness prevention is occurring before the onset of disease. Intervention is not focused on individuals, but on entire populations, and is information driven. That is, risk determines need for intervention exposure. The purpose of the intervention is to prevent the development of the illness or disorder by either strengthening the health of the individual (the flu shot) or by preventing its onset (the deployment of the airbag).

## Stress Theory

Stress theory offers a useful theoretical framework for designing efforts to reduce risk and promote health in individuals, families, and larger groups. A simple definition of stress is any change in life. Thus, the life events that mark off the life cycle carry with them positive stress (eustress) and negative stress (distress). Life can be filled with boredom and a lack of challenge (hypostress), or it can be filled with excessive demands on time, labor, and energy. These stressful situations mark transition points that, if coped with successfully, facilitate a healthier individual, family, and group environment.

An initial understanding of how stress affects organisms was developed by Cannon (1939) and Selye (1982). Selye's laboratory work with animals found that stress-producing agents (called stressors) create a reaction that Selye called the general adaptation syndrome. When stress exceeds some threshold, Seyle found, laboratory animals enter into a stage of alarm. During this stage, the organism is on alert, calling on its defensive systems to combat the stressor. The period during which the body fights the noxious stressor is called the stage of resistance. If the body cannot defeat the noxious stressor, it enters the stage of exhaustion. Unable to overcome the damaging virus, bacterium, or other adverse stimulus, the body surrenders to the stressor and expires.

## The ABCX Stress Model

Of the stress models, Hill's (1949, 1958) *ABCX* model is particularly useful for preventive action as it identifies three areas for intervention. While recent theoretical work has elaborated on Hill's writings (the double *ABCX* model; see McCubbin & Patterson, 1982), it remains a very viable explanation with practical application on its own. In this model the letter *A* represents some event that brings discomfort, such as death of a loved one, a divorce, or school failure. *B* stands for the internal and external resources the person can use

to fight the discomfort—wealth, friends, level of self-esteem, internal locus of control, coping abilities, and so on. *C* is the meaning the individual, family, or group attaches to the event. *X* is the crisis. Together *A*, *B*, and *C* result in *X*. That is, the magnitude of the crisis, its duration, and the individual's or family's level of reorganization after the crisis are determined by the sum of *A* (the event), *C* (its meaning), and *B* (the available resources).

The second part of Hill's model predicts how most individuals or groups will react in a crisis. The crisis (*X*) sends the individual into a period of disorganization in which the group marshals its resources to meet the crisis. The angle of recovery reflects the time necessary for the group to find a solution to its distress; the level of reorganization reflects the group's success in returning to a pre-crisis state.

Now let's take a closer look at the *ABCX* model by examining its components individually.

*A*, the stressor. *A*, the event that causes discomfort, can also be called the "stressor." Stressors are events "of sufficient magnitude to bring about change in the family system" (McCubbin et al., 1980, p. 857). In line with our earlier definition of stress as any change in life, a stressor may be either a good or a bad event.

Life is filled with stressors. Some of these are sudden changes, such as an unexpected relocation or death of a loved one. Others can be more insidious, slowly sapping an individual's energy over a period of years, such as poverty, alcoholism, or chronic physical or emotional illness. Still others mark the flow of life. These include the addition of family members, entry into school, adolescence, dissatisfaction over a marriage, possibly divorce and remarriage, and the loss of family members.

*C*, the meaning. *C* in Hill's model represents the meaning the person, family, or group attaches to the event. Events are not stressors unless they are perceived to be, and the degree of positive or negative disruption is again determined by the individual. Suppose a job promotion has been offered to a family member. At first glance this would seem to be a positive event for the family, but it may not be. It may require the promoted

member's extended absence from the home to meet increased job responsibilities, or it may mean a move to a new community. A promotion may then become a negative event in this family's life and acquire the status of crisis.

*B*, resources. The *B* in Hill's *ABCX* equation stands for the strengths that the individual, family, or group calls on in time of need. These *B* factors include personal resources, a family system's internal resources, social support, and coping. Personal resources include humor, religious faith, financial resources, self-respect, and an internal locus of control.

An individual's, family's or group's internal resources are its integrative abilities. Integration refers to the degree of unity existing in the family or group. Where there are common interests, a common agenda for the future, and affection for one another, there is a high degree of integration. Social support involves people outside the family or group who, in time of need, lend their strength to the family or group. This is accomplished by helping the family or group to feel loved, cared for, valued, and worthy, and by communicating to the individual, family, or group that it belongs.

The last factor, coping, involves the adaptive ways families use their *B* resources to handle a crisis. A family's adaptive capability is judged by its ability to mobilize its resources to confront a challenge and adjust to overcome that challenge.

*X*, the crisis. The *X* in Hill's model represents the state of disorganization after a crisis-producing event. There are two types of crisis events. The first are called developmental or normative crises and are considered a normal part of living life. The birth of a child, a child's entry into school, entry into adolescence, and the death of an aged family member are illustrations of normative crises. These events confront the individual with developmental tasks that, if coped with successfully, move the person on to another life stage. The second type of crisis is called situational or catastrophic. These events affect only some individuals, groups, or families and are tragic events. They may be circumstances that occur over time like living in a violent household or may be sudden like a close sibling dying in an automobile accident.

## Primary Prevention Has Technologies

To achieve illness prevention and health promotion, prevention uses four technologies. They are overlapping and in and of themselves rarely effective. However, when they are combined, they prevent illness and promote health.

The first technology is education. The most often used of all prevention's technologies, alone it rarely, if ever, is effective. The reason for this is that while education increases knowledge, only occasionally does it affect attitudes, and it almost never changes behavior. Thus, the tobacco user will acknowledge the hazards of tobacco use and might wish to give up the habit, but rarely acts on the motivation. This said, education nevertheless plays an important role in health promotion and illness prevention in concert with other technologies.

Education can take one of three forms. The first is public information. This can be found on the side of a cigarette package, an alcohol beverage bottle, or on the visor of an automobile. Information can be provided by means of print, radio, Internet, television, or film. It can be read, spoken, sung, or acted. In all instances the intention is to increase knowledge about a given subject and offer ways to handle that subject that promotes health or prevents illness.

A more specific form of education is anticipatory guidance. In this case, information is used to educate a group prior to some expected event. Drawing on the folk wisdom that to be forewarned is to be forearmed, the group will be better prepared to cope with the circumstances and adapt to the demands the event may place on them. Adaptation may be as simple as decreasing speed and braking as a traffic signal turns from yellow to red to heeding a weather report and packing sun protectorant to the beach, to childbirth preparation classes, children's visits to hospitals prior to elective surgery, and preretirement planning.

Education's third form is found in the personal self-management of behavior. In this instance, the individual or group learns how to control emotional, neurological, and physical aspects of

their behavior. The methods to achieve this outcome range from yoga, transcendental meditation, and biofeedback to cognitive behavioral approaches.

Prevention's second tool is the promotion of social competency. To be socially competent requires that one belong to a group, that the group value the membership of the individual, and that the individual make a meaningful contribution to the group's existence. Socially competent people tend to possess the following individual characteristics: a positive sense of self-esteem, an internal locus of control, a sense of mastery or self-concept of ability, and an interest beyond themselves that extends to a larger group. Thus, a feedback loop is established between belonging, valuing, contributing, and individual characteristics that is self-perpetuating.

Effect prevention programs contain exercises aimed at nurturing these individual characteristics, which are demonstrated in the ways in which groups embrace and value their members, and afford them opportunities to contribute to the welfare and well-being of the group. This meaningful contribution can entail being the elected spokesperson for a group, becoming a literacy tutor, or donating blood. This value to the group can be that of the philanthropist or of the soup kitchen volunteer. This belonging is reflected in hundreds of ways from flags hung from homes, draped on rear view car mirrors, and worn on clothing to songs and stories that celebrate the group's existence. To achieve the solidarity that is the essence of social competency requires not only education but also prevention's next technology.

Prevention's third technology is "natural caregiving," which is a term used to draw a distinction between the services offered by mental health professionals and those afforded by others. Natural caregiving takes three different forms. The first is the mutual self-help group in which individuals are drawn together by some common experience. This experience may be the expected death of a loved one (hospice), a personal problem behavior like alcoholism (Alcoholics Anonymous), or a challenging behavior of another (attention-deficit/hyperactivity disorder parent's group). In the self-help group members are both caregivers and care-receivers. Reliance is not on a professional but on each other. Pathology is not the governing dynamic but rather navigating through life's swamp with a companion who knows the stress the affected individual is experiencing. By acknowledging the failures celebrating the small successes, and relying on each other for support and advice, self-help group members discover competency—the competency that goes with belonging, with being valued, and with being a contributing member.

The phrase "indigenous trained caregiver" describes the second form of natural caregiving that individuals turn to in time of need. While not trained as mental health professionals, people such as ministers, teachers, and police officers provide advice, comfort, and support that enable many in society to lead healthy and productive lives.

In times of need, individuals turn first to friends and loved ones, then to trained indigenous caregivers. Why? Because the power of a single caring relationship over time is both nurturing and healing. As with other forms of caregiving, indigenous caregiving involves behaviors such as the sharing of knowledge, the sharing of experiences, compassionate understanding, companionship, and, when necessary, confrontation (Bloom, 1996; Cowen, 1982). The indigenous caregiver accepts responsibility for her or his life and ideally invests in the life (health) of at least one other person.

Prevention's fourth technology is its most powerful. Community Organization and Systems Interventions (COSI) are concerned with the promotion of a community's social capital. That is, how does a community motivate its members to participate actively in the process of governance and how inequalities are addressed? COSI addresses these issues in three ways. The first is community development and takes a variety of forms: the neighborhood civic association formed to be a local voice on zoning issues; the local recreation league created to afford after-school opportunities; and the neighborhood watch started to deter crime are but three examples. In each example, a group of people with concerns about property, youth activities, or crime prevention draw together and act to express their concerns and develop solutions in response to those concerns.

The second form COSI takes is systems intervention. The assumption is that every institution has dysfunctional elements within it that contribute to the needless suffering of individuals in society. Identifying those dysfunctional elements and correcting them is the purpose of this form of COSI. To illustrate, Tadmor (2003) describes her efforts to reform the medical practices used for treating children in one hospital. Policies and procedures that harmed children like restraining them to force compliance with the treatment regimen and separating them from parents during the treatment process were identified as dysfunctional and subsequently changed. For the outsider, while the identification of these dysfunctional practices might appear obvious, they are not necessarily evident to individuals within the system. Institutions—whether schools, hospitals, social service agencies, child care centers, or larger entities like child protective services and other state agencies—develop unique internal cultures very removed from those of society at large. Often, elements of these internal cultures are dysfunctional and needing change. This change rarely occurs without external COSI pressure.

The final form that Community Organization and Systems Intervention take is a legislative change and judicial action. Drawing on the earlier illustration of the difficulty that accompanies institutional change, it should be remembered that no legislation or judicial action benefits all. In these legislative and judicial contests, there are winners and losers. For example, while a universal family leave policy may be good for employees needing to care for loved ones, for the employer preserving a job for someone who may not return to work, the policy can be detrimental to business. While advocating civil rights legislation in the 1960s, it was Lyndon Johnson who observed that just this action would break the hold of the Democratic Party on the South, and it did. While offering a limited prescription benefit to Social Security recipients enables them to stretch their retirement savings, without a corresponding tax increase it hastens the eventual bankruptcy of the Social Security program.

This last form of COSI is a battleground where special interests strive to dominate the field. Over time and with growing public impatience, seat belt laws do become enacted. Wetlands are protected from development. Clean air standards are enacted. Tobacco laws restricting youth's access to cigarettes and other tobacco products are passed. Interestingly, it is often through the efforts of organizations like MADD and the NAACP, whose origins reflect many of the characteristics of self-help groups, that these laws capable of correcting injustice and improving public health are passed.

Thus, we come to see that when prevention's technology is fully utilized, a circle is completed. Education informs. Natural caregiving unites. Social competency enables, and COSI serves as a means to achieve community change.

## Implementing Preventive/Health Promotion Interventions

Healthy communities are achieved from within. That is, the members of a community as small as a person or as large as the world must want change. In that desire for change, a search for new ideas leading to new practices eventually leading to new behavior is undertaken. At times that search can be conducted without assistance; one or more community leaders may offer ideas that catch the imagination of the larger group and with group support transform those ideas into reality.

At other times assistance is necessary. This assistance can take one of three forms. The least intrusive form is consultation. Here, the advisor studies a program, a situation, a condition, or a behavior and offers advice. In its most elemental form, this consultative advice may be taken in whole, in part, or not at all. An illustration of this form of involvement is the architect who is asked to draw preliminary plans for a structure. After interviewing the client, visiting the site, and speaking with local zoning officials, this person renders a plan which may be accepted, modified, or rejected. The architect's involvement with the client ceases with the completion of the assigned task.

A higher level of involvement is collaboration. Here, the advisor has a personal stake in bringing the given advice to fruition. A junior partner in

the enterprise, the advisor now argues his case and actively works for change. Imagine a political consultant in this instance. A person working for the election of a candidate, this advisor develops a position for the candidate, obtains the candidate's approval and then champions that position with the candidate and others in the campaign. It is important to note again that the collaborator is not the leader of the group but a trusted actively involved participant.

The highest level of involvement is coaching. In this instance the advisor is empowered to work with the client to bring about the desired change. Consider the personal trainer. This is a person who instructs the client on how to exercise, how long the exercise period will last, and the type of exercise to be engaged in. In some settings, like a spa, this level of control extends to control over daily activities, the types of food consumed, even when one rises and when the day ends. With coaching, the client voluntarily surrenders a part of their control to achieve the desired end. Yet, even in this instance, the individual being coached retains the power to dismiss the coach. Thus, while the coach can use a wide range of motivational techniques to achieve change, the ultimate authority remains not with the coach but with the person, institution, or community.

## Conditions for Successful Prevention Activities

The challenge facing preventionists is that their interventions are frequently afterthoughts. When the community's discomfort with an issue reaches widespread public expression, it reacts with a pledge and a program. Both tend to be short-lived. Rather than the layering approach of adding an additional curriculum, the successful preventive intervention teaches a set of skills that can be used in multiple settings for multiple purposes.

New behaviors develop over time and require practice to be learned. Even when individuals are immersed in information, and some knowledge is retained, retention is measured in days—perhaps weeks—rarely in months or years; and any unfamiliar skill requires repeated practice in a variety of settings and circumstances in order to improve overall performance.

New behaviors are best learned in small groups. Small groups afford the opportunity for natural caregiving to occur, for competencies to be nurtured, and change agendas to be developed.

New behaviors are best learned by experiences that are lived through. Experiential learning offers opportunities to manipulate the learning experience, to vary its content, and to alter its intensity and duration. It allows the learner to interpret the information across a variety of intelligences (Gardner, 1993) best suited to the learner.

Finally, new behaviors need nurturance. Unless supported by the environment, new skills will rapidly disappear. Simply put, BE WANTED!

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# Understanding Treatment: Principles and Approaches

Ronald Jay Werner-Wilson
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In order to understand adolescent treatment, service providers should understand a developmental psychopathology perspective, risk factors associated with problem behavior, aspects of attachment that influence presenting problems and interventions, and diversity issues. Treatment providers should also be able to identify evidence-based treatments (i.e., treatments that have been empirically tested and found to be efficacious and/or effective in ameliorating the mental health issues of adolescents). The present chapter introduces material to provide a context for understanding adolescent treatment.

## Developmental Psychopathology Framework

Understanding the relationship between individual and family assets/liabilities, emotions, electrical brain activity, and positive youth development has significant implications for

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lifelong health and well-being. For example, adolescence is a time of strength and resilience but morbidity and mortality rates increase by 200 % during the second decade of life (Dahl, 2004). It is particularly alarming that "the major sources of death and disability in adolescence are related to difficulties in the control of behavior and emotion" (Dahl, 2004, p. 3; emphasis in original). Dahl continues: "I wish to underscore how a set of neurobehavioral changes at puberty represents *part* of a much larger set of maturational changes in adolescence, and how these require an approach that focuses on brain/behavior/social-context *interaction* during this important maturational period" (2004, p. 3; emphasis in original).

In their critical review of treatments for children and adolescents, Fonagy, Target, Cottrell, Phillips, and Kurtz (2002) noted that attention to developmental themes is an emerging trend in youth treatment. Attention to developmental themes is represented by the developmental psychopathology framework that has begun to dominate clinical work with children and adolescents. This approach suggests that psychiatric disorders are "part of a transactional causal chain" that includes "a series of interactions of biological, social, and psychological characteristics across time" (Fonagy et al., 2002, p. 5).

The U.S. Surgeon General's report on mental illness identified five principles associated with a developmental psychopathology perspective.

First, it is important to understand the particular history and past experience of youth clients:

> psychopathology in childhood arises from the complex, multilayered interactions of specific characteristics of the child (including biological, psychological, and genetic factors), his or her environment (including parent, sibling, and family relations, peer and neighborhood factors, school and community factors, and the larger social-cultural context), and the specific manner in which these factors interact with and shape each other over the course of development (U.S. Department of Health and Human Services, 1999, p. 127).

Second, the U.S. Surgeon General's report suggests that children and adolescents have innate tendencies to adapt to their environment so "some (but not all) 'pathologic' behavioral syndromes might be best characterized as adaptive responses when the child or adolescent encounters difficulty or adverse circumstances" (U.S. Department of Health and Human Services, 1999, p. 128). Third, age and timing factors are associated with problems (e.g., behavior that is considered normal for a 2-year-old could be considered immature for an adolescent). Fourth, it is important to understand a child's context, especially the caretaking environment. Finally, normal and abnormal developmental processes "are often separated only by degrees of difference" (U.S. Department of Health and Human Services, 1999, p. 128).

The U.S. Surgeon General's report identified four "virtues" of a developmental perspective (U.S. Department of Health and Human Services, 1999):

1. A developmental perspective provides a broader, "more informed" perspective to understand factors associated with development, maintenance, and recovery from disorders (p. 128).
2. A developmental perspective guards against oversimplified, diagnostic terms.
3. A developmental perspective identifies additional targets (e.g., environmental or contextual factors) for intervention.
4. A developmental perspective identifies "windows of opportunity during a child's development when preventive or treatment interventions may be especially effective" (p. 128).

The remainder of the present section describes four critical influences associated with adolescent development, including (a) positive youth development; (b) social psychophysiological and social/affective neuroscience perspectives; (c) influence of social interaction on brain activity; and (d) neuroanatomy of emotion.

## Positive Youth Development

Positive youth development philosophy is characterized by "a positive, asset-building orientation that builds on strengths rather than categorizing youth according to their deficits" (Small & Memmo, 2004, p. 7). This approach emphasizes individual strengths, such as problem-solving abilities and interpersonal skills, and how these normative qualities can be fostered in the context of caring and supportive relationships with adults and within communities (Bogenschneider & Gross, 2004; Small & Memmo, 2004). There are differences in conceptualizations of positive youth development. For example, Roth (2000) identified five aspects of positive youth development: (1) competence in academic, social, and vocational areas; (2) confidence; (3) connection to family, community, and peers; (4) character; and (5) caring and compassion. These are referred to as the five C's of positive attributes for youth: competence, confidence, connection, character, and caring (Roth & Brooks-Gunn, 2000). Larson's (2000) conceptualization includes creativity, leadership, altruism, and civic engagement. Scales, Benson, Leffert, and Blyth (2000) emphasized accomplishments of characteristics rather than qualities, suggesting that healthy development reflects some of the developmental tasks of adolescence indicated by school success, leadership, helping others, maintenance of physical health, delay of gratification, valuing diversity, and overcoming adversity.

## Social Psychophysiological and Social/Affective Neuroscience Perspectives

There has been recent clinical interest in the influence of adolescent brain development, so it is important to incorporate a social neuroscience (also called affective neuroscience or interpersonal neu-

robiology) perspective which refers to "an integrative field that examines how nervous (central and peripheral), endocrine, and immune systems are involved in sociocultural processes" (Harmon-Jones & Winkielman, 2007, p. 4). It seems clear that positive youth development is a sociocultural process that is likely to be influenced by brain activity. This approach "emphasizes the relationships among different levels of organization—from the molecule to the cell to the organ, system, personal, interpersonal, social group, and societal levels" (Harmon-Jones & Beer, 2009, p. 2). Social neuroscience continues to recognize that measures of autonomic nervous system activity are important.

Emotional regulation is a common focus in social neuroscience. Emotional intelligence is the ability to perceive others' emotions, to understand emotions and emotional knowledge, and to reflectively regulate emotions to promote emotional and intellectual growth. It is an asset that seems to influence factors associated with positive youth development. For example, emotional intelligence is correlated highly with altruism, and civic virtue for both genders (Charbonneau & Nicol, 2002). Furthermore, adolescents who scored higher in emotional intelligence were rated by their peers as being more altruistic (Charbonneau & Nicol, 2002).

## Influence of Social Interaction on Brain Activity

There is growing consensus that adolescent brain development is influenced by social interactions, especially interactions between adolescents and parents (Cozolino, 2006; Dahl, 2004; Spear, 2010). For clinicians, this emerging consensus in the social neuroscience literature suggests the need to recognize the relationship between individual characteristics, relational variables, interactional patterns, and brain activity on positive youth development.

## Neuroanatomy of Emotion

Given the importance of emotional intelligence and emotional involvement, it seems important to briefly review brain functioning associated with emotions. Identifying neural circuits associated with emotion is difficult because "control systems occur at every level of the central nervous system: from the spinal cord to the brain stem to sub-cortical and cortical structures" (Bradley & Lang, 2007, p. 596). Both the amygdala and prefrontal cortex (PFC) seem to exert significant influence on emotions (Bradley & Lang, 2007; Davidson, 2002, 2003). Although the PFC is usually associated with higher cognitive functions, it is also associated with emotion processing (Bradley & Lang, 2007; Davidson, 2002, 2003). There has been considerable research associated with differences between the left and right hemispheres of the PFC using electrical encephalographic (eeg) technology (Bradley & Lang, 2007; Davidson, 2002, 2003; Harmon-Jones & Peterson, 2009). It is noteworthy that the PFC develops later during adolescence (Giedd, 2008; Spear, 2010). This seems to influence emotion processing during adolescence. For example, an fMRI study of adolescents' identification of emotions suggested that younger adolescents are more likely to demonstrate activity in the amygdala than frontal lobes (Baird et al., 1999).

## Risk Factors

Risk factors refer to biological influences, stressful events, or psychosocial risk factors (especially family characteristics) that increase an adolescent's vulnerability to experiencing hardship: "There is now good evidence that *both* biological factors and adverse psychosocial experiences during childhood influence—but not necessarily 'cause'—the mental disorders of childhood" (U.S. Department of Health and Human Services, 1999, p. 129). The U.S. Surgeon General's report on mental health identified the following risk factors (U.S. Department of Health and Human Services, 1999):

- *Biological influence on mental disorders*: intrauterine exposure to alcohol or cigarettes, parental trauma, environmental exposure to lead, malnutrition of pregnancy, traumatic brain injury, specific chromosomal syndromes (p. 130).

- *Stressful life events*: parental death or divorce, economic hardship (p. 132).
- *Psychosocial risk factors*: parental discord, parent psychopathology, large family size, quality of relationship (especially attachment) between children and primary caregiver, child maltreatment, maladaptive peers and siblings (pp. 130–132).

In his book *Raising Children in a Socially Toxic Environment*, James Garbarino describes risk factors affecting youth. "Their risk factors are the stuff of talk shows and headlines and policy seminars: absent fathers, poverty and other economic pressure, racism, addiction, educational failure, poor physical health, family violence, and adult emotional problems that impair parenting" (1995, p. 6). Garbarino suggests that the accumulation of risk factors is a significant predictor of problems:

> The presence of one or two risk factors does not developmentally disable children, but the accumulation of three, four, or more can overwhelm a child … Once overwhelmed, children are likely to be highly sensitive to the socially toxic influences surrounding them (1995, p. 151).

Treatment providers should make efforts to screen for the presence of risk factors in adolescent clients. If more than three risk factors are present, treatment planning should incorporate strategies for ameliorating them. The presence of some risk factors will require partnering with social service agencies.

## Parent Influence

The parent–child relationship has important implications for treatment, which is why family therapy by itself or in conjunction with other therapies is recommended for treatment of several severe mental health disorders. Attachment is an aspect of the parent–child relationship that should be assessed and, when necessary, the target of intervention because "Attachments lie at the heart of family life. They create bonds that can provide care and protection across the life cycle (Ainsworth, 1991), and can evoke the most intense emotions—joy in the making, anguish in

the breaking—or create problems if they become insecure" (Byng-Hall, 1995, p. 45). A critical review of attachment research suggests attachment relationships are complex due to three factors: (a) relationships are multi-influential, (b) outcomes are multi-determined, and (c) continuity is complex and multifaceted (Thompson, 1999). For those interested in learning more about attachment, the following edited volume is an excellent resource: *Handbook of Attachment*: *Theory*, *Research*, *and Clinical Applications* (Cassidy & Shaver, 1999). Another resource is *Developmental-Systemic Family Therapy with Adolescents* (Werner-Wilson, 2001), which includes a discussion of different aspects of attachment, assessment recommendations, and treatment implications.

## Key Parenting Factors Associated with Psychopathology

It is presumed colloquially and professionally that parents influence psychopathology in children (Cusinato, 1998). Parent influence, according to a review of research, seems to be related to three specific aspects of the parent–child relationship: (a) parental warmth, (b) parental control, and (c) parental consistency (Cusinato, 1998). *Warmth* refers to the balance of supportive (e.g., praise, approval, encouragement, cooperation, expression and demonstration of affection) versus nonsupportive (e.g., blame, criticism, punishment, threats, neglect, negative evaluations) behaviors toward the child (Cusinato, 1998). Parental warmth seems to consistently influence self-esteem of children. Parental warmth should be routinely evaluated by helping professionals and a target of intervention if it is lacking in the parent–child relationship.

The *control* factor includes style of parent influence (coercive, democratic, permissive) and frequency of control. Although control is related to warmth (e.g., coercive control is associated with limited parental warmth), it seems to have an independent impact: "when the father's and mother's negative or abusive behaviors add up, the connection to dysfunctional outcomes in offspring becomes stronger and more crucial"

(Cusinato, 1998). This conclusion suggests that professionals should assess style and frequency of parental control.

*Consistency* is the final factor associated with outcomes—especially delinquent behavior. It refers to continuity between parental demands, expectations, and evaluations of children. Agreement on values and expectations between parents seems to be particularly important. As with warmth and control, treatment should include careful assessment of consistency between caregivers in the family.

Now that factors associated with the individuals or families being treated have been described, we review factors associated with therapeutic relationship since it seems to be a significant predictor of client outcomes.

## Therapeutic Relationship

Bordin (1979, 1994) suggested that the therapeutic relationship was influenced by an alliance between therapist and client that transcended theoretical orientation (he referred to it as a "pantheoretical" perspective). According to Bordin, both the therapist and the client play active roles in therapy. This conceptualization of alliance featured three dimensions: *goals*, *tasks*, and *bond* (Bordin, 1979, 1994). Therapeutic goals are the negotiated outcomes for therapy; tasks are the behaviors and cognitions which occur during therapeutic process; and bond refers to the quality of attachment between the therapist and client (Bordin, 1979, 1994).

Empirical research seems to support Bordin's (1979, 1994) propositions because therapeutic alliance is associated with positive outcomes in therapy. For example, results from a meta-analysis of 24 studies that evaluated various measures of working alliance to treatment outcome suggested that quality of the working alliance predicted positive therapy outcome (Horvath & Symonds, 1991). Although much of the research on therapeutic alliance has been with adult clients, it seems to be relevant for clinical work with adolescents. For example, adolescents and their families are more likely to drop out of treatment if

there is an imbalance (e.g., higher for parent than adolescent) in therapy alliance (Robbins, Turner, Alexander, & Perez, 2003).

## Influences on Therapeutic Relationship

Carl Rogers was one of the first therapists to formally hypothesize that the degree of client change in therapy was closely related to the client's relationship with the therapist. His call for research in this area began in 1957 and was summarized in his 1965 review of studies of the necessary and sufficient conditions needed for the therapeutic relationship. Rogers (1965) reported that a relationship perceived by the client as having a high degree of genuineness from the therapist with sensitive and accurate empathy on the part of the therapist was related to effective therapeutic bonds and increased growth. Additionally, when clients perceived themselves as unconditionally cared about and respected, they were more likely to rate the therapeutic bond as high. Similar results are found today with clients rating therapists as "most effective" when they are perceived to be more warm, affirming, understanding and helpful (Najavits & Strupp, 1994). Therapists with these qualities are also seen as approachable. The following therapist characteristics continue to be identified by clients as helpful: therapist moderates and controls discussion, therapist provides a safe environment, therapist encourages participation, and therapist helps in resolving problems (Estrada & Holmes, 1999). Gurman (2001) suggested that increased therapist activity in family therapy significantly influenced therapeutic relationship.

## Diversity Issues in Assessment and Treatment

Treating clients from different backgrounds requires careful assessment, cultivation of cultural sensitivity, and understanding of acculturation factors. We will review each of these issues in the present section.

## Gender Issues

In a classic study published in the *American Psychologist*, Broverman, Broverman, Clarkson, Rosenkrantz, and Vogel (1974) demonstrated that clinicians diagnosed women and men differently. Moreover, they noted that standards for health were based on those consistent with masculine characteristics. They conclude: "The cause of mental health may be better served if both men and women are encouraged toward maximum realization of individual potential, rather than to an adjustment to existing restrictive sex roles" (Broverman et al., 1974, p. 52). Women are also more likely than men to be blamed for their own problems and those of family members (Anderson & Holder, 1989). This has been referred to as mother blaming. "[C]hild guidance clinics have emphasized the involvement of mothers—not fathers—in the child's treatment" (Anderson & Holder, 1989, p. 384).

These expectations about gender roles may influence treatment in three ways: "(1) they limit what we see, (2) they shape how we interpret behaviors, and (3) they influence what we define as important" (Knudson-Martin, 2001, p. 338). This research on differential diagnoses, evaluating clients based on masculine standards, mother-blaming, and expectations about gender have the following implications for adolescents treatment:

- Treatment providers should be especially careful when assessing adolescent girls so that girls are not identified as pathological because they violate gender expectations.
- Since family therapy is a recommended form of treatment for some problems, treatment providers should ensure that fathers are equally engaged in therapy process.
- Assessment of family should include attention to family expectations about gender roles and father involvement.
- Treatment providers should avoid "mother blaming."

Treatment providers should pay attention to difficulties experienced by gay, lesbian, and bisexual youth because their sexuality may be a reason for the families to initiate therapy. Until relatively recently, homosexuality was diagnosed as a disorder and reparative therapy was recommended to treat this diagnoses. Additionally, youth who come out of the closet face a variety of stressors:

> [These youth] face tremendous challenges to growing up physically and mentally healthy in a culture that is almost uniformly anti-homosexual. … [They] face rejection, isolation, verbal harassment and physical violence at home, in school and in religious organizations. Responding to these pressures, many lesbian, gay and bisexual young people engage in an array of risky behaviors (Center for Population Options, 1992, p. 1).

Gay, lesbian, and bisexual youth may experience any of the following outcomes: (a) school-related problems, (b) running away, (c) conflict with the law, (d) substance abuse, (e) prostitution, and (f) suicide. If adolescents or their families seek treatment for any of these problems, treatment providers should be sensitive to harassment (including internalized homophobia) of gay, lesbian, and bisexual youth (Savin-Williams, 1994).

## Multicultural Issues

Factors associated with multicultural treatment are identified in the present section because "[m]any diagnostic formulations tend to reify normative aspects of culture, race, ethnicity, gender, and class membership as forms of psychopathology" (Comas-Díaz, 1996, p. 153).

In the book *Assessing and Treating Culturally Diverse Clients*, Paniagua (1998) suggests that clients from multicultural groups may be overdiagnosed which is referred to as cultivating "false conclusions regarding 'pathology' or mental problems" (p. 14). There seem to be two reasons for overdiagnosing. First, many assessment instruments have not been normed for clients from different groups. Second, misunderstandings about culture can lead treatment providers to diagnose behaviors that are normal for a particular group as pathological (Paniagua, 1998).

We return to the issue of therapeutic relationship—which we noted earlier in the chapter is

one of the best predictors of psychotherapeutic outcome—because it seems to be influenced by race and ethnicity. Paniagua (1998) suggests that therapeutic relationship is enhanced if treatment providers demonstrate both *cultural sensitivity* and *cultural competence*. Cultural sensitivity is defined as "awareness of cultural variables that may affect assessment and treatment" (Paniagua, 1998, p. 8). Therapists should be very careful that efforts to be culturally sensitive are not influenced by stereotypes because this would represent racism rather than sensitivity. Cultural competence is defined as "translation of this awareness into behaviors leading to effective assessment and treatment of the particular multicultural group" (Paniagua, 1998, p. 8).

Paniagua also suggests that therapist *credibility* influences treatment. Credibility refers to "the client's perception that the therapist is effective and trustworthy" (Paniagua, 1998, p. 8). A treatment provider who operates from stereotyped notions about a particular race/ethnic group toward an individual client will undermine her/his credibility. Dilworth-Anderson, Burton, and Johnson (1993) distinguish between *race* (cultural construction of identity based on social description); *ethnicity* (an experientially based identity that is part of an ongoing process), and *culture* (a subjective and objective expression of self, which includes race and ethnicity, that represents the encompassing aspects of a person's life). Tentative, collaborative questions designed to assess culture increases credibility.

Credibility is also affected if therapists make assumptions about extended family membership. "What is an extended family? The answer should be provided by the client and not by the therapist" (Paniagua, 1998, p. 9). Since family therapy is the recommended treatment for some problems, it seems important to include significant others—even if there is not a biological relationship—identified by clients.

Acculturation should also be considered during assessment and treatment. It refers to "the degree of integration of new cultural patterns into the original cultural patterns" (Paniagua, 1998, p. 8). Acculturation is often used to refer to immigrants from other countries but Paniagua (1998) suggests that this is only one form of acculturation, which he refers to as external. There is also an internal form of acculturation that refers to someone who moves from one part of a country to another where cultural patterns are different. "For example, when American Indians living in Arizona or New Mexico (or other states with a large number of reservations) move form their reservation to cities, they experience the impact of societal lifestyle quite different from their societal lifestyle experienced on the reservation" (Paniagua, 1998, p. 9). Continuing in the example of American Indians moving form the reservation to a different environment, Paniagua writes: "Competition and individualism are two values with little relevance among American Indians who reside on reservations. These values, however, are extremely important for anyone who resides outside a reservation" (1998, p. 9).

In both forms of acculturation, there may be tension between the original culture and the new culture relative to values, beliefs, and behaviors. This tension between original and new culture could contribute to psychosocial and behavioral problems in adolescents. It could also lead to family systems changes because younger children typically assimilate new cultural behaviors before their elders. This can create tension in the family if elders are threatened by the changes. The family system can also be affected if elders, who are slower to learn new languages or customs (Paniagua, 1998), become dependant on adolescents. Given that family relationships influence adolescents, treatment providers should assess for recent geographic transitions.

Now that conceptual material associated with treating adolescents has been introduced, the next section will review factors associated with providing mental health services to youth.

## Perspectives on Therapy Effectiveness

Those who pay for clinical services (e.g., consumers and insurance providers) have demanded better value for their investment, which has resulted in increased attention to the issue of ther-

apy effectiveness (Fonagy et al., 2002). This increased attention to accountability in the form of therapy effectiveness has revived a longstanding tension between academics who research therapy effectiveness and clinicians who provide treatment (Glenn, 2003). Richard M. McFall (1991), in his "Manifesto for a Science of Clinical Psychology," suggested that all forms of psychotherapy treatment should be empirically investigated. "Well-intentioned clinicians may not be using the most effective approach with their clients, or in some cases may be doing harm" (Ringeisen & Hoagwood, 2002, p. 44). Many interventions are designed through the process of common sense and good intention (Petrosino, Turpin-Petrosino, & Finckenhauer, 2000) or by myths and heroic efforts (Bogenschneider, 1996). While these treatments can be popular among service providers, there has been minimal research on the majority of them (Henggler & Sheidow, 2003).

Treatment providers, on the other hand, often complain that clinical research lacks "real-world" relevance since it is conducted in carefully controlled conditions that are difficult or impossible to match under normal treatment conditions (Fonagy et al., 2002; Glenn, 2003). Practicing clinicians worry that insurance companies will mandate specific treatments that underestimate critical aspects of therapy such as therapeutic relationship (Glenn, 2003) which seems to be one of the best predictors of therapeutic outcome (Hanson, Curry, & Bandalos, 2002; Horvath, 1994; Horvath & Symonds, 1991). There is also concern that insurance companies will be more likely to pay for psychopharmacological intervention rather than psychotherapies because the former have been investigated more frequently in clinical trials (Glenn, 2003).

## The Researcher-Practitioner Model

If these two perspectives remain polarized, clients suffer. If clinicians ignore research, the services they provide could lead to harmful and even fatal outcomes (see section "Holding Therapy").

In some states, licensed therapists are required to obtain continuing education credits that, in theory, are supposed to help therapists remain current about effective treatments. In practice, though, therapists may obtain these credits by attending workshops about treatment that has not been empirically evaluated. Researchers also have responsibilities in this model. In addition to disseminating research regarding therapies to the practitioners using them, they must also take into account the concerns of therapists when both designing treatments and reporting results. The researcher-practitioner model also requires that researchers reach out to clinicians by consulting with practicing therapists on treatment protocols to ensure that treatment procedures have validity. A more recent trend of conducting efficacy studies on therapies (in addition to traditional efficacy studies on pharmacological treatments) is a move toward bridging the researcher-practitioner gap. Studies of treatment should use experimental designs (treatment and control groups), valid and reliable measures, and be replicated by numerous investigators prior to being reported as efficacious. The transformation of efficacy studies conducted in a lab setting to effectiveness studies conducted in community mental health settings aid in the successful treatment of adolescents.

Additionally, the researcher-practitioner model suggests that practicing therapists should be in a position to understand and contribute to the research literature. From this perspective, therapists' have a responsibility to remain current about effective therapies from the clinical literature. For those who are working with adolescents, that responsibility includes staying current on basic research associated with adolescent development. In addition to remaining current on the literature, therapists should begin to collect their own outcome research by measuring client progress. It would also seem reasonable for researchers to partner with therapists to conduct more research in the field. This type of research could include process research in which self-report or observational data are collected from therapists and their clients in practice. As part of this field research, investigators should

begin to study differences in therapy outcomes across therapy settings (e.g., nonprofit service agency versus private practice) while also controlling for community variables in order to provide a more contextual understanding about therapy outcomes.

Measuring therapy outcomes has at least three practical benefits. First, therapists who measure client progress are in a stronger position to negotiate with insurance providers. For example, a therapist could negotiate for more sessions by showing that a client was below a particular threshold (e.g., two standard deviations) for a normal range of behavior. Second, data from systematic measurement can be used to provide information to clients about progress. Finally, therapists could make a contribution to the clinical literature by publishing these findings. There are numerous measures relevant to adolescent outcomes that are easy to obtain and administer for a variety of possible outcomes, including self-esteem, attachment, alcohol and substance abuse, to name just a few (see Werner-Wilson, 2001 for these and other measures). Therapists could also look for opportunities to contribute to the research literature by publishing about interventions.

## Evidence-Based Treatment

The American Psychological Association defines efficacious or "well-established" interventions as those that have either (a) two or more well-conducted group-design studies completed by several different researchers or (b) several well-conducted single-case study designs completed by independent investigators showing treatment to be at least as good as if not superior to placebo (Lonigan, Elbert, & Johnson, 1998). In keeping with both the APA and the researcher-practitioner model, we define evidence-based treatments as those that have been shown to be at least efficacious and at best both efficacious and effective. We summarized empirical support for a number of therapies and treatment models for adolescents associated with Attention-Deficit Hyperactivity Disorder (ADHD) in Table 2.1, Anorexia and Bulimia in Table 2.2, Anxiety Disorders in Table 2.3, Conduct Disorder (CD) and Oppositional Defiant Disorder (ODD) in Table 2.4, Depression in Table 2.5, and Substance Abuse in Table 2.6. The remainder of this chapter will review literature associated with evidence-based treatments for adolescents.

**Table 2.1** Therapy outcomes associated with ADHD (adapted by author Werner-Wilson & Morrissey, 2005)

| Study | Research design | Outcomes |
|---|---|---|
| Horn et al. (1991) | Efficacy study using a double-blind, placebo design to compare parent training and self-control therapy to stimulant medication | Parent training and self-control therapy combined with low dosage of methylphenidate was as effective as a high dosage of methylphenidate alone |
| Pelham, Wheeler, and Chronis (1998) | Review of 47 efficacy studies (parent training, behavioral training, and cognitive interventions) | Behavioral parent training and behavioral interventions with the adolescent are efficacious; cognitive interventions are not efficacious |
| Smith, Waschbusch, Willoughby, and Evans (2000) | Review of 29 efficacy studies (stimulants, psychosocial treatments, and other medications) | Methylphenidate has well-established efficacy but some problems with inconvenience and noncompliance; the psychotherapeutic interventions of family therapy and classroom interventions are efficacious and practical; treatment with other types of medications shows promise but is not yet supported empirically; cognitive interventions are neither efficacious nor effective |
| Cantwell (1995) | Review of books, articles, and chapters published from 1985 to 1995 on the effectiveness of interventions | Multi-modal interventions that combine psychosocial treatments with medication are most effective. Interventions must focus on family, school, and child |

**Table 2.2** Therapy outcomes associated with anorexia and bulimia (adapted by author Werner-Wilson & Morrissey, 2005)

| Study | Research design | Outcomes |
|---|---|---|
| Fairburn, Jones, Peveler, Hope, and O'Connor (1993) | Efficacy study using random assignment to compare CBT, IPT, and Behavioral Therapy (BT) for the treatment of bulimia | CBT and IPT made superior changes in binge eating and purging to BT, although IPT took longer to achieve its effects. Changes produced were maintained at follow-up for both IPT and CBT |
| Robin et al. (1999) | Efficacy study using random assignment comparing behavioral family systems therapy (BFST) with ego-oriented individual therapy (EOIT) for the treatment of adolescents with anorexia nervosa | While both treatments produced improvements in eating attitudes, depression, and eating-related family conflict, BFST produced greater weight gain and higher rates of resumption of menstruation than EOIT |

## Cognitive-Behavioral Therapy

Cognitive-behavioral therapy (CBT) seems to be an effective treatment for attention-deficit/hyperactivity disorder, depression and suicide, and anxiety disorders. Hart and Morgan (1993, p. 6) identified six general considerations associated with CBT:

1. CBT integrates constructs and interventions from cognitive therapies with behavior therapies.
2. Cognitions, which are private events, mediate behavior and learning.
3. Cognitions are a primary focus for intervention.
4. Target behaviors and cognitions should be clearly defined.
5. Cognitions and behaviors are reciprocally related: changes in one are associated with changes in the other.
6. Learning-based techniques are used as interventions for cognitions and behaviors.

**Table 2.3** Therapy outcomes associated with anxiety disorders (adapted by author Werner-Wilson & Morrissey, 2005)

| Study | Research design | Outcomes |
|---|---|---|
| Ollendick (1995) | Controlled study of the efficacy of cognitive behavior therapy (after intervention and at 6 month follow-up) | The treatment eliminated panic attacks, reduced agoraphobic avoidance and negative mood states, and increased self-efficacy for coping at both waves |
| Ollendick and King (1998) | Review of 23 efficacy studies | Behavioral treatments such as imaginal desensitization, in vivo desensitization, modeling, and self-instruction training are all superior to waitlist control and as effective or superior to medication; cognitive-behavioral therapy is superior to wait-list control and as effective to medication; cognitive-behavioral therapy plus family anxiety training increases the effects of traditional CBT |
| Kendall (1994) | Effectiveness study of a 16 week cognitive-behavioral treatment using waitlist control | Cognitive-behavioral intervention was found to be effective in the treatment of anxiety disorder in children with clinical significance continuing at 1 year follow-up |
| Kendall et al. (1997) | Replication of the Kendall (1994) effectiveness study | Cognitive-behavioral intervention was found to be effective in the treatment of anxiety disorder in children with clinical significance continuing at 1 year follow-up |
| Barrett, Dadds, and Rapee (1996) | Efficacy study of cognitive-behavioral therapy (CBT) and CBT plus family therapy using waitlist control with random assignment | Both treatment conditions were superior to the waitlist control group in the amelioration of anxiety directly after the interventions and at 12-month follow-up. The CBT plus family therapy treatment was more effective than CBT alone at both end of treatment and 12 month follow-up |

**Table 2.4** Therapy outcomes associated with CD and ODD (adapted by author Werner-Wilson & Morrissey, 2005)

| Study | Research design | Outcomes |
|---|---|---|
| Kazdin, Esveldt-Dawson, French, and Unis (1987) | Efficacy study examining the effects of a combined parent management training and a cognitive-behavioral problem-solving skills training (PMT-PSST) versus traditional psychotherapy | Children in the PMT-PSST treatment showed significantly less aggression and externalizing behaviors at home and school as well as significantly greater pro-social behavior and overall adjustment. Results were maintained at 1 year follow-up |
| Alexander, Holtzworth-Monroe, and Jameson (1994) | Reviewed several efficacy studies of Functional Family Therapy (FFT) | Changes in conduct-disordered adolescents were significantly greater for those treated with FFT than changes produced by psychodynamically oriented therapies or client-centered therapies. Improved family functioning and communication as well as lower rates of court involvement were maintained at 2 and 3 year follow-ups |
| Borduin et al. (1995) | Efficacy study comparing Multisystemic Family Therapy (MST) to individual therapy | MST was more effective than individual therapy in improving key family correlates of antisocial behavior, preventing future criminal behavior, and in ameliorating adjustment problems in individual family members |
| Gordon, Graves, and Arbuthnot (1995) | Followed delinquent youth treated with FFT compared to a traditional probation services control group into adulthood | Youth receiving traditional probation services were five times more likely to be arrested as adults than those treated with FFT |
| Snyder, Kymissis, and Kessler (1999) | Efficacy study of brief group therapy for anger control with random assignment | Treatment group participants scores on the MMPI (Anger Index) were significantly reduced following the treatment intervention while the control groups' scores increased |
| Borduin, Schaeffer, and Ronis (2003) | book chapter reporting on several efficacy studies of MST with adolescents | MST is more effective than both usual services and individual therapy in decreasing behavior problems, antisocial peer associations, and arrests, while increasing family communication, positive family relationships, and pro-social peer relationships. Follow-up to 4 years showed continued results |
| Santisteban et al. (2003) | Efficacy study using random design comparing Behavioral Systems Family Therapy (BSFT) to a group treatment control (in a Hispanic sample) | BSFT participants showed significantly greater improvement in adolescent conduct problems, delinquency, marijuana use, and family functioning |

*CBT Treatment for Depression and Suicide.* CBT interventions that address coping skills and self-control (also referred to as behavioral problem-solving therapy) have been shown to be effective in the reduction of depression. Multiple studies of the efficacy of CBT as a treatment for depression have found both individual and group CBT to be superior to waitlist control, nondirective supportive therapy, and some forms of family therapy (Brent et al., 1998; Clarke et al., 2003; Reynolds & Coats, 1986; Stark et al., 1987). CBT also seems to be effective in treating depressive symptoms associated with suicidal ideation (U.S. Department of Health and Human Services, 1999).

*CBT Treatment for Anxiety Disorders.* Kendall and colleagues (Kendall, 1994; Kendall et al., 1992) developed a CBT treatment for anxiety that includes four factors: (a) recognition of anxious feelings, (b) clarification of cognitions during anxiety-provoking situations, (c) development of a coping plan, and (d) evaluation of the coping strategy. Efficacy studies of Kendall's CBT program have shown the intervention to be both clinically and statistically significant in the

**Table 2.5** Therapy outcomes associated with depression (adapted by author Werner-Wilson & Morrissey, 2005)

| Study | Research design | Outcomes |
|---|---|---|
| Reynolds and Coats (1986) | Efficacy study with random assignment comparing group CBT, group relaxation training, and waitlist control | Both treatments produced statistically and clinically significant changes in depression; neither treatment was superior to the other. Additionally, both active group treatments produced improvements in anxiety and school functioning. Results were maintained at 5 week follow-up |
| Stark, Reynolds, and Kaslow (1987) | Efficacy study with random assignment comparing self-control therapy, behavioral problem-solving therapy, and waitlist control | Both treatment conditions produced significantly and clinically significant changes in depression; results were similar for both treatments with neither being superior to the other |
| Brent et al. (1998) | Efficacy study with random assignment comparing cognitive-behavioral therapy (CBT), systemic-behavioral family therapy (SBFT), and nondirective supportive therapy (NST) | CBT was superior ("more efficacious") to SBFT and NST. SBFT was effective in reducing major depressive disorder and was superior to CBT and NST when mother also had a diagnosis of depression. NST was not effective in any circumstance |
| Clarke, Rohde, Lewinsohn, Hops, and Seeley (1999) | Efficacy study with random assignment comparing adolescent group CBT, group CBT with parent group, and waitlist control | Group CBT delivered in 16 2-h sessions over the span of 8 weeks yielded higher depression recovery rates than the waitlist. Group CBT plus parent group was not significantly different in results from CBT alone |
| Diamond, Reis, Diamond, Siqueland, and Isaacs (2002) | Efficacy study with random assignment comparing Attachment-Based Family Therapy (ABFT) to waitlist control | ABFT was superior to the control with participants showing significantly greater reduction in both depression and anxiety symptoms as well as family conflict. At post-treatment, 81 % of participants in treatment no longer met criteria for MDD; treatment effects remained at 6 month follow-up |
| Mellin and Beamish (2002) | Reports on the outcomes of several efficacy studies comparing Interpersonal Therapy for adolescents (IPT-A), CBT, and waitlist control | IPT-A significantly reduced depressive symptomology and increased global functioning; IPT-A yielded more clinically significant results that CBT |
| Clarke, DeBar, and Lewinsohn (2003) | Reports on the outcomes of four efficacy studies of a specific group CBT for adolescents called "Adolescent Coping with Depression" (CWDA) | Three of the studies showed statistically and clinically significant depression recovery over waitlist control with results maintained at follow-up to 2 years. The final study did not show a significant difference in outcome between CWDA and traditional psychotherapy |

treatment of anxiety disorder. Reductions in anxiety continued at 12-month follow-up in both studies (Kendall, 1994; Kendall et al., 1997). Another controlled study of the efficacy of CBT for the treatment of anxiety found similar results with the treatment condition eliminating panic attacks, reducing agoraphobic avoidance and negative mood states, and increasing self-efficacy for coping (Ollendick, 1995). Barrett et al. (1996) also found CBT to be efficacious in the amelioration of anxiety compared to a waitlist control at both post-intervention and 12-month follow-up. Systematic desensitization, modeling, and other CBT approaches are also "probably efficacious"

(U.S. Department of Health and Human Services, 1999, p. 162; emphasis in original). Research on effectiveness of CBT treatment for obsessive-compulsive disorder (OCD), which is classified by *DSM-IV* as an anxiety disorder, is inconclusive (U.S. Department of Health and Human Services, 1999).

**Parent Skills Training**

Parent skills training is often based on principles from CBT. The goal of these psychoeducational programs is to teach effective parenting strategies

**Table 2.6** Therapy outcomes associated with substance abuse (adapted by author Werner-Wilson & Morrissey, 2005)

| Study | Research design | Outcomes |
| --- | --- | --- |
| Stanton and Shadish (1997) | Meta-Analysis of 15 controlled, comparative studies of family and couples treatment for drug abuse | Family therapy showed superior results when compared to individual therapy and peer group therapy; family therapy showed superior results compared to parent education or family psycho-education; family therapies were likely to have fewer drop-outs when compared to other types of therapies; no one model of family therapy appears superior to any others |
| Liddle et al. (2001) | Efficacy study comparing multidimensional family therapy (MDFT), adolescent group therapy (AGT), and multifamily education (MEI) | There was statistically significant improvement across all three treatments; MDFT showed superior improvement overall with clinical significance in the areas of substance use, academic performance, and family functioning. Improvements for the MDFT were maintained at 1 year follow-up with academic performance and family functioning increasing at follow-up |
| Kaminer, Burleson, and Goldberger (2002) | Efficacy study comparing CBT to psychoeducational therapy (PT) | Both therapies produced a reduction in substance abuse at post-treatment, 3 month follow-up, and 9 month follow-up; CBT was more effective than PT for older youth and males |
| Curry, Wells, Lochman, Craighead, and Nagy (2003) | Efficacy study on the efficacy of an integrated group CBT with family therapy for adolescents with comorbid diagnoses of depression and substance abuse dependancy | Significant improvements were obtained in both depression and substance abuse; there was higher retention in the combined intervention than in CBT only group |
| Latimer, Winters, D'Zurilla, and Nichols (2003) | Efficacy study comparing an integrated group CBT with family therapy (IFCBT) with a psychoeducational drug curriculum (DHPE) | IFCBT produced superior results in drug and alcohol use at post-treatment and 6 month follow-up. Additionally, IFCBT produced superior results for adolescents in the pro-social areas of problem-solving and learning strategy skills, and problem avoidance; improvements in parental communication and norm/value setting were also superior to the DHPE group |

for behavioral problems. Parent skills training seems to be effective for treating attention-deficit/hyperactivity disorders and disruptive disorders.

*Parent Skills Training for Treatment for Attention-Deficit/Hyperactivity Disorder* (*ADHD*). Parents are taught behavioral techniques such as time out, point systems, and contingent attention. These interventions are associated with improvement in "targeted behaviors or skills but are not as helpful in reducing the core symptoms of inattention, hyperactivity, or impulsivity" (U.S. Department of Health and Human Services, 1999, p. 148). Parent skills training combined with self-control therapy for the adolescent was found to be efficacious when combined with a low dose of methylphenidate in a study by Horn et al. (1991). A review of 47 studies of the efficacy of interventions

with ADHD disordered youth also found parent training combined with services to the adolescent to be efficacious, and a similar review by Smith et al. (2000) found parent training not only efficacious but practical and safe. Parent training combined with medication is more effective than medication alone.

*Parent Skills Treatment for Disruptive Disorders*. Parent management training combined with a CBT problem-solving skills training for adolescents decreased aggression and externalizing behaviors at school and home in a study by Kazdin et al. (1987). This treatment also increased the adolescents' pro-social behaviors. Two specific parent skills programs that are "considered 'well-established' as treatment for disruptive disorders include *Living With Children* (Bernal,

Klinnert, & Schulz, 1980) and a videotape modeling parent training (Spaccarelli, Cotler, & Penman, 1992)" (U.S. Department of Health and Human Services, 1999, p. 166).

## Family/Systemic Therapies

Family/systemic therapies seem to effective treatments for depression and suicide (Brent et al., 1998; Diamond et al., 2002; Mellin & Beamish, 2002; Pinsof & Wynne, 1995; U.S. Department of Health and Human Services, 1999), alcohol and substance abuse (Liddle et al., 2001; Pinsof & Wynne, 1995; Stanton & Shadish, 1997; U.S. Department of Health and Human Services, 1999), and behavioral problems associated with Conduct Disorder and Oppositional Defiance Disorder (Alexander et al., 1994; Borduin et al., 1995, 2003; Gordon et al., 1995; Santisteban et al., 2003; Snyder et al., 1999). There is less empirical support, yet some evidence, that family/systemic therapies can be efficacious in the treatment of ADHD (Cantwell, 1995; Smith et al., 2000), anxiety (Barrett et al., 1996; Ollendick & King, 1998), and anorexia nervosa/bulima nervosa (Fairburn et al., 1993; Robin et al., 1999). In a special edition of the *Journal of Marital and Family Therapy* devoted to effectiveness of family intervention, family therapy was defined as "any psychotherapy that directly involves family members in addition to an index patient and/or explicitly attends to the interaction among family members" (Pinsof & Wynne, 1995, p. 586).

*Family/Systemic Treatment for Depression.* The U.S. Surgeon Generals' report on mental illness suggests that systemic family therapy shows "promise" but has not been investigated adequately to assess effectiveness (U.S. Department of Health and Human Services, 1999, p. 155). Comparisons of family therapy with CBT therapies have shown family therapy based treatments to be less effective than CBT but superior to waitlist control groups at post-treatment in the treatment of depression (Clarke et al., 1999; Pinsof & Wynne, 1995). There are several notable exceptions, however. Family-based therapy was more effective than

CBT when there was parental depression in a study by Brent et al. (1998). A study comparing Attachment-Based Family Therapy (ABFT) with waitlist control found ABFT resulted in significant reductions in depression, anxiety, and family conflict with results sustained at 2-year follow-up (Diamond et al., 2002). A recent review of the research on family therapy for depression found the effects of family therapy were more likely to be maintained at follow-up than other therapies, with longer term changes in adolescent depression, parental functioning, and behavioral control (Cottrell, 2003). Additionally, family-based therapies were more likely to show specific effects on parent-adolescent relationships/interactions and reduced relapse (Curry, 2001) and were more likely to be effective for youth dealing with comorbid disorders (Curry et al., 2003).

*Family/Systemic Treatment for Suicide* "Interpersonal conflicts are important stresses related to the risk of … potentially suicidal children and adolescents. Treatment of interpersonal strife may significantly reduce suicidal risk" (U.S. Department of Health and Human Services, 1999, p. 157). The following factors, which can be effectively treated with family therapy, are associated with suicide: (a) experiencing isolation within the family, (b) demonstrating problems associated with independence, and (c) viewing self as expendable in the family (U.S. Department of Health and Human Services, 1999). Empirical investigation of family therapy in the reduction of adolescent suicidal ideation is ongoing, although research to date has shown decreases in suicidal ideation compared to "usual care" (Harrington et al., 1998). Additionally, family therapy appears to have less attrition and increased satisfaction during treatment and at follow-up. Analysis of healthcare costs show increased participation in family therapy is associated with decreased placements in foster care or residential care resulting in substantial savings (Cottrell, 2003).

*Family/Systemic Treatment for Substance Abuse Disorders.* Family therapy by itself or in conjunction with other approaches seems to be the most effective treatment for alcohol and substance

abuse. A meta-analysis of 15 controlled, comparative studies of family treatment for drug/alcohol abuse concluded that family therapies were superior to other treatment approaches, enhanced the effectiveness of other treatments, and had fewer drop-outs than other treatment approaches (Stanton & Shadish, 1997). Recent studies continue to show both statistical and clinical significance in the reduction of substance abuse and the improvement of academic performance and family functioning with results maintained at follow-ups (Curry et al., 2003; Liddle et al., 2001).

*Family/Systemic Treatment for Externalizing Disorders such as ODD, CD, and aggression.* Numerous studies have reported the demonstrated efficacy of family therapies for externalizing disorders. Borduin et al. (1995) compared Multisystemic Family Therapy (MST) with individual therapy and found MST to be more effective in improving key family correlates of antisocial behavior, preventing future criminal behavior, and reducing adjustment problems. Further research on MST has continued to find this family therapy to be more effective than both usual services and individual therapy at decreasing behavior problems, criminal behavior, and association with antisocial peers. MST has also shown success in increasing family communication, positive family relationships, and pro-social peer relationships. These improvements are maintained at follow-ups as long as 4 years (Borduin et al., 2003). Family therapy, either alone or combined with CBT, has been shown to be effective at decreasing behavioral problems, increasing school performance, and improving family functioning at post-treatment, follow-up, and into adulthood for a number of ethnicities (Alexander et al., 1994; Gordon et al., 1995; and Santisteban et al., 2003).

## Potentially Ineffective Treatments

Treatments reported on in this section have been found to be ineffective in randomized, controlled studies, have not been found to be efficacious, or lack empirical support.

## CBT Treatment for Attention-Deficit/Hyperactivity Disorder (ADHD)

A review of the literature by Pelham et al. (1998) found that cognitive interventions for the treatment of ADHD are not efficacious. A similar review by Smith et al. (2000) reported cognitive interventions to be neither efficacious nor effective. Although interventions to improve problem-solving and social skills do not seem to improve behavior or academic performance, CBT may help treat symptoms of accompanying disorders such as ODD, depression, or anxiety disorders (U.S. Department of Health and Human Services, 1999).

## CBT Treatment for Substance Abuse Disorders

Several recent studies have examined CBT treatment for substance abuse disorders. While several of these studies found CBT to be superior to wait-list controls and psychoeducational therapy, they were not as effective as family therapies (Curry et al., 2003; Kaminer et al., 2002; Liddle et al., 2001). CBT combined with family therapy did show some promise (Curry et al., 2003; Latimer et al., 2003) with the combined treatment showing decreases in substance usage as well as improvements in problem-solving skills, family communication and functioning, and school performance.

## Inpatient Hospitalization

Inpatient hospitalization—which is the most restrictive form of mental health care provided—is used to treat youth with the most severe disorders. This form of treatment is the most expensive: half of the money paid for treating youth mental health problems is spent on inpatient hospitalizations which have the weakest empirical support (U.S. Department of Health and Human Services, 1999).

## Residential Treatment Centers

Residential treatment is less restrictive than inpatient hospitalization and is used by only about

8 % of children who are treated, but a significant amount of money is spent for this form of treatment: "nearly one-fourth of the national outlay on child mental health is spent on care in these settings" (U.S. Department of Health and Human Services, 1999, p. 169). Residential treatment centers (RTC)—which must be licensed—provide 24 h mental health services.

There are concerns about inconsistent admission standards, cost of services, risks associated with treatment, trauma associated with family separation, difficulty returning to family and community, victimization by staff, and learning antisocial behavior because of intensive exposure to other children (U.S. Department of Health and Human Services, 1999). The Surgeon General's report on mental health concludes that "Given the limitations of current research, it is premature to endorse the effectiveness of residential treatment for adolescents. Moreover, research is needed to identify those groups of children and adolescents for whom the benefits of residential care outweigh the potential risks" (U.S. Department of Health and Human Services, 1999, p. 171).

### Day Treatment

Day treatment refers to "a specialized and intensive form of treatment that is less restrictive than inpatient care but is more intensive than the usual types of outpatient care (i.e., individual, family, or group treatment)" (U.S. Department of Health and Human Services, 1999, p. 169). This form of treatment typically integrates education, counseling, and family interventions. Family participation during and following treatment is considered "essential" (U.S. Department of Health and Human Services, 1999, p. 169).

Research on day treatment programs suggests that they have a positive influence, but most studies have not included a comparison group. Results from 20 uncontrolled studies suggest that day treatment is associated with improved functioning for youth (and family), three-fourths of the youth are successfully reintegrated into regular school, and treatment prevents youth from entering residential

treatment which is more costly (U.S. Department of Health and Human Services, 1999). Research from one controlled study that included 6-month follow-up also suggested that day treatment was associated with "reducing behavior problems, decreasing symptoms, and improving family functioning" (U.S. Department of Health and Human Services, 1999, p. 169).

### Community-Based Treatment

Since the 1980s, services for youth mental health have shifted from institutional to community-based services. Community-based services (sometimes referred to as a "wraparound approach") include "case management, home-based services, therapeutic foster care, therapeutic group home, and crisis services" (U.S. Department of Health and Human Services, 1999, p. 172). Research "evidence for the benefits of some of these services is uneven at best" (U.S. Department of Health and Human Services, 1999, p. 172). Providing integrated treatment across multiple settings—an emerging trend in youth treatment (Fonagy et al., 2002)—is a common thread in these forms of community-based treatments (Grundle, 2002).

### Potentially Harmful Treatments

While the lack of evidence regarding certain treatments can and should give therapists pause before using them, there are some treatments that not only lack empirical support, they have been shown to be dangerous to the adolescents experiencing them.

### Holding Therapy

Holding therapy, which is sometimes referred to as attachment therapy, was developed to treat for Reactive Attachment Disorder (RAD). Those who practice holding therapy borrow some ideas from research on attachment, but their interventions

contradict fundamental concepts from that empirical literature (Werner-Wilson & Davenport, 2003). For example, proponents of holding therapy, who overstate the incidence of RAD, suggest that some children are incapable of forming attachments. This contradicts research which suggests that all children from some type of attachment with their caregiver. Further, those practicing holding therapy use interventions that would undermine development of a secure base. These practices "include three primary treatment components that are directed toward the child: (a) prolonged restraint for purpose other than protection; (b) prolonged noxious stimulation (e.g., tickling, poking ribs); and (c) interference with bodily functions" (Werner-Wilson & Davenport, 2003, p. 182). Holding therapy has been associated with at least two fatalities and lacks empirical support (Hanson & Spratt, 2000; Werner-Wilson & Davenport, 2003). For example, 10-year-old Candace Newmaker died as the result of a treatment referred to as holding therapy (Glenn, 2003). Hanson and Spratt (2000) suggest that "[t]he fact remains that there is simply no empirical evidence at present to support the assertion that attachment therapy is more effective, or even as effective, compared to accepted and conventional approaches" (p. 142).

## Conclusion

Professionals who provide services to adolescents have a responsibility to remain current about effective treatments and basic research on adolescent development. At minimum, those providing treatment to adolescents should understand aspects of adolescent development that influence presenting problems and interventions. In particular, treatment providers should strongly advocate for psychotherapy, recognize which therapies are effective for particular problems, and coordinate closely with other professionals, especially if clients are prescribed medications. Professionals should also cultivate sensitivity to diversity.

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# Adolescent Mental Health and the Diagnostic and Statistical Manual

Sherrie Sharp

## Introduction

The Diagnostic and Statistical Manual (DSM) has evolved through its successive versions from a document meant to help tally the types of mentally ill in the USA to a much broader publication that aims to describe, classify, and influence the course of treatment for those with mental illness and behavioral disorders.

In its current form the DSM is meant to outline diagnostic boundaries for its users. Its audience includes clinicians who reference it to select an accurate diagnosis in order to provide appropriate treatment, researchers who conduct studies that in turn inform evidence-based practice, and third party insurance companies who pay providers for treatment. The DSM framework of diagnoses also impacts the work of school administrators who determine the need for academic supports for children, and epidemiologists who study changes in the population and whose work informs municipal budgets. Each group mentioned is a stakeholder in the DSM in that the content of the manual influences their work. There is another, more important, set of stakeholders that includes the clients and their families.

All of these groups should be kept in mind as the chapter is reviewed. Their interplay ultimately determines how care is provided for adolescents. That said, each time a new version of the DSM is published it should be understood as a document that results from a tremendous amount research on validity and reliability of the diagnoses within it, but is also influenced by social, economic, and political pressures. This chapter provides an overview of the history of the DSM, an outline of some of the most pertinent changes in the new edition, an overview of recent trends in mental health care delivery to youth, and summarizes with comments on the forthcoming environment in which the DSM-5 will be used.

## History of the Diagnostic and Statistical Manual of Mental Disorders

Predecessors to the DSM date back to the 1800s when the USA was interested in identifying the frequency of idiocy/insanity for the purpose of census data. At that time, there were seven categories identified for census recording. During the 1900s the statistical classification continued to evolve and eventually the American Psychiatric Association and the New York Academy of Medicine contributed to a list of diagnoses to be included in the first edition of the American Medical Association's Standard Classified Nomenclature of Disease.

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This list was primarily for diagnosing inpatients with severe psychiatric and neurological disorders. After World War II, the US Army and later the Veteran's Administration expanded the list of diagnoses to better reflect the outpatient presentations of World War II servicemen and veterans. At just about the same time the sixth edition of the International Classification of Diseases (ICD-6) was being published (American Psychiatric Association, 2012a).

The first edition of the DSM was published in 1952 by the American Psychiatric Association (APA) as an alternative to the ICD-6 with the aim of focusing on clinical utility. The authors separated mental disorders into two main groups, one group of illnesses resulting from primary impairment of brain function and a second group resulting from a general inability of an individual to adjust to life's demands (Smith, 2010). Adolf Meyer's view that mental disorders represented reactions of the personality to psychological, social, and biological factors permeated the language of the manual (American Psychiatric Association, 2012a).

The development of the DSM-II, which was published in 1968, was influenced by the ongoing widespread dissatisfaction with the classification of mental disorders in the ICD-6 and ICD-7. Although the publication did not differ significantly from the original DSM, the psychobiological influence and the relevant term, reaction, were removed from the DSM-II. Due to this dissatisfaction with the ICD schema, the World Health Organization sponsored a review of the diagnostic issues. A British Psychiatrist, Erwin Stengel, conducted the review, and while it wasn't reflected in the DSM-II, his report ultimately inspired the need for explicit definitions of diagnoses as a means to improve reliability (American Psychiatric Association, 2012a).

The DSM-III, which was published in 1980, brought about radical transformation in the way mental health providers think about mental illness and resulted in the field essentially dropping the previous concepts of mental illness over a short period of time (Smith, 2010). This volume differed from the previous versions in several important ways: it included diagnostic criteria to help delineate the boundaries of each disorder, it introduced the five axis diagnostic schema, and it attempted to avoid commenting on the etiology of disorders. The authors provided medical nomenclature suitable for clinicians and researchers alike (American Psychiatric Association, 2012a). As a result, psychiatry became a discipline in which diagnosis played a much more central role (Smith, 2010). The credibility of the DSM-III was supported by the extensive empirical work done on the construction and validation of diagnostic criteria prior to its publication (American Psychiatric Association, 2012a). The DSM-III-R was published in 1987 to revise areas thought to be inconsistent and to clarify criteria for certain diagnoses.

The DSM-IV was published in 1994. The process of drafting it involved 13 workgroups of four to six individuals each assigned to investigate diagnostic categories. They analyzed 36 clinical data sets, and designed and carried out 12 large-scale field trials involving 7,000 participants at more than 70 sites spread across multiple countries (Smith, 2010; Widiger et al., 1994). Some of the field trials examined the effects of changing the wording of criteria on the reliability of diagnosis, or measured diagnostic consequences of differing criterion thresholds, while the majority investigated the sensitivity and specificity of diagnostic criteria comparing the not yet published ICD-10, DSM-III, DSM-III-R and one or more sets of new criteria (Smith, 2010; Widiger et al., 1998).

## The Recently Published DSM-5

The DSM-5 was released for sale in May 2013 and is slated for clinical use in early 2014. Its development began in 1999 when the medical director of the National Institute of Mental Health (NIMH) and chair of the APA began discussions about expanding the scientific basis for psychiatric diagnosis and classification. A research planning committee was convened (APA, 2012b) and the summaries of their work are the white papers published in A Research Agenda for DSM-5 (Kupfer, First, & Regier, 2002) to help guide

necessary research and promote discussion. Research agendas were developed through a 4-year process involving 13 conferences of 397 participants representing American Psychiatric Institute for Research and Education, three National Institute of Health institutes, and the World Health Organization. The 13 work groups conducted a comprehensive review of literature, proposed draft criteria, and called for three field trials to test the draft criteria (APA, 2012b).

## How Is the DSM-5 Different from DSM-IV-TR?

The highlights of changes from previous version to the DSM-5 involve a new structure, the addition of some disorders, the deletion of some disorders, alterations to some criteria, and changes in terminology. It is organized in three sections, the first being an introduction, the second containing the regrouped 22 categories of diagnoses with their respective criteria and codes, and the third containing assessment measures, cultural information, the alternative model for personality disorders, and conditions for further study. The diagnostic categories in section two were arranged by general categories such as Neurodevelopmental Disorders, Obsessive-Compulsive and Related Disorders, and Trauma- and Stressor-Related Disorders with the intent to cluster together disorders with common etiology (APA, 2012c). For example the Neurodevelopmental Disorders chapter includes intellectual developmental disorders, communication disorders, autism spectrum disorders, attention deficit/hyperactivity disorder, specific learning disorder, and motor disorder (APA, 2013). The purpose of the reorganization was to facilitate more comprehensive diagnosis and treatment and encourage research across diagnostic criteria within the chapter groupings. Scientific evidence including advances in neuroscience, brain imaging, and genetics were used to inform chapter groupings where available (APA, 2013).

With the publication of the DSM-5 there are overall 15 fewer diagnoses. Many diagnoses were combined, two were eliminated, and 15 were added. The eliminated disorders are sexual

aversion disorder and polysubstance-related disorder (Kupfer & Regier, 2013). Many of the combined disorders and several of the new disorders are relevant to adolescent mental health.

## Highlights of Changes to the Diagnoses Within Neurodevelopmental Disorders

Intellectual Disability is no longer hinged on IQ specifically; rather the current description focuses on intellectual functions such as reasoning, problem solving, planning, and judgment and on adaptive functions such as communication, social participation, and independent living. Language Disorder now combines expressive and mixed receptive-expressive language disorders. What was previously phonological disorder is now called Speech Sound Disorder. Childhood-Onset Fluency Disorder is now used instead of stuttering (APA, 2013).

Modifications were made to Attention-Deficit/Hyperactivity Disorder criteria raising the age of onset of symptoms to 12 years from 7, and only requires the presence of symptoms by that age rather than functional impairment. The subtypes have been changed to specifiers (APA, 2013).

Social Communication Disorder is a new disorder that may be used for individuals not meeting the full criteria for Autism Spectrum Disorder. It involves persistent difficulties in the social use of verbal and nonverbal communication including communication appropriate for social context, skills at matching the context or needs of the listener, following rules for conversation, and understanding what is not explicitly stated (APA, 2013).

The previous Pervasive Developmental Disorder group has been replaced by Autism Spectrum Disorder which is a single disorder with two main criteria categories and three levels of severity as shown in Table 3.1. Specifiers include with or without intellectual impairment, with or without language impairment, associated with a medical or genetic condition or environmental factor, associated with another neurodevelopmental, mental, or behavioral disorder, and with catatonia.

**Table 3.1** Autism spectrum disorder severity excerpt from DSM-5 neurodevelopmental disorders chapter

| Severity level for ASD | Social communication | Restricted interests and repetitive behaviors (RRBs) |
|---|---|---|
| Level 3: Requiring very substantial support | Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning; very limited initiation of social interactions and minimal response to social overtures from others | Inflexibility of behavior, extreme difficulty coping with change, or other restricted/repetitive behavior markedly interfere with functioning in all spheres. Great distress/difficulty changing focus or action |
| Level 2: Requiring substantial support | Marked deficits in verbal and nonverbal social communication skills; social impairments apparent even with supports in place; limited initiation of social interactions and reduced or abnormal response to social overtures from others | Inflexibility of behavior, difficulty coping with change or other restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts. Distress and/or difficulty changing focus or action |
| Level 1: Requiring support | Without supports in place, deficits in social communication cause noticeable impairments. Difficulty initiating social interactions and demonstrates clear examples of atypical or unsuccessful responses to social overtures of others. May appear to have decreased interest in social interactions | Inflexibility of behavior causes significant interference with functioning in one or more contexts. Difficulty switching between activities. Problems of organization and planning hamper independence |

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The authors note that individuals with well-established DSM-IV Diagnosis of Autistic Disorder, Asperger's Disorder, or Pervasive Developmental Disorder, NOS should be given the Diagnosis of Autism Spectrum Disorder. At the same time they encourage consideration of Social Communication Disorder for individuals who have marked deficits in social communication but otherwise do not meet criteria for autism (APA, 2013).

There had been significant concern when the draft criteria was made available that DSM-5 criteria would be less sensitive, meaning that fewer individuals who were previously diagnosed with Asperger's Disorder or Pervasive Developmental Disorder, NOS would meet the new criteria (Mattila et al., 2011). One study found that about 60 % of cases meeting criteria for one of the Autism Spectrum Disorders under the DSM-IV criteria would retain an Autism Spectrum Disorder diagnosis once the DSM-5 was in use (McPartland, Reichow, & Volkmar, 2012). However, the criteria were modified prior to publishing and when a second group revisited this using a much larger number of cases, they found that 91 % of children

who met DSM-IV criteria would also meet DSM-5 criteria (Huerta, Bishop, Duncan, Hus, & Lord, 2012).

Within neurodevelopmental disorders there are several notable changes that may impact care and the receipt of benefits. The discontinuation of IQ being the core feature of intellectual disability may allow more individuals who will struggle to achieve independence to be diagnosed with a disorder that may qualify them for work-place assistance or other benefits to enhance functioning. The modification to ADHD that raises the age of onset will allow the assignment of the diagnosis to individuals with perhaps more mild conditions. The new disorder, Social Communication Disorder will provide an option youth who might have been previously thought of as having a mild form of Pervasive Developmental Disorder, NOS but who do not fully meet the criteria of the newly organized Autism Spectrum Disorder.

The reorganization of autism spectrum disorders may not initially impact youth in treatment, but the anticipated improved consistency of severity levels may benefit the research process and ultimately allow for the development of

clearer treatment recommendations. This change was informed by research that demonstrated the previous criteria for pervasive developmental disorders were inconsistently applied making research and treatment recommendations less meaningful. For example Lord et al. (2012) showed that the relationships between clinical diagnoses, and standardized scores such as verbal IQ, language level, and core diagnostic features varied across sites in the way information was weighed and cutoffs were applied in 2,000 cases at 12 university-based sites. The authors concluded that the categorical diagnostic subtypes of autism spectrum disorders were not reliable even across sites with well-documented fidelity to the use of standardized diagnostic instruments. See Appendix 1 for a relevant case study where DSM IV-TR diagnoses are revised with DSM-5 diagnoses.

## Highlights of Changes to the Diagnoses Within Depressive Disorders

One noteworthy change is the replacement of Mood Disorder Not Otherwise Specified in the DSM-IV-TR with Disruptive Mood Dysregulation Disorder. In the earlier version, Mood Disorder, NOS had been described as a disorder that could not clearly be classified as depressive or bipolar in nature and it lacked any descriptive criteria (APA, 2000). In the new manual, Disruptive Mood Dysregulation Disorder has been well described as applying to youth between the ages of 6 and 18 who have had trouble with their mood for a year and the signs of this have been manifest in at least two settings. The mood disorder requires all four of the following be present: severe recurrent temper outbursts with verbal and/or physical aggression that are grossly out of proportion to the situation, the outbursts are inconsistent with developmental level, they occur three or more times per week, and between the temper outbursts the individual's mood is irritable or angry most of the day, nearly everyday and is observable by others. The criteria allow for up to a day's worth of manic or hypomanic behavior. This disorder is not for use in the context of Autism Spectrum Disorder, Posttraumatic Stress Disorder, Separation Anxiety Disorder, or Persistent Depressive Disorder (APA, 2013). The authors of the DSM-5 provided discussion about adding this diagnosis to address the significant increase in the rates of bipolar affective disorder being applied to pediatric patients. They note the intention to reserve the term bipolar disorder to be explicitly reserved for episodic presentations of bipolar symptoms (APA, 2013).

This controversy has been studied by Galanter, Hundt, Goyal, Le, and Fisher (2012) who discussed how clinicians and researchers apply manic criteria of bipolar disorder inconsistently to youth. The authors note that previous versions of the DSM contained inconsistencies between the stated criteria and the descriptive text which led to dissimilarities in subjects included in research studies and inconsistent findings across studies. The impact of this controversy was significant as there was a 40-fold increase in the number of pediatric patients diagnosed with bipolar disorder during the 9-year period between 1994 and 2003 (Carey, 2007; Moreno et al., 2007).

Dysthymic Disorder has been renamed Persistent Depressive Disorder but the criteria have remained the same (APA, 2013).

An important change to depressive episode description is that there is now a specifier for mixed features. Three of the following manic/hypomanic symptoms would be present during the majority of days of the episode: elevated/expansive mood, inflated self-esteem/grandiosity, pressured speech, flight of ideas/racing thoughts, elevated energy, risky behavior, and/or decreased need for sleep (APA, 2013). Previously, these patients might have been diagnosed with bipolar disorder type II, or NOS.

There is now an anxiety specifier across all mood disorders and it requires that the client feels at least two of the following: keyed up/tense, unusually restless, difficulty concentrating because of worry, fear that something awful might happen, sense of losing control of self (APA, 2013).

## Highlights of Changes to the Diagnoses Within Trauma- and Stressor-Related Disorders

In the DSM-5, trauma- and stressor-related disorders were separated from the anxiety disorders. The revised criteria for Post-traumatic Stress Disorder did away with those pertaining to the client's subjective reaction of intense fear, helplessness, or horror. The avoidance/numbing cluster was separated into two distinct symptom clusters, avoidance, and negative cognitions and mood which now recognizes persistent negative emotional states. The alteration in arousal and reactivity cluster includes irritable behavior, angry outbursts and reckless, self-destructive behavior. There are also modifiers to the intrusive symptom cluster that are applicable for youth. For example, there may be recurrent behavior reenacting themes of the event, and frightening dreams may not have recognizable content (APA, 2013).

## Highlights of Changes to the Diagnoses Within Obsessive-Compulsive and Related Disorders

The new Obsessive-Compulsive and Related Disorders chapter includes a new diagnosis, Excoriation Disorder (skin picking), that may be utilized in adolescent mental health. Within the Body Dysmorphic Disorder diagnosis a new core criteria was added that requires repetitive behaviors such as mirror checking, excessive grooming, skin picking, reassurance seeking, or mentally comparing one's appearance to that of others. There are specifiers related to preoccupation with muscle mass and degree of insight. Hoarding Disorder was also added to this group of diagnoses. The onset of some features may occur in adolescence, but generally onset of the disorder tends to occur after adolescence (APA, 2013).

## Highlights of Changes to the Diagnoses Within Somatic Symptom and Related Disorders

Changes to the somatoform disorders that may impact adolescent care include the revamping of Hypochondriasis into Somatic Symptom Disorder and Illness Anxiety Disorder. Somatic Symptom Disorder criteria require one or more of the following criteria be met for 6 months: disproportionate and persistent thoughts about the seriousness of symptoms, persistently high level of anxiety about health or symptoms, or excessive time and energy devoted to the symptoms. Specifiers are for severity, persistence, and involvement of pain. Illness Anxiety Disorder is described as a preoccupation with having or getting a serious illness. These criteria call for an absence of or mild intensity of somatic symptoms, a high level of anxiety about health, an excessive performance of or avoidance of health-related behaviors, and the symptoms must be present for 6 months. The revision to Conversion Disorder includes an emphasis on the incompatibility between the symptom and recognized neurological or medical conditions (APA, 2013).

## Highlights of Changes to the Diagnoses Within Feeding and Eating Disorders

In this category there were changes to Anorexia Nervosa and Bulimia Nervosa. The first criteria for Anorexia Nervosa is less specific than identifying a percentage of expected BMI, rather it contains the phrase, "significantly low weight." Also, the reference to amenorrhea (the absence of menstruation) has been eliminated. The degree of severity is outlined by BMI. Meeting the criteria no longer requires fear of gaining weight, but merely the persistent behavior that prevents weight gain is enough. Bulimia Nervosa and Binge Eating Disorder criteria were changed to lower the frequency of relevant behavior to once weekly in the

past 3 months. Binge Eating Disorder was moved from the appendix to the body of the text reflecting the extensive body of research supporting its validity and clinical utility (APA, 2013).

These changes to Anorexia and Bulimia Nervosa will result in more individuals meeting criteria for each of them.

## Highlights of Changes to the Diagnoses Within Sleep–Wake Disorders

Within the Sleep–Wake Disorders section, Insomnia Disorder no longer needs to be designated as the primary or secondary disorder. Hypersomnolence Disorder was separated from Narcolepsy, breathing-related sleep disorders were broken into three groups and the subtypes of circadian rhythm sleep disorders have been expanded (APA, 2013).

## Highlights of Changes to the Diagnoses Within Gender Dysphoria

Gender Dysphoria was made its own section in the DSM-5 with an update to the language used representing a change to focus on "gender incongruence" rather than cross-gender identification (APA, 2013). Separate criteria are provided for children and for adolescents and adults. Subtypes related to sexual orientation have been removed and specifiers have been added for those who have pursued hormone treatment and for those in whom an endocrinology-based cause has been identified (APA, 2013).

## Highlights of Changes to the Diagnoses Within Disruptive, Impulse-Control, and Conduct Disorders

Another new section has been added called Disruptive, Impulse-Control, and Conduct Disorders. The existing criteria for Oppositional Defiant Disorder have been organized into three domains and the diagnosis can be specified as mild, moderate, or severe. Conduct Disorder criteria have remained the same with a continuation of specifiers related to age of onset; however, a new specifier has been added to designate those with limited prosocial emotions. The specifier requires two of four characteristics to be persistently exhibited over 12 months. The four characteristics are lack of remorse or guilt, callousness or lack of empathy, lack of concern about performance, and shallow or deficient affect (APA, 2013). While the specifiers may provide more specific information, these changes are not likely to impact the number of youth with these diagnoses.

## Highlights of Changes to the Diagnoses Within Substance-Related and Addictive Disorders

One of the main changes in the Substance-Related and Addictive Disorders section is that abuse and dependence have been combined into Substance Use Disorder for the respective substances. Recurrent legal problems have been deleted and craving has been added as a criteria. Both cannabis withdrawal and caffeine withdrawal have been added to the roster of diagnoses (APA, 2013).

## Why Does the DSM Keep Undergoing Revision?

Clearly this was a tremendous amount of effort and some might wonder, "Why all the fuss?" Despite the workgroups and field trials involved in the development of the DSM-IV, the reliability and validity of the diagnoses continued to be called into question. Reliability refers to the degree to which a diagnosis would be consistently applied to the same, or similar patients, by different providers. Validity refers to the degree to which the diagnosis represents a disease state distinct from the general population. See Appendix 2 for discussion on the Rosenhan study.

Validity of the diagnoses in the successive DSM volumes has been an area of ongoing debate. One of the main issues is the definition of mental disorder (Cooper, 2005, 2007; Rounsaville et al., 2002). The definition in both the DSM-IV and -5 rest on a condition causing dysfunction, yet guidance on what constitutes dysfunction is not provided in either volume.[1]

While the successive publications of the DSM have improved the reliability with which many diagnoses could be made, there continue to be problems with the consistent application of criteria for certain diagnoses.

## What Do We Know So Far About the Changes Made from the DSM-IV-TR to the DSM-5?

The work groups that revised the manual conducted a comprehensive review of the literature, proposed draft criteria and called for three field trials to test the draft criteria (APA, 2012b). The first one studied how clinicians would perform when implementing the proposed DSM-5 criteria after receiving training on it. During the study, 279 clinicians of varied disciplines saw 2,246 patients with various diagnoses and comorbidity, and results indicated a range of reliability coefficients for the diagnoses and dimensional measures (Clarke et al., 2013).

In the second study, 11 academic centers participated in field trials to test 15 adult and eight child/adolescent diagnoses to evaluate the degree

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[1] The definition of mental disorder as outlined in the DSM-5 is as follows: A mental disorder is a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress or disability in social, occupational, or other important activities. An expectable or culturally approved response to a common stressor or loss such as the death of a loved one, is not a mental disorder. Socially deviant behavior (e.g., political, religious or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above (APA, 2013).

**Table 3.2** Test–retest reliability of target DSM-5 diagnoses at the adult field trial sites excerpt from DSM-5 field trials in the USA and Canada, part II: test–retest reliability of selected categorical diagnoses

| Target DSM-5 diagnosis | Statistical reliability |
|---|---|
| Posttraumatic stress disorder | Very good |
| Complex somatic symptom disorder revised | Very good |
| Major neurocognitive disorder | Very good |
| Schizophrenia | Good |
| Schizoaffective disorder | Good |
| Bipolar I disorder | Good |
| Binge eating disorder | Good |
| Alcohol use disorder | Good |
| Mild neurocognitive disorder | Good |
| Borderline personality disorder | Good |
| Major depressive disorder | Questionable |
| Generalized anxiety disorder | Questionable |
| Mild traumatic brain injury | Questionable |
| Antisocial personality disorder | Questionable |
| Mixed anxiety-depressive disorder | Unacceptable |

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to which two clinicians independently agreed on the presence or absence of a DSM-5 diagnosis. Five diagnoses were found to have very good reliability scores, nine were found to have good reliability scores, six were found to have questionable reliability scores, and three were found to have unacceptable reliability scores. However, eight diagnoses had insufficient sample sizes to accurately measure reliability (Regier et al., 2013). Tables 3.2 and 3.3 that summarize the author's findings.

The third field trial focused on the cross-cutting screening tools in Section III of the DSM-5. The cross-cutting screening tools have been included in response to a growing body of research indicating that mental health symptoms occur on a continuum from wellness to illness, and that illnesses can have overlapping symptoms. These measures are meant to be used for clinical and research purposes to identify comorbid symptoms that may otherwise go unnoticed and that may impact the course of illness (APA, 2013).

The field trial addressed the test–retest reliability of symptoms that occur in multiple diagnoses.

**Table 3.3** Test–retest reliability of target DSM-5 diagnoses at the child field trial sites excerpt from DSM-5 field trials in the USA and Canada, Part II: test–retest reliability of selected categorical diagnoses

| Target DSM-5 diagnosis | Statistical reliability |
|---|---|
| Autism spectrum disorder | Very good |
| Attention deficit/hyperactivity disorder | Very good |
| Avoidant/restrictive food intake disorder | Good |
| Oppositional defiant disorder | Good |
| Disruptive mood dysregulation disorder | Questionable |
| Major depressive disorder | Questionable |
| Mixed anxiety-depressive disorder | Unacceptable |
| Non-suicidal self-injury | Unacceptable |

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The reliability scores for self-report in adults were generally good to excellent. For children and adolescents, the parent reports were reliable, but the child self-reports were less reliable, with several reliability scores falling into the questionable range for this age group. Clinicians rated psychosis with good reliability in the adult age group but were less reliable when assessing it in children. Clinicians reportedly had reliability scores in the questionable range or lower for assessing suicide in all age groups which is a concerning finding (Narrow et al., 2013).

## Discussion of Recent Trends in Adolescent Mental Health Care

It is important to consider the changing environment in which the DSM is utilized in the care of youth. Several critical facets of understanding adolescent mental health care include the phenomenon of increasing mental illness (or at least the increase in psychiatric diagnoses being made) in our nation's youth, the demographics of those served by the current mental health system (and of those who are not), and some examples of financial pressures that have influenced the study of diagnoses, and in some instances, the ongoing refinement of the DSM.

Authors representing the National Center on Birth Defects and Developmental Disabilities and the Centers for Disease Control and Prevention reported in 2004 that approximately 17 % of individuals aged 18 years or younger in the USA have a developmental disability. The authors note the dramatic increase in youth receiving services for an autism spectrum disorder in the preceding decade and assert that the high cost of intervention calls for systematic public health monitoring (Rice, Schendel, Cunniff, & Doernberg, 2004). Since that publication the prevalence of autism spectrum disorders has continued to increase. From 2006 to 2008, the Autism and Developmental Disabilities Monitoring Network measured a 23 % increase in the prevalence of autism spectrum disorders (Wingate et al., 2012). The authors cite the lack of biologic markers for diagnosis and changes in clinical definitions over time as creating challenges in monitoring the prevalence of autism spectrum disorders.

Bipolar disorder also seems to be increasing among youth in the USA. As mentioned earlier there was a 40 % increase in pediatric bipolar disorder over the course of 9 years. While the inclusion of two separate illness courses had been previously combined under one diagnosis, one of those phenotypes has been newly described and separated as new diagnostic entity, namely Disruptive Mood Dysregulation Disorder. It is unclear at this time how the prevalence will settle out.

According to the Centers for Disease Control, there has also been a nearly 22 % increase in youth diagnosed with attention-deficit/hyperactivity disorder during the 4-year period from 2003 to 2007. Among older teens the increase was 42 %, and among Hispanic teens the increase was 53 % (Center for Disease Control & Prevention, 2010). Investigators representing the National Institute of Health and the Agency for Healthcare Research and Quality looked at the use of stimulant medication to treat attention-deficit/hyperactivity disorder and found that 3.5 % of US children received stimulant medication between 1996 and 2008 and that was steadily increasing (Zuvekas & Vitiello, 2012).

While the discussion above might lead to pondering whether youth are over-diagnosed and over-treated, there are studies indicating that the proportion of untreated youth is staggering. Recently investigators used the National Comorbidity Survey-Adolescent Supplement to analyze the rates of utilization of mental health services and sociodemographic correlates. They found that only 36 % of adolescents with mental disorders received services for their illness. While they found that chances of receiving services increased with the severity of disorder, half of adolescents with severely impairing mental disorders had never received mental health treatment. Service rates were found to be highest for attention-deficit/hyperactivity disorder and behavior disorder, but less than a fifth of youth with anxiety, eating, or substance use disorders received services. The authors also highlighted that Hispanic and non-Hispanic Black adolescents were less likely than their White peers to receive services (Merikangas et al., 2011). These results should be considered in the context that adolescents are minors, and generally, they do not refer themselves for treatment; rather, teens are typically presented for mental health care by their adult guardian due to the guardian's concerns. This phenomenon may contribute to the undertreatment of internalizing disorders such as anxiety, eating disorders, and substance use disorders since these problems may burden the other members of the household less than externalizing behavior.

Healthcare Cost and Utilization Project (H-CUP) data indicates that the most ill of our nation's youth are becoming sicker. The H-CUP Nationwide Inpatient Sample that represents discharges from US community hospitals from 1990 to 2000 evidenced that despite the shortened hospital stays, the diagnoses assigned to those youth were changing in makeup. More youth had psychotic and mood disorders, and intentional self-injuries, while fewer had adjustment disorders. The authors concluded that that over the course of the decade community hospital providers evaluated, treated, and discharged mentally ill youth more quickly, despite higher rates of more serious illness and self-harm, and transferred fewer youth to intermediate or inpatient care (Case, Olfson,

Marcus, & Siegel, 2007). More recent data from H-CUP indicates that from 1997 to 2009 there was a cumulative 26 % growth in the rate of hospitalization of youth for treatment of mood disorders (HCUP, 2011 cited in Facts & Figures, 2009).

In summary, recent trends indicate that our nation's youth are more likely to have a mental health diagnosis than ever before, that many of these diagnoses are indicative of more serious mental illness, and many of the youth have been untreated. The youth who have been treated have been receiving more of their care in the community than in hospitals.

## How Will Recent Trends in Prevalence, Recent Legislative Changes and the Publication of the DSM-5 Impact Adolescent Mental Health Care?

In addition to the trends in adolescent mental illness, other dimensions of mental health care delivery are shifting as well, for example, the number of youth covered by health insurance is expected to increase, and both the practice settings and the makeup of the teams delivering care are expected to evolve as new models for financing mental health care are introduced.

Recent legislative changes outlined in the Patient Protection and Affordable Care Act (ACA) as well as the Mental Health Parity and Addiction Equity Act (MHPAEA) are anticipated to result in more of our nation's youth being covered by insurance by disallowing exclusion due to preexisting conditions, expanding Medicaid coverage in states that took advantage of that option, allowing youth to stay on their parent's plans up to age 26, and through enrollment in the health care exchange.

However, a shortage of mental health care practitioners with skill sets to care for youth has been a recognized issue for some time. As organizations respond to incentives in that legislation it is likely that many will evolve into Accountable Care Organizations (ACO) as a partial solution to extend the care to more youth while managing resources. These ACO models tend to utilize

multidisciplinary teams such that youth are likely to be in contact with a nurse, social worker, a pediatrician, and possibly a psychiatrist during the course of their care. Within the ACO model, clients would receive mental health treatment in their chosen health care home. In areas where there are shortages of mental health practitioners, the care is more likely to involve telemedicine. Another trend is that the care will be increasingly measured for its effectiveness with incentives to expand effective treatments and weed out ineffective care.

It is in this context that the DSM-5 will be rolled out for clinical application. As for the implementation of the updated diagnoses, the criteria will be applied by clinicians of varied disciplines and with varied schools of thought within those disciplines. The field studies reviewed in this chapter indicate that some diagnoses will made with better reliability than others. The reorganization of diagnoses into clusters of diagnoses similar to each other was meant to facilitate more efficient consideration of differential diagnoses and will likely help. With the changing environment, mental health practitioners will have to think in new ways about the care they deliver to clients. With the DSM-5 in hand and motivated to provide care they believe will be helpful, clinicians will choose the best diagnosis available.

## Appendix 1: Application of Draft DSM-5 Criteria to a Historical Clinical Case

Catie was a teenager who presented to an outpatient practice in 2011 and throughout the course of her treatment the DSM-IV-TR diagnostic criteria were utilized.

She came for evaluation at the age of 14 during the summer between her seventh and eighth grade. At the same time, her mother moved out of state and she moved in with her father. At the evaluation, her parents reported that she had been diagnosed with Anxiety Disorder, NOS, and ADHD, combined type and was treated with psychostimulant medication. They expressed concerns that her

stimulant medication was contributing to anxiety. They also expressed concern about her continued struggle with peer relations, organizational skills, and poor completion of simple daily routines. Her parents further described her as having difficulty with change, having a low frustration tolerance and being rigid. Her parents described a history of her having difficulty with socialization and expressed concern that it had progressed to her having no apparent interest in socializing at all anymore. She was reportedly comfortable with people she knew well but otherwise had become quite withdrawn. She never went out with friends or talked to friends on the phone or through texting or email. Her father reported that he had tried to get Catie interested in several different club activities and sports and community programs but she had declined them all. He offered to facilitate involvement in an activity of her choice but she would not choose one.

Catie's father reported that she was perfectionistic in some ways. She would reportedly erase and re-write her name and she wouldn't hand in her homework if she didn't think it was perfect. She also lost her homework at times. She also had problems with hygiene. She would refuse to wash her face, brush her teeth, shower or use deodorant. Reminders to complete these steps in the morning would infuriate her.

Her parents also described her as having a very limited range of activities and interests. Her father reported that she had two activities, going to school and watching television. While she did have favorite shows, her parents did not see that as a source of intense focus. She did not have routines or rituals. She did not have stereotyped and repetitive motor mannerisms or persistent preoccupation with parts of objects.

Catie's achievement of developmental milestones were not well recalled by her parents who divorced when she was one and a half years old. She had been in therapy in the third or fourth grade, but parents couldn't recall why. She had been identified to participate in social skills group at school in junior high. By the seventh grade she had an individualized education plan that allowed extra time for tests and extra prompts on tests and classwork as well as

allowed her to leave the classroom if she needed to for emotional reasons.

The family history was positive for agoraphobia, obsessive compulsive disorder, anxiety, depression, bipolar disorder, attention deficit hyperactivity disorder, substance abuse, and a completed suicide.

Catie's medical history was positive for little physical activity, and headaches. Catie was overweight, and had acne but refused treatment for it.

Catie's mental status exam at the evaluation was notable for a very shy presentation. She made very little eye contact. She spoke mainly to refute her parents' reports of their concerns. Her speech was reflective of her affect and was at times loud in volume, but not rapid. Her language seemed underutilized and consisted mainly of brief defensive pleas. She reported that her mood was, "fine." Her affect was intermittently irritable which she attributed to being evaluated. Her thought process was inflexible. Her thought content was negative for destructive thoughts. Her perceptions were reportedly negative for hallucinations. Insight was poor and judgment was fair to poor.

Catie was provisionally diagnosed with anxiety disorder, NOS, and attention-deficit/hyperactivity disorder, predominantly inattentive type with a plan to continue to assess for the autism spectrum disorders. During the course of treatment, recommendations were made to have neuropsychological evaluation to assess auditory and verbal processing but her parents did not pursue it.

With continued observation and parental report, Catie's long-standing issues with social and emotional immaturity and variable performance began to surface as treatment issues. Her father continued to report that she was irritable and had no motivation to engage in activities despite her continued assertion that her mood was great. Her father also began to report lagging social skills since she was young girl. He reported that when she was 5 or 6 and he'd take her to the playground to play with other kids, she would play near them but play by herself and the other kids would be more engaged with each other but not with Catie.

Discussions were had with Catie's parents regarding features of pervasive developmental disorder, NOS with co-occurring features of anxiety, attention and concentration issues. Catie's parents thought that the description of impairment in the development of reciprocal social interaction and impairment in both verbal and nonverbal communication skills described her very well.

Utilizing the DSM-5 criteria, Catie would be diagnosed with Autism Spectrum Disorder Level 1, without accompanying intellectual impairment. It remained unclear whether there was accompanying language impairment due to Catie's inconsistent verbal performance and the lack of neuropsychological testing. She has noticeable social impairment and seemed to have decreased interest in social interactions. She also demonstrated inflexibility and problems with organization and planning that hampered independence. Catie would also continue to meet criteria for ADHD, predominantly inattentive type. Although, Catie continued to deny symptoms of anxiety it would be appropriate to rule out social anxiety disorder.

In short with the implementation of the DSM-5, a clinical presentation such as Catie's may warrant a review of diagnostic criteria to reaffirm diagnoses or to adjust them.

## Appendix 2: Discussion of the Rosenhan Study

An historical case study that is sometimes invoked to highlight the essence of these issues is the study by Dr. Rosenhan in the paper titled, "On Being Sane in Insane Places," in which he had eight individuals present to psychiatrists to see how their case would be handled if they reported a single feigned symptom of hearing a voice that said, "thud." All eight were admitted to psychiatric hospitals and then acted as normally as they could. The paper highlights that the staff members had pre-conceived notions that informed their interpretations of normal behavior and those interpretations were recorded in the patients' charts. Each person was detained for lengths of stay between

7 and 52 days. Each patient was diagnosed with schizophrenia in remission in their discharge paperwork (Cooper, 2007). In 1973, when that study was conducted the available version of the DSM was volume II, and as discussed above there was inconsistent use of the manual and it lacked diagnostic criteria.

In an alleged follow-up study, in 2004, that was later called into question, Lauren Slater reported that she presented herself at eight different emergency rooms claiming to hear a voice saying, "thud," and while she was not admitted to the hospital, in the majority of cases, she claimed she was diagnosed with depression with psychotic features and given prescriptions to begin treatment. Subsequent researchers attempting to reproduce or confirm her findings have not been able to do so (Spitzer, Lilienfeld, & Miller, 2005; Zimmerman, 2005), and she has been accused of fraud (Zimmerman, 2005).

While Rosenhan's case study is provocative, it mainly speaks to whether mental health providers can accurately diagnose when being lied to. Malingering is a recognized diagnosis that is well described in the DSM-IV-TR as having an essential feature of intentional production of false, or grossly exaggerated, physical or psychological symptoms, motivated by external incentives (APA, 2000). A fair scientific look at this issue would entail a comparison of the incidence of misdiagnosis in mental health compared to misdiagnosis in other primary care or specialty settings when the patient is feigning symptoms. With the right study design, those results would provide a basis for addressing validity and reliability of diagnoses in the DSM compared to those in the International Classification of Diseases (ICD) that is used by US physicians in fields of medicine other than psychiatry.

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# Families and Adolescent Development

**4**

Gary W. Peterson and Kevin Ray Bush

## Families and Adolescent Development

Throughout much of the past century, adolescence was thought to be a developmental stage characterized by inevitable "storm and stress," declining family influences, and a growing separation from parents (Arnett, 1999; Gavazzi, 2011; Laursen & Collins, 2009). The popular media, even in the twenty-first century, continues to portray adolescent development within families as characterized by parent–adolescent turmoil triggered by physiological changes, raging hormones, re-emerging sexual impulses, and rapidly changing social expectations for the young (Laursen & Collins, 2009; Peterson, 2005). Although a significant minority of adolescents experience persistent patterns of troubled family relationships and problem behavior (Arnett, 1999), for the majority of youth, a more balanced and positive view prevails about the influence of domestic life on ado-

lescent development (Masten & Shaffer, 2006; Peterson & Bush, 2013a). In fact, a significant majority of adolescents report closeness with their parents, value parents' opinions, believe their parents love them, respect parental authority, and wish to be like them (Steinberg, 2001). The majority of adolescents tend to agree generally with parents on work attitudes, occupational and educational goals, as well as religious, moral, political, and ideological values (Wang, Peterson, & Morphey, 2007). Current research indicates that differences of opinion are greater among adolescents than between teenagers and their parents (Allen & Land, 1999; Gavazzi, 2011). For most youth, the family remains the primary arena of social influence, both for fostering positive and negative consequences for the young (Gavazzi, 2011).

This chapter focuses on several social, psychological, and family processes (i.e., parent behaviors, parent–adolescent conflict, and interparental or marital conflict) that predict the development of adolescent social competence and problem behavior. A related focus is family structural variation (i.e., divorce, remarriage, and the presence of siblings) that may result in social, psychological, and family process changes that foster or inhibit social competence or problem behavior. An underlying theme is that parenting within families that fosters social competence provides adolescents with resilience and coping abilities that function as natural forms of everyday prevention.

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## Socialization: Systemic Qualities in the Larger Social Context and in Families

Socialization refers to a set of *interpersonal processes* through which culturally defined meaning is passed on to or *enculturated* in the young. During adolescence, therefore, the development of social competence occurs as a result of the *process* of socialization—or the interpersonal dynamics through which a society reproduces itself by encouraging the young to become functioning members of society (Grusec & Davidov, 2007; Maccoby, 2007; Peterson & Bush, 2013a).

Socialization is a complex array of multidirectional processes through which important influences enculturate the young within relationships having systemic and reciprocal (or mutual) qualities (Gavazzi, 2011; Kuczynski & De Mol, in press; Maccoby, 2007). Beyond family boundaries, a variety of major social institutions and interpersonal settings provide contexts within which individuals (i.e., adolescents) have direct or indirect socialization experiences, including religious organizations, the workplace, schools, the mass media, government, neighborhoods, and communities (Bronfenbrenner, 2005; Tudge, Mokrova, Hatfield, & Karnik, 2009). A pattern of dynamic interaction exists between developing adolescents and their social environments that include influential factors from different levels of larger social systems at the biophysical, psychological, and sociocultural levels of the human experience (Bronfenbrenner, 2005; Kuczynski & De Mol, in press; Peterson & Bush, 2013a; Peterson & Hann, 1999; Tudge et al., 2009).

Socialization within family relationships, the most intimate level of the social environment, also operates through *systemic* qualities that tie the members of families (e.g., adolescents, parents, and siblings) together as part of a larger relationship whole (Gavazzi, 2011; White & Klein, 2008). All elements of the family system are interrelated through dynamic, mutual, and circular processes that link together individuals and relationships within families. Although each family is characterized by relationship qualities that generalize throughout the system, *subsystems* also exist within the larger family (e.g., the parent–adolescent relationship or the marital relationship) that have somewhat unique patterns and communication processes (Gavazzi, 2011; Masten & Shaffer, 2006). A systems view of family relationships with adolescent members is often concerned with the degree of openness in information exchange that occurs between parents and their young. Open communication between parents and adolescents is often proposed to foster closer ties, help to prevent or solve problems, assist parents and teenagers to manage conflict, and allow parents and adolescents to negotiate adaptive developmental change (e.g., progress toward autonomy) (Gavazzi, 2011).

Much of the time, families seek to provide stable environments, common routines, a sense of order, and daily security for the young. Despite this emphasis on stability, however, established family communication patterns also are challenged across time so that the family system and its members can continue to develop.

An important period of family change and adjustment occurs when children enter the stage of adolescence and begin making progress toward adulthood. Parents and adolescents must renegotiate their relationships and undergo challenging shifts in the established ways of dealing with each other (Carter & McGoldrick, 1999; Gavazzi, 2011). Family relationships must accommodate adolescents' more complex social relationships beyond the family (e.g., with peers), more personal decision-making and autonomy, as well as greater emphasis on identity exploration. At the same time, parents of adolescents must continue to supervise, protect, communicate with, and provide guidance to reduce the likelihood that teenagers will become involved in problem behaviors (Gavazzi, 2011).

Family systems must strike a balance between allowing change that encourages greater individual competence, while maintaining stable connections that prevent teenagers from drifting into deviant behavior (Gavazzi, 2011; Peterson, 2009; Peterson, Bush, & Supple, 1999). As this period of development progresses, parents and adolescents must gradually renegotiate (or change)

their relationships from ones in which parents are clearly in charge toward new arrangements in which greater equality and more self-responsibility and autonomy are granted to adolescents (Carter & McGoldrick, 1999; Masten & Shaffer, 2006; Peterson, 2009). From the standpoint of the larger family system, such complicated negotiation processes can be conceptualized as "differentiation," or the degree to which family systems tolerate individuality and difference, while also encouraging intimacy and belongingness (Bartle-Haring, Kenny, & Gavazzi, 1999; Gavazzi, 2011).

## Socialization in the Parent–Adolescent Relationship

Traditional conceptions of socialization within the family subsystem, parent–adolescent relationships, are dominated by the idea that youth are *influenced* by parents and other family members to internalize and become responsive to societal expectations (Peterson & Hann, 1999). Central components of this influence process within families are socialization strategies (e.g., parental styles and behaviors) used by parents, either intentionally or habitually, to encourage (or discourage) the young to function in adaptive ways. Consequently, acting in an adaptive manner consistent with cultural expectations, or being "socially competent," designates the abilities of adolescents to adjust to their society's major social expectations and contexts in a manner that avoids deviant or problem behavior (Peterson & Bush, 2013a).

Contrasting with this conception of socialization as a one-way process, numerous observers have countered with the idea that too much emphasis has been placed on how adolescents are shaped and guided by parents (and other social agents) to become members of society (Maccoby, 2007). According to this *deterministic* or *social mold* conception of socialization (Gavazzi, 2011; Kuczynski & De Mol, in press; Peterson & Bush, 2013a, 2013b; Peterson & Hann, 1999), the young are viewed primarily as passive recipients of parental influence (and

the influence of other social agents) in which parents either shape the behaviors of adolescents or parental attributes become internalized by the young as "inner qualities" that govern their beliefs, attitudes, motives, and behaviors (Bush & Peterson, 2013; Gavazzi, 2011; Maccoby, 2007; Peterson & Bush, 2013a).

The persistence of deterministic models of socialization is based, to a large extent, on pragmatic or heuristic needs of scientific methodologies to focus on limited aspects of the social context within any particular study. Because of such empirical compromises, most scholarship on parent–adolescent relationships should be read with a balanced awareness that socialization is substantially more complex than one-way shaping or internalization processes (Kuczynski & De Mol, in press). Instead, the internalization of parental values and expectations requires active construction on the part of adolescents through reciprocal, if not more complex processes (Gavazzi, 2011; Peterson & Bush, 2013a; Peterson & Hann, 1999). Such complicating factors include the ideas that internalization of parental influence is achieved only in terms of several factors such as (1) the young person's understanding of these socialization efforts, (2) the varied beliefs, values, and expectations that parents and adolescents bring to a social context, (3) the degree to which parental influence attempts are accepted or not accepted by the young, (4) the varied types of behavioral responsiveness and temperament of the adolescent, (5) the adjustments in child-rearing strategies that parents make to accommodate the young person's individuality, and (6) how the parent's and adolescent's beliefs, values, and expectations are reshaped through these interactions (Kuczynski & De Mol, in press; Peterson & Bush, 2013a; Peterson & Hann, 1999; Peterson & Rollins, 1987). Once these issues are considered, the study of parental socialization strategies (i.e., parental behaviors) can be reconceptualized as a reciprocal two-way street and not a one-way avenue.

Instead of one-way directional models, therefore, the internalization of parental qualities or parental shaping is more accurately viewed as

complex processes of continuity, negotiation, and change. Parent–youth socialization is a dialectical or mutual process in which continuity, creativity, and change are complementary components of a larger whole (Bush & Peterson, 2013; Gavazzi, 2011; Kuczynski & De Mol, in press; Maccoby, 2007; Peterson & Bush, 2013a). This complex bidirectional process helps to define the core elements of social competence and problem behaviors as well as the child-rearing approaches that parents use (i.e., parental behaviors) to foster such outcomes.

## General Cultural Values and Adolescent Socialization in Families

Fundamental for understanding parent–adolescent relations is to clarify how general cultural values provide the basis for developmental goals that shape parents' socialization behavior and, in turn, influence adolescents' socially competent or deviant qualities (Carlo & de Guzman, 2009). Consistent with this view, the concepts *individualism* and *collectivism* are useful for conceptualizing general societal value systems that have implications for the dynamics and developmental outcomes of parent–adolescent relationships. These general societal value systems have important commonalities and differences across cultures that help structure interpersonal dynamics within parent–adolescent relations (Rothbaum & Trommsdorf, 2007; Tamis-LeMonda et al., 2008; Triandis, 2001).

Individualism and collectivism are not the only collections of values/beliefs that are sources of meaning for the socialization process. These macro-level concepts can be used, however, to illustrate how general value systems give rise to *parental ethnotheories* that play key roles in defining culturally specific definitions of adolescent social competence and problem behavior. Moreover, parental ethnotheories provide guidance for the corresponding socialization strategies used by parents within specific cultures to foster either prosocial or problematic outcomes in the young (Harkness & Super, 2006).

Societies have sometimes been characterized as leaning approximately either toward individualistic or collectivistic value systems (Rothbaum & Trommsdorf, 2007; Tamis-LeMonda et al., 2008; Triandis, 2001). The first of these, *individualistic* societies, can often be characterized as promoting the centrality of the *independent self*, which involves commitment to beliefs in the private self, individual freedom, autonomous decision-making, and achievement values based on striving for personal attainment and self-interest. Such values are most clearly representative of the European American mainstream of the middle and upper middle classes in the USA (Perry, 2001; Rogoff, 2003).

In contrast, *collectivistic* societies promote the development of the *interdependent self* through commitment to values of cooperation, mutual support, harmonious relations, and the primacy of group connections. Cultural and ethnic traditions in collectivistic societies tend to emphasize stronger family bonds and greater respect for adult authority than is common within the dominant US culture (Rothbaum & Trommsdorf, 2007; Triandis, 2001). Collectivistic values tend to be prominent in societies or ethnic groups such as those of Asia (e.g., China, Japan, and Asian-American ethnicities) and Latino cultures (e.g., Mexico, Latin American countries, and Latino-American ethnicities).

Several points should be kept in mind before generalizing too much about the societal-level values of individualism and collectivism within the great diversity of societies. First, most societal-level value structures cannot be characterized as either *exclusively* individualistic or collectivistic, but rather these two systems coexist in varied degrees of balance across different societies/cultures (Peterson, 2009; Rothbaum & Trommsdorf, 2007; Triandis, 2001). For example, although evidence exists that the US leans significantly toward individualism (Perry, 2001; Rogoff, 2003) and that Mexico tilts somewhat more toward collectivism (Cauce & Domenech-Rodriguez, 2002; Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002), other observers caution that these differences represent culturally distinct balances between *both* of these general complexes of

values and beliefs (Rothbaum & Trommsdorf, 2007; Wilson & Esteinou, 2011). Instead, the practice of characterizing societies as either individualistic or collectivistic is, at best, a broad brush description of general tendencies, with most complex societies being characterized by substantial ethnic, regional, and socioeconomic diversity (Esteinou, 2004, 2008).

Individualism and collectivism, therefore, are not mutually exclusive, but coexist in varying degrees within societies and subcultures. When applied to micro-levels of analysis (or relationship levels), therefore, these "hybridized mixes" of culturally defined values, can result in guidance for the behavior of a society's members, including adolescents and parents within families (Kagitcibasi, 1997; Rothbaum & Trommsdorf, 2007).

Moreover, there is no implication in the concepts individualism and collectivism that one is "superior to" the other. Instead, use of these two constructs simply takes note of the fact that healthy human existence at both the societal and relationship levels of analysis involves balancing the interests of the autonomous self with powerful tendencies to be both connected and responsible to others. Each culture and ethnic group will find a particular balance between these general values that fits its social–ecological circumstances (Peterson, 2009; Peterson & Bush, 2013a; Raef, 2006; Rothbaum & Trommsdorf, 2007).

## Parental Ethnotheories and Adolescent Social Competence in the USA

At a more specific level of analysis, the general cultural values of individualism and collectivism within a particular social community provide a basis for more focused or particular values and expectations referred to as *parental ethnotheories*. These more specific values and expectation take the form of goals of socialization (or parental ethnotheories) regarding what attributes and behaviors parents should encourage or discourage in adolescents within a particular culture of ethnicity (Harkness & Super, 2006; Keller,

Borke, Yovsi, Lohaus, & Jensen, 2005; Peterson & Bush, 2013a; Tamis-LeMonda et al., 2008). Parental ethnotheories, or the goals of socialization, provide guidance about culturally valued outcomes for youth, or conceptions of social competence, as well as qualities to avoid that can result in problem behavior (Eccles, 2007; Harkness, 2008; Harkness & Super, 2006; Keller et al., 2005; Peterson & Hann, 1999). From the perspective of an individualistic culture, for example, parental ethnotheories often provide the guidance that "adolescents should be taught to be their own persons and to be responsible for themselves rather than to be dependent upon and defer to family authority figures." Consistent with this viewpoint is the idea that "self-expression and individual demonstrations of emotion should be encouraged." In contrast, a sample parental ethnotheory for a collectivistic culture would tend to specify that adolescents should be taught that "one's sense of self" is determined largely by "contributing to the overall well-being of their immediate group." Hence, the "interests of one's family" should take priority over one's "personal ambitions."

Along these lines, parents in all societies have specific beliefs and goals (i.e., parental ethnotheories), based on general cultural values, which are aimed at instilling dimensions of *social competence* in their young and discouraging problem behavior (Gavazzi, 2011; Gillespie, 2003; Peterson, 2005). *A general definition of social competence, therefore, is a set of attributes and psychosocial resources that help adolescents adapt to their social circumstances and cope successfully with everyday life sufficiently to ward off problem behavior* (i.e., *externalizing and internalizing behavior*) (Baumrind, 1991; Carlo & de Guzman, 2009; Peterson, 2005; Peterson & Bush, 2013a). Recent conceptions of social competence in the dominant culture of the USA and Western Europe identify some of its subdimensions as: (1) establishing a balance between autonomy and connectedness (or conformity) in reference to parents (and other adults), (2) developing an effective achievement orientation, (3) attaining psychological or cognitive resources (e.g., a positive self-esteem, identity achievement, and

problem-solving skills), and (4) acquiring social skills with peers and other interpersonal relationships (e.g., conflict management skills, skills in social initiative, and cooperation) (Peterson & Bush, 2013a).

These aspects of social competence, or sources of social–psychological *resilience* and well-being, assist adolescents to cope successfully with challenges and prevent developments that can lead to risk behavior (Carlo & de Guzman, 2009; Gillespie, 2003; Hauser, 1999). Consequently, the inverse or flip side of social competence is *risk* or *problem* behavior, conceptualized as either *internalizing* or *externalizing* attributes (Kuperminc, Wilkins, Roche, & Alvarez-Jimenez, 2009). Internalizing attributes are psychological disturbances of adolescents that focus on the self (e.g., depression, suicidal thoughts, and eating disorders) (Hughes & Gullone, 2008). Externalizing attributes, in turn, are psychological difficulties that take the form of "acting out" against society (e.g., violent behavior, vandalism, theft, delinquent behavior, substance abuse, and conduct disorders in school) (Gavazzi, 2011).

Most, if not all cultures, tend to emphasize the development of the same general dimensions of social competence (i.e., balancing autonomy and connectedness, achievement, psychological resources, and social skills) to a considerable degree during the socialization process. However, substantial variation exists across cultures in the precise meaning and emphasis placed on each dimension of social competence. This is particularly true in the manner that socialization goals focus on fostering either individual interests (i.e., individualism) or those of the social group (i.e., collectivism) or some combination of both value complexes (Carlo & de Guzman, 2009; Peterson, 2005, 2009; Peterson & Bush, 2013a; Raef, 2006; Rothbaum & Trommsdorf, 2007). European-American families in the USA with adolescent members, for example, tend to focus on the promotion of autonomy (i.e., as an expression of individualism) rather than conformity and obedience (i.e., as an expression of collectivism) as a high priority goal of adolescence. Although the importance of families (i.e., familism or

collectivism) is a continuing theme in the USA, compared to more collectivistic societies, US cultural traditions place greater emphasis on individual social mobility, personal autonomy, egalitarian relationships among family members, and the nuclear (or increasingly single-parent) families rather than the complexities (and hierarchies) of extended family relationships (Kagitcibasi, 1997; Peterson, 2009; Rothbaum & Trommsdorf, 2007; Wilson & Esteinou, 2011).

US socialization goals that are based in individualism, for example, include autonomous conceptions of the self (e.g., self-esteem) reflecting such ideals as the importance of the private self, personal uniqueness, self-interest, and individual liberty (Kagitcibasi, 1997; Peterson, 2009; Rothbaum & Trommsdorf, 2007; Triandis, 2001). The focus of an adolescents' achievement orientation (e.g., academic achievement) in the USA is commonly that of pursuing personal attainment goals as an expression of self-interest in competitive contexts. Achievement is viewed largely as an outgrowth of an individual's commitment and efforts to attain self-defined goals based on one's personal identity achievement (Eccles, 2007). Finally, in reference to social skills, assertive interpersonal qualities are valued as a means of facilitating personal advancement within one's social relationships. Adaptive social skills are those that tolerate moderate levels of interpersonal conflict at some expense to harmonious human relationships and deference to authority (Peterson & Bush, 2013a).

Despite these general patterns in the dominant European American culture, however, it is also important to recognize that specific ethnic groups within the USA (e.g., Latino American and Asian American groups) place greater emphasis on collectivism. These islands of collectivistic diversity in the larger sea of individualism tend to emphasize close family connections over progress toward autonomy, personal achievement in the service of group interests, self-conceptions based on relationships with others, and social skills emphasizing the maintenance of harmonious relationships (Carlo & de Guzman, 2009; Grau, Azmitia, & Quattlebaum, 2009; Kagitcibasi, 1997; Peterson, 2009; Rothbaum & Trommsdorf,

2007; Triandis, 2001). Despite these complexities, however, the dominant culture of the USA places greater overall emphasis on individualistic rather than collectivistic definitions of social competence (Kagitcibasi, 1997; Peterson, 2009; Rothbaum & Trommsdorf, 2007).

## Parental Socialization Behavior and Family Conflict

The same parental ethnotheories in a culture that define the valued qualities of social competence also are used to provide guidance for parenting strategies and family processes that are used to either foster or hinder these desired outcomes (Grau et al., 2009; Keller et al., 2005; Peterson, 2009). Once there is considerable agreement about what constitutes the goals and expectations for social competence in a particular culture, these desired ends of the socialization process provide parameters for how parenting should be conducted to achieve these outcomes (Carlo & de Guzman, 2009; Peterson, 2005; Peterson & Hann, 1999). The socialization practices prescribed by such values include expectations for such things as how warmth is expressed, the degree to which physical punishment is tolerated, how much school work should be monitored, how youthful autonomy is encouraged or restricted, as well as how conflict is expressed and tolerated within families (and many more). The overall idea is that parental ethnotheories, that are rooted in general cultural values, play important roles in shaping (1) attributes of the young that are valued in a culture, (2) parental beliefs about how to foster or discourage these desired goals, as well as the (3) actual socialization practices and the kinds of conflict that predict adolescent outcomes (Bush & Peterson, 2013; Peterson, 2005; Peterson & Bush, 2013a; Peterson & Hann, 1999).

Based on extensive research, an important means of conceptualizing these strategies, or *parental socialization behavior*, refers to specific or discrete dimensions of child-rearing actions that are often thought to be independent from or orthogonal to each other. These specific dimensions of parental behavior also convey social meanings that may, in part, originate in either collectivistic, individualistic, or some form of hybridized value system (Bush & Peterson, 2013; Holden, 2010; Peterson & Bush, 2013a; Peterson & Hann, 1999; Peterson & Rollins, 1987). A continuing focus of research on parent–adolescent relations in the USA has been to identify how distinctive parental behaviors contribute differentially to the development of social competence or problem behavior by the young as defined in terms of distinct cultural values. Similar in many ways, is research on types of family conflict that occurs between parents and adolescents as well as between parents that may predict either problem behavior or social competence by the young (Baumrind, 1991; Bush & Peterson, 2013; Collins & Steinberg, 2006; Holden, 2010; Laursen & Collins, 2009; Peterson & Bush, 2013a; Peterson & Hann, 1999; Steinberg, 2001).

## Parental Behaviors

The most frequently studied parental behaviors are parental warmth or support, autonomy-granting behavior, intrusive psychological control, reasoning, monitoring, and punitiveness (Bush & Peterson, 2013; Gavazzi, 2011; Holden, 2010; Peterson, 2005; Peterson & Bush, 2013a). Each of these behaviors conveys significant social meanings that, for the dominant cultural traditions of the USA, either encourage or inhibit the development of aspects of adolescent social competence that leans in individualistic directions toward emphasizing autonomy (Bush & Peterson, 2013; Collins & Steinberg, 2006; Laursen & Collins, 2009; Peterson, 2005; Peterson & Bush, 2013a; Peterson & Hann, 1999).

Supportive parental behavior is probably the most prominent among these frequently studied dimensions of socializing behavior. In fact, perhaps the closest thing to a general law of parenting is that warm, supportive, nurturant, or accepting behavior by mothers and fathers is associated with the development of virtually all aspects of social competence by children and

adolescents (Bush & Peterson, 2013; Peterson, 2005; Peterson et al., 1999; Peterson & Bush, 2013a; Rohner, 2004, 2008; Rollins & Thomas, 1979). Parental *support* or nurturance consists of behaviors like touching, hugging, kissing, praising, approving, encouraging, and spending positive time with adolescents (Peterson, 2005; Peterson & Rollins, 1987; Rohner, 2004, 2008; Rollins & Thomas, 1979). Supportive behavior communicates that adolescents are valued, fosters close ties within the parent–youth relationship, and communicates parental confidence in the adolescent's abilities.

The use of parental support predicts several positive qualities that are consistent with adolescent social competence, including positive self-esteem, identity achievement, growing autonomy that coexists with sufficient conformity to parents, and long-term interpersonal adjustment during adulthood (Rohner, 2004, 2008). Adolescents who receive support or nurturance from parents often report lower amounts of anxiety, depression, behavior problems, and conflict with parents (Bush, Peterson, & Chung, 2013; Peterson & Hann, 1999; Peterson & Rollins, 1987; Rohner, 2004, 2008).

A particularly important quality of parental support is its ability to foster an adaptive balance in European American adolescents between seeking autonomy and remaining connected to parents, a pattern that captures a key dimension of social competence across cultures (Peterson & Bush, 2013a). Because parental supportiveness fosters both autonomy and connectedness, parental behavior of this kind can be viewed as rooted in both individualistic and collectivistic value systems. However, the use of supportiveness by parents may have different cultural meanings and consequences, depending upon the underlying cultural value system that guides parents who are members of a particular culture to use this behavior. Thus, the use of supportiveness by parents within a more collectivistic context may be used more frequently to foster parent–adolescent connections, whereas, within a more individualistic culture, nurturant parenting may provide stronger encouragement for adolescent autonomy.

Another important behavioral strategy that many parents in the USA use to foster adolescent social competence is *reasoning* or induction. Parents use induction or reasoning for appealing to the adolescent's concern for others, their desire to be mature, and their abilities to understand and voluntarily accept the parent's point of view (Baumrind, 1991; Bush & Peterson, 2013; Hoffman, 1994; Peterson, 2005; Peterson & Hann, 1999). The use of reasoning helps adolescents understand why rules are necessary, why their misbehavior is unacceptable, how their behavior affects others, and how their actions might become more acceptable (Peterson, 2005; Peterson & Hann, 1999).

The use of reasoning or explanation by parents has some of its roots in individualism by not imposing arbitrary authority on adolescents. The use of reason may be particularly important for appealing to abstract thinking abilities that are developing during adolescence. Exposure to parental reasoning provides adolescents with confidence to think for themselves and develop an autonomous system of self-affirmed values and expectations (Hoffman, 1994; Peterson, 2005; Peterson & Rollins, 1987; Rollins & Thomas, 1979). Reasoning or explanation is a moderate form of control that legitimizes parental authority, communicates respect for an adolescent's viewpoint, reduces the chances for evoking hostile feelings from the young toward parents, and gradually grants autonomy through the encouragement of dialogs between parents and youth. An inductive approach communicates that parents have respect for adolescents, have confidence in their abilities to make good decisions, recognizes their capacities to voluntarily comply, and supports their growing autonomy about their own decisions (Peterson, 2005; Peterson & Hann, 1999).

Parental reasoning, in contrast, also has been found to foster such adolescent outcomes as internalized moral development and moderate internalized conformity to parents' expectations (Bush & Peterson, 2013; Peterson & Bush, 2013a). Similar to parental supportiveness, therefore parental reasoning encourages European American adolescents to develop a key dimension

of social competence, involving continued connections with parents, while simultaneously fostering the emergence of youthful autonomy (Collins & Steinberg, 2006; Peterson, 2005; Peterson & Bush, 2013b; Peterson & Rollins, 1987). Because parental reasoning may be used to foster both adolescent autonomy and connections (or conformity) in reference to parents, the use of induction by parents also may be rooted in both individualism and collectivism but represent different socialization goals and intended consequences for adolescent outcomes. Hence, the use of reasoning by parents may have different cultural meanings and consequences, depending upon the underlying cultural value system that guides parents from a particular culture to use inductive behavior. Specifically, within predominantly individualistic cultures, for example, the use of reasoning by parents may encourage parent–adolescent discussions and negotiations to occur that may, in turn, foster adolescent autonomy. In contrast, the use of reasoning within collectivist-leaning cultures may be used more often as parental teaching through which parents seek to influence adolescents by instructing them in a rational manner to conform and internalize their values and expectations as part of character development (Chao, 2001; Peterson, Cobas, Bush, Supple, & Wilson, 2005).

A third socializing behavior, *monitoring or supervision*, refers to moderate controlling efforts used by parents to encourage social competence through becoming aware of and managing their teenager's schedules, peer associations, activities, and physical whereabouts. US parents often monitor adolescents to supervise dating and discourage early sexual relationships, prevent antisocial behavior and deviant peer associations, check to see that homework is completed, watch for the symptoms of drug use, and oversee the popular media accessed by the young (e.g., movies, television, books, the Internet, and social media) (Crouter & Head, 2002; Patterson, 2002; Patterson & Capaldi, 1991; Racz & McMahon, 2011). Monitoring designates the extent to which parents are interested in the welfare of their adolescents and become knowledgeable about their involvements by gathering information about as

well as supervising their behavior, activities, and associations with others (e.g., peers and other adults). Especially in individualistic cultures, monitoring is most often an aspect of firm but moderate control that avoids the exercise of intrusiveness and depends on the degree to which the young are willing to share information with parents (Crouter & Head, 2002; Kerr & Stattin, 2000; Racz & McMahon, 2011; Smetana, 2008; Stattin & Kerr, 2000). Successful monitoring implies that parents must maintain a clear set of rules about the time that adolescents should be home, when they should return from peer activities, with whom they may associate, and places where the young are forbidden to go. The primary role of parental monitoring is to prevent the drift of teenagers toward problematic peer relationships, risk behavior, and deviant activities, while not being intrusively restrictive. Consistent with a cultural emphasis on individualism, moderate levels of monitoring allow for the gradual development of autonomy and social competence within the context of continuing parental influence based on consistent rule enforcement (Chao, 2001; Peterson & Hann, 1999). The use of higher levels of monitoring by parents that are more pervasive across many aspects of adolescents' lives may be more characteristic of parent–adolescent relationships within collectivistic cultures (Chao, 2001). Both of these underlying motivations for monitoring probably coexist roughly in proportion to how a particular social group balances individualistic and collectivistic values within their distinctive parental ethnotheory.

Clearly having its roots in individualism is *psychological autonomy granting*, or socializing behaviors where parents employ noncoercive behavior, democratic discipline, and encouragement for adolescents to express their individuality within families and beyond family boundaries (McElhaney, Allen, Stephenson, & Hare, 2009; Peterson, 2005). Fostering autonomy often encourages self-worth, feelings of self-efficacy, self-confidence, and emotional functioning (Peterson & Bush, 2013a; Quin, Pomerantz, & Wang, 2009), all of which are consistent with social competence. During adolescence, the process of gaining autonomy retains the theme

of constantly expanding explorations through increasingly more complicated behaviors within expanding social networks. Adolescents use parents, friends, dating partners, and other adults as sources of security and springboards for increasingly more elaborate excursions into the social world (Peterson, 2009; Peterson & Bush, 2013b). For example, most teenagers do not simply reject positive relationships with parents as they gain greater freedom from parental connections. Instead, teenagers often expand the number and complexity of their peer relationships, while maintaining close ties with parents. Greater autonomy is not achieved, therefore, as a "zero sum game" in which gains in self-direction necessarily mean losses in connections with parents. Instead, most adolescents report that they value making more of their own life-style choices and desire to spend more time with peers, but without suffering dramatic declines in the love and respect they feel for parents (McElhaney et al., 2009; Peterson, 2009; Peterson & Bush, 2013b). The development of autonomy and connectedness are not in fundamental conflict for most adolescents, but are complementary and essential aspects of human relationships that develop together as components of social competence (Laursen & Collins, 2009; McElhaney et al., 2009; Peterson & Bush, 2013a). For the European American culture of the USA, however, the balance between autonomy and connectedness leans somewhat more toward the former rather than the latter.

The inverse of autonomy granting is *intrusive psychological control*, the prominent control dimension of overprotective parenting (Levy, 1943). Intrusive psychological control refers to efforts made by parents that discourage individualism and the European American definition of social competence by intruding upon the psychological independence and emotional development of adolescents. Intrusive parental control seems more likely to be especially problematic within individualistic cultures that emphasize the importance of autonomy rather than in collectivistic cultures where such behaviors may be used more frequently due to the stronger emphasis on maintaining parental authority and cohesive relationships. Parents exercise intrusive control

by invalidating adolescent's feelings, constraining verbal expression, withdrawing love, or attempting to induce guilt and emotional dependency (Holmbeck et al., 2002; Levy, 1943; Parker, 1983). Frequent use of intrusive psychological control by parents has been linked primarily to internalized forms of youthful outcomes such as depression, withdrawal, loneliness, eating disorders, negative perceptions of the self, lower self-efficacy, and less effective identity development primarily in western societies (Allen, McElhaney, Land, & Jodl, 2004; Barber, 2002a, 2002b; Bean, Bush, McKenry, & Wilson, 2003; Holmbeck et al., 2002). A logical consequence of intrusive psychological control is excessive adolescent dependence and inhibited autonomy, both of which are contrary to European American conceptions of social competence (Sonens et al., 2007). An important topic for future research is to examine whether the same problematic consequences for adolescent development are equally prevalent in more collectivistic societies such as those in Asia and Latin America.

*Parental punitiveness* refers to arbitrary verbal or harsh physical attempts to influence the behavior and internal qualities of teenagers. Coercive control attempts are commonly viewed as a socialization strategy contrary to an individualistic conception of social competence by attempting to inhibit autonomy and other adaptive outcomes. These actions involve the use of excessive force to impose the will of parents without the tempering influence of reason or more moderate forms of discipline (Peterson & Rollins, 1987; Straus, 1994). Punitiveness varies from arbitrary nagging, name-calling, and yelling in its verbal forms to corporal punishment (i.e., spanking) and/or violence (abuse) in its physical forms (Day, Peterson, & McCracken, 1998; Straus, 1994). Current evidence indicates that mainstream cultural norms in individualistic societies like the USA are much less supportive of using physical punitiveness with teenagers compared to younger children. As attitudes about parental use of physical punishment have changed, a number of countries with more individualistic social values, including Sweden,

Germany, and the UK, have either banned or legally restricted its use (Ben-Arich & Haj-Yahia, 2008). Although normative change about punitiveness also has occurred in the USA, an estimated 20–40 % of adolescents continue to receive physical punishment from parents with some regularity (Straus, 1994; Wissow, 2001). Physical or verbal punitiveness often leads to a variety of problematic outcomes, all of which are contrary to the development of the mainstream European American conception of social competence. Such problematic outcomes include hostile feelings, diminished internalization of parents' expectations, growing distance, resistance to authority by adolescents, and a problematic form of autonomy rooted in growing separation from parents (Buck, Vittrup, & Holden, 2006; Collins & Steinberg, 2006; Laursen & Collins, 2009; McElhaney et al., 2009; Peterson, 2009; Rollins & Thomas, 1979).

The use of harsh, punitive behavior by US parents often contributes to such problematic outcomes as lower self-esteem, depression, less advanced moral development, lower success in school, but higher rates of substance abuse, and delinquent activities (Eckenrode, Laird, & Doris, 1993; Eisenberg, 1989; Gavazzi, 2011; Straus, 1994). Problematic outcomes of punitiveness include excessive restrictions on autonomy and attempts to enforce excessive forms of conformity to parents' demands (Peterson & Bush, 2013a; Peterson & Hann, 1999). A prominent meta-analyses of 88 studies by Gershoff (2002), for example, indicated that physical punishment resulted in only one positive consequence (i.e., immediate compliance) and five unintended negative consequences by the young (i.e., more aggression, delinquent behavior, greater risk of child abuse, diminished moral internalization, and reduced mental health adjustment) (Gershoff & Bitensky, 2007; Peterson & Rollins, 1987). Although mild forms of punitiveness do not always lead to serious adolescent problems (Baumrind, Larzelere, & Cowan, 2002; Larzelere & Baumrind, 2010), these troubling results may fail to develop because parents use other practices (e.g., support or reasoning) that offset or dilute the worst effects of punitiveness.

A balanced assessment of using mild and occasional spanking, however, may be that most studies finding negative consequences do so only with correlational rather than experimental evidence and may give too much credence to effect sizes that are quite small. Another possibility, for example, may be that an adolescent's difficult behavior may elicit punitive responses from the parents, with spanking then being a reaction to youthful behavior (i.e., a child effect) rather than a cause of adolescent outcomes. A further weakness of the research on punitiveness is the failure to distinguish between mild and serious forms of punitiveness. This deficiency may exaggerate the adverse effects on dimensions of social competence by mild or moderate forms of punitiveness (Baumrind et al., 2002; Larzelere & Baumrind, 2010).

A compelling reason against the use of punitiveness, however, is the inability of some parents to control their anger, with the result being that mild punitiveness used initially by an angry parent may escalate rapidly or eventually into more serious coercive attempts, including physical abuse (Day et al., 1998). Research supporting this view indicates that the young often respond to parents' punitive behavior by "counterattacking" with their own punitive behavior, which, in turn, may contribute to escalating cycles of abuse and violence (Bush et al., 2013; Patterson, 2002; Patterson & Capaldi, 1991). Rather than risk the danger of such escalation, the most effective course of action by US parents is to use alternative forms of discipline and control that are less arbitrary and coercive (e.g., monitoring, reasoning, or consistent rule enforcement).

The most compelling reason to withhold final judgment (though not very convincing) about the use of occasional and mild forms of punitiveness is evidence suggesting that harsh discipline may not have the same degree of negative consequences (e.g., heightened aggression and reduced academic achievement) within ethnic-minority families as it does within European American families (Brooks-Gunn & Markman, 2005; Larzelere & Baumrind, 2010). Such findings suggest that the normative support for punitiveness may differ across cultures, convey

varied meanings, and, in turn, may have different consequences for adolescent social competence. It is possible that punitiveness may be viewed in a more negative way and have more adverse consequences for adolescents growing up in individualistic cultures than is true for youth in collectivistic societies. Adolescents from individualistic cultures may be more likely to view parental punitiveness as an unwarranted us of arbitrary control, whereas youthful members of collectivistic cultures may be more willing to accept it within the context of the greater emphasis on maintaining parental authority. Further work is needed on this potential cultural difference in the meaning and consequences of punitive behavior before firm conclusions should be drawn.

## Parent–Adolescent Conflict

The first form of conflict in families, *parent–adolescent conflict*, has been subject to a long history of scholarship in the social sciences (Arnett, 1999; Laursen & Collins, 2009). One way social scientists have studied parent–adolescent conflict is by comparing the attitudes, values, and personal tastes of the younger generation with those of their elders, or the search for the prevalence of a "generation gap" between parents and adolescents (Knafo & Schwartz, 2003).

This search for generational disparities concerns how parents and adolescents feel about each other as well as their similarities or differences relating to basic value domains such as political attitudes, religious beliefs, ethical principles, the importance of hard work, career ambitions, and educational goals. Instead of support for an extensive generation gap, however, the weight of the evidence indicates that most parents and adolescents share basic viewpoints, love and respect each other. Most parents and adolescents have not been found to have major differences in fundamental values, beliefs, and attitudes. Instead, parents and adolescents differ most frequently in the area of personal lifestyle choices and family chores, including styles of dress, tastes in music, curfews, selection of leisure-time activities, and cleaning one's room (Knafo & Schwartz, 2003; Smetana, Daddis, & Chuang, 2003; Smetana & Villalobos, 2009; Steinberg, 2001; Wang et al., 2007).

From the perspective of parents, however, these seemingly "surface" differences of opinion may be symptomatic of parental concerns for the safety and well-being of adolescents within social contexts where growing autonomy may expose the young to involvement in risk behavior (e.g., autonomy in leisure activities and peer choices may provide opportunities for substance use) (Laursen & Collins, 2009). Although not typically severe, parent–adolescent conflict tends to occur somewhat more frequently than conflicts occur between couples experiencing some marital distress (Buchanan, Maccoby, & Dornbusch, 1996). Adolescents and parents have their most frequent conflicts during the early years of adolescence, which subsequently stays high for several years and then declines in later adolescence (Arnett, 1999; Laursen & Collins, 2009; Laursen, Coy, & Collins, 1998). The higher levels of conflict during early adolescence may result as teenagers try to play a more significant role in family life or increase their demands for autonomy, but also when parents may not be ready to accept such changes. Some have proposed, for example, that puberty and associated hormonal changes play key roles in stimulating parent–youth conflict during early adolescence, a social mechanism for adolescents to distance themselves from parents, but especially from their mothers. Several studies have indicated that conflicts (or negative exchanges) intensify when hormonal activity is high as adolescents reach the midpoint of puberty and become more sexually mature (Arnett, 1999; Laursen & Collins, 2009).

Other observers disagree that increased parent–adolescent conflict is rooted primarily in the physiological changes of adolescence. Instead, moderate conflict is viewed largely as socially created processes that may foster adaptive forms of change within parent–adolescent relationships. Conflict exists in all human interpersonal systems and can have a variety of consequences ranging from being a negative, to a neutral or positive force, depending on how it is managed.

Instead of inevitably being a destructive force, conflict often has the potential to be a signal that change is needed and is an instrumentality of positive change within a social system. Thus it is not the conflict per se that causes negative outcomes, but rather how well it is managed (or not) through the kinds of sequential responses of adolescents and parents to the presence of conflict that determines whether positive or negative consequences will emerge. According to this view, conflict encourages parents and adolescents to revise their expectations and renegotiate autonomy or the degree of relationship flexibility, without fundamentally changing their feelings of being connected to each other (Collins & Steinberg, 2006; Gavazzi, 2011). This flexibility within the context of continued bonds allows adolescents to become more autonomous and competent in relationships beyond family boundaries. Moderate conflict plays an important, even necessary role, in changing family relationships so that autonomous development can occur.

The possibility that conflict may be a normal and necessary part of family relationships does not mean that it is wise to neglect the potential for parent–adolescent conflict to escalate and become problematic (Arnett, 1999; Bush & Peterson, 2013; Gavazzi, 2011). Instead, conflict requires intuitive or intentional forms of management to keep both the frequency and severity of conflict at moderate levels. Conflicts can become major sources of dissatisfaction for parents and adolescents, especially if few efforts exist to resolve or manage these disagreements.

Conflicts that increase rapidly in terms of frequency and severity, or escalating coercive cycles, often become a central feature of troubled parent–youth relationships that lead, in turn, to greater involvement in deviant and antisocial behavior by the young (Patterson, 2002; Patterson & Capaldi, 1991). This potential for escalating coercive cycles is consistent with the view that authoritarian parenting can lead to intensified parent–youth conflict largely in reaction to the frequent use of arbitrary punitiveness by parents (Granic & Patterson, 2006; Patterson, 2002; Patterson & Capaldi, 1991). Adolescents who are subject to such punitive forms of discipline attempts are more likely to feel hostile toward parents and become less willing to comply because this type of control attempt is often perceived as arbitrary and unfair. Similarly, authoritarian parents are more likely to respond with more forceful contingencies in the face of adolescent resistance (Baumrind, Larzelere, & Owens, 2010; Bush & Peterson, 2013). In contrast, authoritative parenting involving the use of more rational control attempts and supportiveness is likely to manage conflict because parents are perceived as being reasonable, fair, and trustworthy. Rationale control attempts manage conflict by reducing the level of hostility that adolescents direct at parents and functions to modulate adolescents' responses to their parents' influence attempts Baumrind et al. (2010). Supportiveness by parents, in turn, functions to manage conflict by encouraging relationship closeness that diminishes the frequency of severe conflictual responses between the parents and their young (Bush et al., 2013).

Other difficulties may result when conflicts are routinely resolved either through the submission or by withdrawal of the adolescent or parent. Conflicts commonly resolved through these less effective means often ignore the needs, interests, and welfare of either person involved. More constructive strategies involve reaching reasonable compromises or finding ways for parents and adolescents to agree to disagree (Granic & Patterson, 2006; Patterson, 2002; Patterson & Capaldi, 1991). Although parents and adolescents may experience distress, some conflict may be useful in contributing to a new equilibrium in the family system that allows the young to have greater autonomy (Collins & Steinberg, 2006; Laursen & Collins, 2009).

A prominent explanation for parent–youth conflict is that adolescents and their elders may have differing perceptions or assign distinct meanings to issues that arise in their relationship (Larson & Richards, 1994; Smetana & Villalobos, 2009). For parents, a meaningful objective is to function as authority figures and prepare youth for social competence and success in one's culture. In contrast, for adolescents, life-style issues are important for defining one's identity, becoming more

autonomous, connecting with peers, and affirming personal choices. Consequently, parents may expect adolescents to comply with their wishes because a particular issue (e.g., about styles of dress, curfews, or cleaning one's room) is perceived as requiring compliance based on custom, convention, or continuity in parental authority. Another possibility is that parents may view a particular adolescent life-style issue as a surface level substitute for deeper level issues that may place adolescents at risk (e.g., the absence of a curfew involves unsupervised free time that creates potential for early sexual activity and other risk behavior). In contrast, from the perspective of adolescents, the same issues are often viewed as one of personal choice or as a means to assert their autonomy, perhaps the most highly valued developmental goal by adolescents in western societies (Smetana & Asquith, 1994; Smetana & Villalobos, 2009). Thus, adolescents and parents may be in conflict based on the different meanings that each assign to life-style issues. These distinctive ways of seeing things are framed in terms of different developmental priorities that adolescents and parents must deal with during their respective phases of the life-course.

Much of the recent research contradicts the stereotype that adolescents simply rebel from parents or engage in parent–youth conflict simply for the sake of being rebellious (Darling, Cumsille, & Martinez, 2008; Peterson & Bush, 2013a). In contrast, most adolescents are willing to accept their parents' rules as legitimate when they agree that a moral (e.g., stealing) or safety (e.g., texting and driving) issue is at stake. They are less willing to comply, however, with parents' rules when they view the issue as one of personal choice (e.g., what music to listen to). Consequently, adolescents draw distinctions between parental rules they view as a parental right to expect and those that they believe are out of bounds for parents and within their personal domain (Smetana & Daddis, 2002; Smetana & Villalobos, 2009). Such results identify the importance of parents' perceived legitimate authority (i.e., perceived by adolescents) as a relationship quality that may diminish or manage the frequency and severity of conflict between parents and adolescents

(Cumsille, Darling, Flaherty, & Martinez, 2009; Darling et al., 2008).

An important point about parent–adolescent conflict is the extent to which this process may vary across cultures and ethnic groups. Recent scholarship provides a growing body of evidence supporting the view that parent–adolescent conflict is likely to be less frequent in cultures and ethnic groups (especially in its overt form) that emphasize collectivism in the form of extensive economic interdependence, social interdependence, collectivism, parental authority, and the priority of family bonds over the need for personal autonomy (Chung, Flook, & Fuligni, 2009; Collins & Steinberg, 2006; Peterson & Bush, 2013a). Many non-western and traditional cultures as well as some ethnic groups (e.g., Asian and Asian American, Latino and Latino American) have cultural and economic pressures that diminish conflicts based on needs for autonomy and individualistic preferences in social relationships (Arnett, 1999; Chung et al., 2009; Phinney & Ong, 2002). Youth from these "collectivistic" cultures seem less inclined to seek autonomy (especially early in adolescence) and challenge authority figures due to social, cultural, and economic forces that reinforce group solidarity. When compared to youth from individualistic contexts, youth in collectivistic cultures may seek autonomy somewhat later in development or be less inclined to express conflict with parents overtly, while preferring conflict that is covert in the form of differences in attitudes, beliefs, values, and expectations. However, such cultural differences in parent–adolescent conflict may be diminishing as the forces of globalization spread either the norms of western individualism or a form of social-emotional "interdependence" in which both autonomy and continued connections with others are complementary aspects of youthful social competence (Peterson & Bush, 2013a).

## Interparental or Marital Conflict

A second form of family conflict, marital or *interparental conflict* (IPC), has received growing attention and appears to have substantial

consequences for adolescent internalizing outcomes, externalizing consequences, and fostering alienation from parents (Gerard, Buehler, Franck, & Anderson, 2005; Shelton & Gordan, 2008). Although conflict between parents appears to have important implications for adolescent development, some evidence also suggests that adolescents may be more resilient and less vulnerable to the adverse consequences of IPC for social competence than are younger children (Harold, Shelton, Goeke-Morey, & Cummings, 2004).

IPC appears to contribute in complex ways to foster the development of problematic behavior or inhibit the development of social competence by the young. Because conflict is commonly present in families, and may have some benefits in moderate levels (e.g., for maintaining a sense of one's individuality), we cannot assume that all conflict between parents is problematic (Adams & Laursen, 2007). Many subtleties exist and it is important to recognize conceptual distinctions, such as the difference between the frequency and severity of conflict. Compared to the frequency of IPC, for example, the severity of strife (or the degree of hostility conveyed) between parents seems to operate independently of and to be more strongly predictive of adolescent problem behaviors than simply the frequency of conflict. It is also true, however, that both may be important, especially when conflict is frequent and severe (Gerard et al., 2005).

Another complication is that the influence of IPC has both direct and indirect effects on youthful problem behaviors and the quality of parent–adolescent relations. The direct effects are the most obvious in the sense that simply exposing the young to frequent, severe parental fights places them in disturbing, threatening, and anxiety-provoking psychological circumstances. Consequently, in families where the frequency and severity of such parental disagreements are high, there is increased likelihood that internalizing and externalizing responses will result for the young (e.g., learned aggressiveness, insecurity, or psychological withdrawal), simply by observing and assigning negative meanings to their parents' interactions (Shelton & Gordan, 2008).

A further complexity is that indirect effects of marital conflict or IPC on adolescent development occur through a phenomenon referred to *as spillover*. The explanation for spillover involves the idea that IPC is psychologically disturbing to parents, which, in turn, "spills over" into the parent–adolescent relationship and negatively affects the quality of socialization behaviors that parents use with their young. That is, parents who experience psychological distress and disorganized thinking in response to marital conflict often experience diminished abilities to maintain high quality involvement with adolescents. Declines in the quality of parenting often take the form of reduced supportiveness, increased use of punitiveness, and psychological intrusiveness with the young (Buehler & Gerard, 2002; Gerard, Krishnakumar, & Buehler, 2008). Parents whose socializing behaviors worsen in this manner often contribute to externalizing behavior, internalizing outcomes, and repeating cycles of escalating conflict within the parent–adolescent relationship (Buehler & Gerard, 2002; Bush et al., 2013; Granic & Patterson, 2006; Rhoads, 2008; Stone, Buehler, & Barber, 2002). Research also has indicated that a significant relationship exists between harsh or punitive discipline as a predictor of IPC. As a result, parents who engage in severe conflict with each other may, in turn, use verbal or physical punitiveness more frequently, which may fan the flames of parent–adolescent conflict and contribute to increased internalizing and externalizing outcomes by the young (Bush et al., 2013). In contrast, high quality parent–adolescent relationships in the form of authoritative parenting can buffer (or help to manage) the negative effects of IPC on adolescents, particularly when secure attachments, supportiveness, and responsive parenting are involved (Buehler & Gerard, 2002; DeBoard-Lucas, Fosco, Raynor, & Grych, 2010).

Deleterious effects on adolescents also may occur when triangulation occurs, or when adolescents become "caught in the middle" of parental conflicts, especially in regard to the increased susceptibility of adolescents to internalizing problems (Foscoe & Grych, 2010).

Recent parent–child research has provided evidence linking IPC and undesirable short- and long-term outcomes for youth (DeBoard-Lucas et al., 2010; Grych, 2005). The young who are subjected to IPC are at increased risk for developing internalizing problems (e.g., depression and anxiety), externalizing problems (e.g., disruptive behaviors and aggression), and social adjustment difficulties (Gerard et al., 2005; Grych, 2005).

Other complications that determine the impact of IPC are qualities and cognitions of the young that either enhance or diminish the degree of spillover into the parent–adolescent relationship. Specifically, the individual coping resources of youth, their negative cognitions (e.g., self-blame) and negative affect (e.g., sadness, fear, anger) in response to IPC appear to play important roles in determining the extent to which internalizing outcomes, externalizing consequences, and alienation from parents will result (Rhoads, 2008; Shelton & Gordan, 2008).

An important overall idea, therefore, is that some conflict occurs in all families and, when maintained at moderate levels, may even have positive developmental consequences as a force for necessary transitions. Probably the best course is to foster relationship mechanisms that manage strife within both the parent–adolescent and interparental relationships in ways that prevent conflict from escalating to unusually frequent and especially severe levels (Collins & Steinberg, 2006).

## Family Structural Variation and Family Processes

Despite extensive focus on the socialization processes (i.e., internal family processes, relationship, and social–psychological dimensions) within families, continuing interests exist regarding how variations in family structure may contribute to family process changes which, in turn, may contribute in positive or negative consequences for the development of adolescent social competence. Structural variations refer to differences across families in the composition and structural organization. For example, the number of family members, types of relationships (e.g., stepfamily relationships, divorce), and whether the family structure is nuclear versus some alternative (e.g., single parent as a result of divorce and remarriage) may have consequences for family processes and adolescent development. Structural variation in families implies that important role adjustments must occur within families to accommodate such things as divorce, remarriage, and the presence of siblings. Role adjustments that occur in response to structural variation often have consequences for the processes and social–psychological aspects of family life.

Growing evidence indicates that a focus on both structural and family process variables is necessary to develop a thorough understanding of families in the form of direct and indirect effects (e.g., Bush & Peterson, 2013). Changes in family processes, due to changes or variations in structure, can have considerable impact on parents, which, in turn, can have considerable influence on the well-being and development of adolescents. In fact, particular structural effects that do occur sometimes have indirect influences on adolescent development commonly conveyed through specific family process and social–psychological variables (e.g., parental behavior, patterns of communication, the frequency and severity of conflict, and conflict management resources) that are brought directly to bear on adolescents (Bush & Peterson, 2013; Teachman, Tedrow, & Kim, 2013).

Although debate continues, the majority of evidence suggests that only modest or limited effects for youthful social and personality outcomes can be directly traced to structural variations per se. Another way of viewing this issue is that distinguishing between "structure" and "process" in families may be simply a somewhat artificial distinction. Many relationship and social–psychological issues may be (at least partially) either present, absent, or differ substantially, depending on the particular kind of family structural variations that exist (e.g., the presence and number of siblings, the presence or absence of fathers in families).

## Divorce and Marital Separation

Most adolescents experience important family structural and process changes when parental divorce or marital separation (PDMS) occurs (For recent reviews, see Braver & Lamb, 2013; Hartman, Magalhães, & Mandich, 2011). It is estimated that approximately 50 % of children and adolescents in the USA will experience PDMS at some point in their development (Braver & Lamb, 2013; Lansford, 2009). Results from meta-analyses and recent reviews (Braver & Lamb, 2013; Hartman et al., 2011) indicate that adolescents who experienced PDMS scored significantly higher on measures of problematic outcomes (e.g., internalizing and externalizing symptoms) and significantly lower on measures of social competence (e.g., academic achievement, self-concept, positive social skills/relations) compared to children with continuously married parents. However, such findings must be interpreted and applied cautiously, as the relationships between PDMS and child outcomes are quite complex, and direct causal relationships have yet to be established (Braver & Lamb, 2013; Hartman et al., 2011).

Key points regarding the impact of PDMS on adolescent outcomes include: (1) a majority of adolescents fair well after PDMS; (2) many factors moderate or mediate the relationship between PDMS and post PDMS outcomes including age at divorce, parental conflict (before, during, and after PDMS), and the quality, quantity, and type of parent–adolescent relationships (Braver & Lamb, 2013; Hartman et al., 2011). In a recent review of research examining the impact of PDMS on adolescents in the first decade of the twenty-first century, Hartman et al. (2011) identified several themes researchers have focused on thus far. The identified themes included predictions for academic performance, deviant behavior, romantic–sexual relationships, psychosocial well-being, and coping. The most prevalent theme, however, were changes in parent–adolescent relationships that tend to coincide with PDMS.

Some researchers present evidence that PDMS has serious long-term effects on children and adolescents (e.g., Popenoe, 2003; Wallerstein, Lewis, & Blakeslee, 2000) but others assert that few long-term effects are substantiated (e.g., Harris, 1998). On a positive note, adolescents whose families experience PDMS tend to fare better on outcomes encompassed by social competence than do younger children (Hetherington & Kelly, 2002). Much of the scholarship falls within a broad middle-ground position in which some negative effects tend to become prevalent, most of which consist of small, temporary, and non-universal consequences (Lansford, 2009).

Researchers also have identified many factors (e.g., coping, positive parent–adolescent communication/relationships) and programs that can help to buffer adolescents from the negative impact of PDMS. More specifically, adolescent's adjustment to PDMS can be enhanced through factors that decrease IPC, the provision of adequate maternal and paternal involvement (e.g., parental monitoring along with emotional and economic support), consistent co-parenting, social support (e.g., from extended family members), and other sources of formal and informal support (Chen & George, 2005; Hartman et al., 2011). Of particular importance, however, are findings that the continuing quality of the parent–adolescent relationship (i.e., parental support, moderate control, monitoring, low punitiveness) is an important mediator of adolescent's adjustment to parental divorce (Braver & Lamb, 2013; Hartman et al., 2011; Hetherington & Kelly, 2002). That is, adolescents who continue to experience positive relationships with their parents and positive parenting environments are more likely to demonstrate constructive short- and long-term adjustment to PDMS (Braver & Lamb, 2013; Hetherington & Kelly, 2002).

Drawing any conclusions about the consequences of PDMS on adolescents requires a complex process of analyzing the relevance of various mediators (e.g., SES, parental quality, IPC, the quality of parent–adolescent relationships), moderators (e.g., age of child, adjustment prior to PDMS), and methodological factors (e.g., indicators of adjustment, analyses, and type of study) that can impact the identified links between PDMS and adolescent outcomes.

Although PDMS can have negative consequences for adolescents, compared to those in families with intact marriages, the majority of adolescents from PDMS families do well on most indicators of adolescent problems and social competence (Amato, Kane, & James, 2011; Braver & Lamb, 2013; Lansford, 2009). For example, Hetherington and Kelly (2002) report that 10 % of individuals whose parents stayed married experienced serious long-term problems, compared to 25 % of those in families whose parents divorced.

## Remarriage

Remarriage can provide increased economic resources for single parent families as well as benefits associated with having more caring adults involved with children and adolescents' lives. Along with potential benefits, however, are challenges related to integrating a new person into the immediate and extended family system (Van Eden-Moorfield & Pasley, 2013). Although evidence suggests that adolescents typically adjust to divorce or parental marital separation (PDMS) better than younger children, the opposite seems to be the case when it comes to remarriage or stepfamilies. Adolescent stepchildren's difficulty in adjusting to stepparents can be related to the increased role that many adolescents take in single parent families (i.e., resulting from divorce or other means) which can involve serving as a confidant to their biological parent(s), being granted authority/responsibilities over younger siblings, and having more autonomy and responsibilities. For example, a teenage daughter is likely to resist authority from a newly resident stepfather based on the close relationship that often develops with her mother during the period of transition to being a single parent. Teenage sons and daughters also are often inclined to resist authority from a residential stepparent based on loyalty to their biological, noncustodial parent. This is particularly true when the noncustodial, biological parent is of the same gender as the adolescent (e.g., Ganong, Coleman, & Jamison, 2011; Van Eden-Moorfield & Pasley,

2013). However, when there is role clarity and similarity in the expectations between custodial parents and the stepparents that lead to effective co-parenting relationships, both stepparent–adolescent relationships and youthful outcomes are more positive (Van Eden-Moorfield & Pasley, 2013).

Positive outcomes for parents and children are more likely to result when biological parents and stepparents agree on the stepparent role, with stepparents providing support to the biological parent(s) rather than functioning as a primary disciplinarian (Ganong et al., 2011; Van Eden-Moorfield & Pasley, 2013). Although step family relationships vary widely, in general, when stepparents establish close bonds with stepchildren prior to assuming roles of authority, and practice warm and authoritative parenting, better relationships and outcomes are more likely (Ganong et al., 2011; Van Eden-Moorfield & Pasley, 2013). Stepparenting tends to be more difficult than parenting a biological adolescent due to the complexity of stepparent–adolescent relationships, which may involve varied expectations, less defined social norms, and more ambiguous boundaries (Ganong et al., 2011; Van Eden-Moorfield & Pasley, 2013). Despite significant challenges, however, many stepfamilies form clear boundaries, establish clear role expectation, and are able to foster socially competent outcomes among adolescents. Moreover, when all parents are communicating effectively and co-parenting together, stepparents can serve as additional supports in a complex, accumulative model. This is illustrated by the fact that adolescents have fewer internalizing and externalizing behaviors when they are close to both their stepfathers and nonresidential fathers (King, 2006).

## Siblings

Another important structural variation of families that influences adolescent development is the presence/number of siblings as well as the quality of sibling relationships (see McHale, Updegraff, & Whiteman, 2013 for recent review). A majority of children in the USA are raised with

at least one sibling, and sibling relationships typically serve as the models for peer relations and a "practice" ground for developing social skills and peer relationships (McHale et al., 2013).

Sibling relationships can be characterized as consisting of more egalitarianism, higher intensity, and greater emotionality with age as the young progress from late middle childhood into early adolescence. During adolescence, in particular, sibling relationships can be emotionally charged and characterized by conflict and competitiveness as well as being important sources of support (McHale et al., 2013).

Adolescents tend to report more negativity and less intimacy with siblings compared to friends. The relationships between siblings are typically characterized as conflictual during early adolescence, with conflict tending to subside during the middle and later years of this stage (McHale et al., 2013). Older siblings often function as teachers, confidants, advisors, and role models for their younger brothers and sisters, with both negative and positive outcomes being possible as an outgrowth of sibling relationships. Sibling relationships impact the development of socially competent outcomes ranging from school achievement, empathy development, effective conflict management, and autonomy development (Lam, Solmeyer, & McHale, 2012; Richmond, Stocker, & Rienks, 2005). For example, Richmond et al. (2005) found that, as sibling relationships increase in quality (e.g., more warmth and less conflict) over time, the extent of adolescents' depressive symptoms decreased. Studies also have found that sibling conflicts in middle childhood are predictive of problem behavior in adolescence and early adulthood. Hence, sibling relationships can serve as contexts in which internalizing and externalizing problematic outcomes are fostered or hindered (Conger, Conger, & Scaramella, 1997; Richmond et al., 2005).

Another important influence on adolescent development and sibling relationships is the extent to which differential parental treatment occurs in families (Richmond et al., 2005). Parents often recognize behavioral differences among their adolescents (e.g., temperament differences) and adjust their parenting accordingly. Perhaps consistent with gene–environment conceptions, adolescent's individual personal characteristics often elicit differential responses from parents, with the result being that parents may treat their adolescents differently during socializing experiences (McHale et al., 2013). Children and adolescents are typically well aware of the differences in parental behavior directed at them compared to their siblings. The developmental consequences of such differential treatment vary to the extent that teens perceive this conduct as fair or unfair. Researchers have consistently reported that perceptions of receiving less favorable parental treatment (e.g., greater restrictiveness) than one's sibling is a positive predictor of externalizing and internalizing problems (McHale et al., 2013; Richmond et al., 2005). Recent studies have concluded that parental differential treatment is more strongly related to adolescent's externalizing problems than to internalizing attributes (e.g., Boyle et al., 2004; Kowal, Krull, & Kramer, 2002; Richmond et al., 2005). Thus, in addition to the quality of sibling relationships, the perception of fair treatment by parents is a salient predictor of the behavioral problems of adolescents. It is important to keep in mind, of course, that complex relationships may exist between sibling relationship quality, differential parental treatment, and adolescent outcomes (Richmond et al., 2005).

In summary, the influence of family structural variations on parent–adolescent relationships and adolescent development occurs primarily through the impact of these differing structural organizations on family processes and in association with such factors as parenting behaviors, goals, and dimensions of parent–adolescent relationships. That is, structural variations within families (e.g., divorce, remarriage, siblings) have significant consequences for parent–adolescent relationships and adolescent development. Diverse family structures have such consequences by influencing interactions, the quality of relationships, and psychological experiences within families, that, in turn, have influence on adolescent social competence and problem behavior.

## Recommendations

A primary conclusion of this review is that families remain strong and perhaps predominant influences on adolescent development. An extensive array of family process, relationship, and social–psychological variables (parental styles, parental behaviors, parent–adolescent conflict, and IPC) continue to have both direct and indirect influences on the development of adolescent social competence and problem behaviors. Moreover, some aspects of family process are modified in patterned ways by structural variations in families such as divorce, remarriage, and sibling memberships. Hence, adolescents can experience developmental consequences for social competence as structural variations bring about changes in family process, relationship, and social–psychological experiences that occur inside family boundaries. Despite the growth of influence during adolescence by social agents beyond families, families of diverse structure are sources of complex, complementary, and contradictory influences on adolescents.

A key challenge for future research is to demonstrate how family influences are distinctive from, contradictory to, or complementary with the influence of other social agents such as schools, peer groups, neighborhoods, churches, and government/political institutions. More research in this area is needed to examine the efficacy of human ecological models that convey more realistic conceptions of the complex social world that adolescents must face each day beyond family boundaries (Bronfenbrenner;, 2005; Tudge et al., 2009).

Although some progress is being made in developing socialization models that are more complex than the social mold perspective (Kuczynsk, & De Mol, in press), greater emphasis is needed on research that tests these more elaborate conceptions about how adolescent development is influenced. Part of this complexity involves examining how multiple contexts of socialization operate either in conjunction or at odds with each other as influences on adolescent social competence. More research is needed on bidirectional and multidirectional influences that

adolescents, their parents, and their siblings experience in families (Kuczynski & De Mol, in press; Peterson & Bush, 2013a; Peterson & Hann, 1999).

An emphasis on more complex socialization models also will require greater efforts to disentangle genetic from family environmental influences. Greater emphasis on twin studies and other behavioral genetic designs is needed to more precisely identify aspects of adolescent development that are truly a product of nurture rather than nature (McHale et al., 2013). More complex research strategies also should include the more frequent use of cross-lagged designs that first can address how changes in parental and sibling attributes within families predict (or influence) changes in youthful social competence and problem behavior over time. Subsequently, these designs also provide insight into how such changes in adolescent social competence and problem behavior predict changes in subsequent patterns of parental and sibling attributes.

Although a great deal has been learned by studying parental styles and behaviors as predictors of adolescent development, it may be time to expand beyond being so disproportionately preoccupied with these aspects of the parent–adolescent relationship (Peterson & Bush, 2013a; Steinberg, 2001). Preoccupation with parental styles and behaviors in parent–adolescent research may lead to underestimating how the sophisticated cognitive abilities of youth provide them with the capacity to be either responsive or nonresponsive to parents based on their interpretations or meaning of the long-term relationships they have with their elders.

Both parental styles and behaviors seem best suited for examining parent–child relations with younger children and may have somewhat less utility with adolescents. Such is the case because, compared to younger children, adolescents have greater abstract thinking capacities, greater experience with parents, more extensive memories of their relationships with parents, and enhanced social perceptions. These abilities allow adolescents, in turn, to construct increasingly complex images or assessments of their parent's competence, wisdom, and authority. Hence, more complicated interpretations of the meaning of

parent–adolescent relationships may be structured in ways that are equally as influential for youth as reports of child-rearing behaviors of the moment. For example, adolescents may be influenced more extensively by whether they view their parents as being competent, as having wisdom, and as being recognized as authority figures (Peterson & Bush, 2013a). Compared to momentary displays of child-rearing behavior, these social constructions of their parents are more abstract and summarized products of long-term relationships. Hence, adolescents increasingly develop abilities to "size up" their parents' worthiness or unworthiness as social agents (i.e., their degree of parental competence) and choose in complex ways the extent to which they will be influenced by them.

A general implication of the current research on families and adolescents indicates that family-based prevention/intervention models should be focused primarily on the social, psychological, and process dynamics of families rather than the structural dimensions. Family-based prevention/intervention approaches should be applied as part of a larger strategy involving components implemented across social contexts such as the family, school, peer group, and community. Such a broad-based strategy recognizes that no single approach can promote social competence when social contexts contradict each other from the perspective of dealing with multiple influences (Bronfenbrenner, 2005; Tudge et al., 2009). Instead, greater success will be attained through a broadly conceived public health-style effort that provides a coordinated package of approaches designed to address both general issues across contexts but also having sufficient flexibility for particular community circumstances.

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# Community Influence on Adolescent Development

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Whether or not you agree that it "takes a village" to raise a child, for good or ill the "village" certainly ends up playing an important role. Particularly among adolescents, who are beginning to disagree with and differentiate from their parents, the larger community outside of family provides models of ideas and behaviors that may ultimately be incorporated into the teen's repertoire. While parental influence remains an important aspect of adolescent development, the influence being exerted by the teen's community is also important to gain a broader perspective of the mechanisms underlying this development.

"Community" can be an elusive concept, often narrowly defined in terms of neighborhood boundaries or as a group that shares a religion, ethnicity, or lifestyle. Sometimes "community" is used to encompass those in an entire city. A person might be a member of many different "communities" under these definitions. Bronfenbrenner's (1979) Ecological Model provides a useful way

to conceptualize the varying levels of community that interact with adolescents. This model can be imagined as concentric circles radiating from the individual with each circle representing a sphere of influence that becomes more removed from the individual the farther it is found from the center. At the most proximal level, the microsystem, adolescents interact directly with their communities. Family, peers, and the classroom would all fall into the context of the microsystem. The next layer, the mesosystem, reflects interactions between microsystems, such as the relationship between an adolescent's parents and her school. The next level of community, the exosystem, is more distal to the teen but impacts her nonetheless. Social structures in the exosystem may include the parents' social networks, school administrators and their policies, and aspects of the neighborhood, city, or region where the teen lives. Finally, the macrosystem involves the overarching culture in which the adolescent lives. Macrosystems involve commonly held beliefs about what is acceptable or how things are done and may be more concretely reflected in laws, policies, or the media.

To address every social setting or institution that could fall under the heading of "community" is beyond the scope of any book, much less this chapter. Instead, we focus on three aspects of community whose impact on adolescent development has been thoroughly researched: peers, neighborhoods, and the media. For each of these

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components, we address their potential as promoters of both risk and protection as well as how they may serve as the contexts of adolescent interventions.

## Peers

As children make the transition to adolescence, peers play an increasingly important role in their social and emotional health and development. Research on peer relationships during adolescence has often focused on the potential negative outcomes of peer association (and its corollary *peer pressure*), and peers have been linked to such problem behaviors as drinking and drug use (Fleming, Catalano, Haggerty, & Abbott, 2010; Pires & Jenkins, 2007) and violence and delinquency (Fleming et al., 2010; Patterson, Dishion, & Yoerger, 2000). However, peer relationships may also be instrumental in the development of such positive constructs as optimism (Orejudo, Puyuelo, Fernandez-Turrado, & Ramos, 2012), self-esteem, and academic achievement (Liem & Martin, 2011). In adolescence, "peers" not only refers to friends but increasingly to romantic partners, cliques, sports teams, bullies, classmates, and acquaintances. Youth may be differentially affected by peers depending on the context of the peer relationship as well as individual characteristics of the adolescent herself. In this section, we examine peers as a source of both risk and protection for adolescents as well as a context for intervention.

## Peers and Risk

Unfortunately, the use of "adolescents" and "peers" in the same sentence often conjures images of teenagers sulking behind the school cafeteria sharing cigarettes, or of a group of adolescents pressuring previously "good" kids to try drugs, engage in delinquent behaviors, or join a gang. Additionally, popular media is filled with images of middle and high schools as breeding grounds for bullying and rejection. These images are probably more frightening than the reality

facing most adolescents, and peers certainly do not represent the *only* sources of risk to developing adolescents. However, a strong body of research has documented various ways in which certain peer behaviors, qualities of peer relationships, and the interaction between peer and individual factors are associated with negative outcomes for some adolescents.

### Peer Pressure and Modeling

Peer pressure may be the quintessential way in which negative peer influence is conceptualized. However, most studies do not address overt pressure to engage in unhealthy or delinquent behaviors, but rather operationalize peer-level risk as affiliation with other youth who are modeling those behaviors and may or may not *also* be explicitly encouraging them. Regardless of the form peer influence takes, adolescents are more susceptible to such influence than either younger children or adults (Berndt, 1979), and this susceptibility can put them at risk if the influence is negative.

Adolescents may come to associate with delinquent peers in a variety of ways. For example, schools often group children based on achievement levels. Groups or classes comprised of those who are the least academically successful may facilitate relationships among youth who are less likely to adhere to positive school norms and expectations (Dishion, Patterson, Stoolmiller, & Skinner, 1991). Poor parenting practices, such as lax parental monitoring, negative discipline, and low levels of support, also appear to set the stage for involvement with deviant peers later on in adolescence (Deutsch, Crockett, Wolff, & Russell, 2012; Dishion et al., 1991). Dishion et al. (1991) suggest that these negative parenting practices inadvertently reward deviant behaviors, which spill into the school context resulting in the adolescent's rejection by conventional peer groups and subsequent affiliation with delinquent peers. This model suggests that any association between peer behavior and delinquency is primarily an artifact of youth selecting into groups of similar adolescents. In this vein, adolescents often become friends with individuals who have

similar levels of drug use and delinquency (Urberg, Degirmencioglu, & Tolson, 1998). While it is likely that adolescents select into groups of friends who are similar to themselves, the research also suggests that the effect of peers on problem behaviors goes beyond simple self-selection (Patterson et al., 2000).

Substance use is one form of problem behavior commonly associated with peer networks (Fleming et al., 2010; Pires & Jenkins, 2007). For instance, Ali and Dwyer (2010) found that a 10 % increase in the proportion of classmates who drink increases the likelihood of an adolescent's own alcohol consumption by 4 %. Another study, which examined abstinence outcomes for adolescents who had been through an alcohol and drug treatment program, found that while family environment scores were not related to these outcomes, peer network was (Ramirez, Hinman, Sterling, Weisner, & Campbell, 2012). Specifically, participants with fewer than four alcohol or drug using friends were more likely to be abstinent 1 year after intake than those with four or more friends who used.

Involvement with deviant peers has been associated with violence and delinquency other than substance use (Fleming et al., 2010; Patterson et al., 2000). For example, Foshee et al. (2011) found that as the number of friends who used peer violence increased, so too did the likelihood of a teen engaging in both peer *and* dating violence. Association with generally delinquent peers also appears to increase the likelihood of involvement in teen dating violence (Foshee et al., 2011), and the behaviors of romantic partners seem to uniquely contribute to adolescents' aggressive or delinquent behaviors as well (Haynie, Giordano, Manning, & Longmore, 2005). Changes in the *amount* of exposure to peer deviancy may also be an important factor in predicting adolescent behavior problems. For example, Fleming et al. (2010) found that increases in exposure to negative peers in late adolescence predicted crime involvement at age 19.

Individual characteristics may place an adolescent more or less at risk of negative peer influence. Bender and Lōsel (1997), examining a sample of high-risk adolescents in residential care, noted that, for those with the most severe externalizing behavior problems, peer social support and clique membership predicted an increase in antisocial behaviors, whereas those with less severe externalizing problems benefitted from social embeddedness.

## Peer Rejection and Victimization

Rejection and victimization by peers also constitute risk factors for adolescents. Rejected youth are less likely to have opportunities for association with prosocial peers, and so are rarely exposed to modeling of positive social behaviors (Bagwell, Coie, Terry, & Lochman, 2000). These youth are more likely to form associations with delinquent peers and to suffer from negative adjustment outcomes including externalizing behaviors (Laird, Jordan, Dodge, Petit, & Bates, 2001).

Peer aggression can take many forms such as physical bullying, relational aggression, or intimate partner violence. Being a victim of any of these types of aggression can put adolescents at risk for a variety of emotional and behavior problems. For example, teens who experience dating violence are more likely to suffer from depressed mood, eating disorders, suicidal thoughts, and drug use and to experience negative academic outcomes such as poor grades or failure to graduate (Ackard, Eisenberg, & Neumark-Sztainer, 2007; Banyard & Cross, 2008; Ackard & Neumark-Sztainer, 2002). Teens victimized by dating violence may also be more likely to experience intimate partner violence as adults (Gomez, 2011; Smith, White, & Holland, 2003). Victimization by other (i.e., nonromantic) physically or relationally aggressive peers has similarly been found to relate to multiple problem outcomes (Crick & Grotpeter, 1996; Graham & Juvonen, 1998).

## Peers and Protection

Although peer association is often conceptualized in terms of risk, adolescents' peer relationships also have the potential to buffer risk and confer unique benefits to their health and well-being.

For example, in one study, everyday positive experiences with peers predicted optimism among junior-high boys (Orejudo et al., 2012). Peers may also encourage positive behaviors in a more direct way via peer pressure. McLeod et al. (2008) interviewed identical twin pairs in which one smoked and the other did not. Nonsmokers reported feeling strong pressure from their friends *not* to smoke and felt that the messages conveyed by smoking were not consistent with their peer group's image. Peer support and prosocial behavior have also been linked to consistent condom use among a sexually active African American group of adolescents (Elkington, Bauermeister, & Zimmerman, 2011).

With child and adolescent obesity on the rise, the role of peers in healthy eating and physical activity is becoming a more common focus of research (Salvy, de la Haye, Bowker, & Hermans, 2012). In their review of the literature, Salvy et al. (2012) noted that youth who report associating with a greater number of peers, compared with lonely or rejected youth, tend to engage in more frequent and varied types of physical activity. Peers are also in a position to model healthy eating behaviors, and overweight youth tend to consume less in the presence of average-weight peers (Salvy et al., 2012).

Finally, peer relationships may help buffer the exposure to other risk factors in the home or neighborhood. For example, having close friendships may moderate the relationship between child abuse and low self-esteem (Bolger, Patterson, & Kupersmidt, 1998). For adolescents in families marked by poor cohesion and adaptability, high-quality friendships were positively related to social competence and self-worth (Gauze, Bukowski, Aquan-Assee, & Sippola, 1996). Lansford, Criss, Pettit, Dodge, and Bates (2003) found that positive peer relationships attenuated the relationship between negative parenting, low supervision, and externalizing behaviors. While peers certainly have the potential to operate as risk factors in the lives of adolescents, relationships with healthy, prosocial peers can promote positive behaviors and resilience.

## Peers as a Context for Intervention

Since many preventive interventions for adolescents take place in school settings, such interventions necessarily involve peer groups. Universal programs may target entire classes, grades, or schools without making distinctions based on preexisting risk (Greenberg, 2010). Selected, or *indicated,* interventions, on the other hand, target youth who are either at risk for, or already engaged in, problem behaviors (Greenberg, 2010). Dishion, McCord, and Poulin (1999) caution that aggregating groups of already at-risk adolescents, even in the context of an intervention, can have the unintended consequence of creating a setting for further deviancy training and ultimately result in even less favorable outcomes for the youth involved (Dishion et al., 1999). Furthermore, participating in a program that is obviously targeted toward "problem kids" may increase the stigma that at-risk youth may already experience (Greenberg, 2010). Additionally, some peer-based interventions, such as peer mentoring and mediation, do not appear to be particularly effective, though more research on these particular interventions is needed (Kellerman, Fuqua-Whitley, Rivara, & Mercy, 1998).

Despite the above caveats, however, interventions that take place in the context of peer groups can be very successful (Wilson & Lipsey, 2007). Universal, as opposed to selected, interventions may not be as susceptible to the issues of stigma and deviancy training mentioned above, and some traditionally individualized programs may even benefit by the addition of a group component. For instance, in a study of one mentoring program, participants ages 8 through 14 who received a group-based component *in addition to* the traditional one-on-one mentoring demonstrated significant improvements in self-esteem that were maintained at a 3-month follow-up assessment (Westhues, Clarke, Watton, & St. Claire-Smith, 2001). Youth who were only involved in the one-on-one component did not show the same improvement (Westhues et al., 2001).

## Neighborhoods

Adolescents may be influenced by their neighborhoods in a variety of ways. On the one hand, youth frequently have little control over their neighborhood context. For example, neighborhood characteristics such as racial and ethnic diversity, financial resources, and crime rates are all factors outside of the adolescent's sphere of influence. Although these factors may directly or indirectly affect the adolescent's life, she has little influence over them herself. On the other hand, neighborhoods can also provide youth with opportunities to shape their environment. Teens' interactions with neighborhood activities and neighbors themselves provide opportunities for more bidirectional influence. As with peers, different neighborhood characteristics, and interactions between those characteristics and other aspects of youths' lives, can serve as either risk or protective factors for adolescents.

In their review of neighborhood effects on child and adolescent outcomes, Leventhal and Brooks-Gunn (2000) name three potential mechanisms through which neighborhoods may affect youth development (1) institutional resources, (2) relationships, and (3) norms/collective efficacy. Institutional resources refer to the availability and accessibility of resources within the neighborhood such as recreational activities for adolescents, good schools, medical facilities, and so forth. Relationships refer to parent characteristics and support networks available to parents. Norms and collective efficacy include the presence of physical risks such as violence or access to drugs as well as the extent to which formal or informal neighborhood institutions serve to monitor youth behavior (Leventhal & Brooks-Gunn, 2000).

## Neighborhoods and Risk

Just as the beliefs and attitudes of peers may influence adolescents, so too may the collective beliefs and attitudes of their neighborhood. Using data from over 700 African American adolescents,

Stewart and Simons (2010) examined the relationship between the neighborhood "code of the street" endorsing violence, individual acceptance of street codes, and violent delinquency. Neighborhood street culture significantly predicted delinquency above and beyond individual acceptance of these violent street codes. Furthermore, neighborhood street culture enhanced the effect of the individual-level values, such that youth who personally endorsed acceptance of violence were more likely to engage in delinquent behaviors if they also lived in a neighborhood characterized by adherence to street codes. Similarly, Jennings, Maldonado-Molina, Reingle, and Komro (2011) found, even after adjusting for more immediate risk factors such as alcohol use, lack of parental supervision, and depression, that adolescent physical aggression was significantly predicted by neighborhood problems.

Neighborhood crime and violence are also linked to other problem behaviors such as drug use and low academic achievement. In a study of 53 adolescents in the Washington, DC area, Mason and Mennis (2010) found that proximity to crime was more predictive of drug use than either the participant's race or the neighborhood population density (i.e., urban versus rural). Neighborhood disadvantage is also associated with lower levels of college aspiration, even when controlling for numerous individual-level factors (Stewart, Stewart, & Simons, 2007). Clearly, neighborhoods characterized by crime, violence, and disadvantage may pose a risk to the healthy development of youth living in that area, even if adolescents do not experience the violence directly. For example, Dupéré, Leventhal, and Vitaro (2012) found that fear of neighborhood violence, but not actual experiences with violence, was associated with lower self-efficacy among a large sample of urban adolescents. This suggests that adolescents need not experience direct victimization to feel the negative effects of a violent neighborhood.

Aside from crime and violence, structural characteristics of neighborhoods may pose a risk to youth. This could include a lack of institutional resources that leave teens open to problem

behaviors (Leventhal & Brooks-Gunn, 2000). For example, a lack of recreational opportunities was cited among a sample of rural adolescents as a major factor contributing to teenagers' risky sexual behavior—they simply had nothing better to do (Akers, Muhammad, & Corbie-Smith, 2011). In contrast, problematic neighborhood structures might also include institutions or businesses that increase the opportunity for unhealthy behaviors. For instance, Maimon and Browning (2012) found that higher numbers of alcohol retail stores in a neighborhood increases the probability of underage alcohol consumption.

## Neighborhoods and Protection

While certain neighborhood characteristics such as violence or the lack of institutional resources may constitute risk factors for adolescents, other neighborhood-level variables have been found to attenuate risk. Neighborhoods with access to safe, recreational institutions such as Boys and Girls Clubs, YMCAs, or churches may provide youth with opportunities to feel connected to their communities and give them something positive to do. Francois, Overstreet, and Cunningham (2012) found that participation in neighborhood activities, even when there are minimal opportunities, weakens the effect of community violence on academic outcomes. That is, youth who participated in these activities did better in school despite exposure to neighborhood violence.

Neighborhood collective efficacy has also been noted as an important source of protection for youth and families (Sampson, Raudenbush, & Earls, 1997). Collective efficacy refers to networks of trust and shared norms, residential involvement in community activities, and a willingness of neighborhood members to intervene for the common good (Cohen, Finch, Bower, & Sastry, 2006; Sampson et al., 1997). Neighborhoods that have higher levels of collective efficacy are associated with lower crime and violence (Sampson et al., 1997). These high-efficacy neighborhoods confer other benefits to adolescents as well. For example, Cohen et al. (2006) found that higher neighborhood collective efficacy was associated with lower body mass index (BMI) and obesity risk among adolescents, such that youth in high efficacy neighborhoods tend to have healthier body weights. Adults in neighborhoods with higher collective efficacy may not only be more likely to monitor local youth to help them stay out of trouble but also be more comfortable expressing their opinions on other health-related behaviors (Cohen et al., 2006).

## Neighborhoods as a Context of Intervention

Examining the ways in which neighborhood characteristics confer risk or protection to youth can provide insight into potential intervention strategies. Intervening at the level of the neighborhood may prove challenging as this level includes interacting individual residents, institutions, and cultural norms, and not all of these characteristics are equally amenable to change. For example, since a lack of institutional resources constitutes a neighborhood-level risk factor (Leventhal & Brooks-Gunn, 2000), the addition of safe recreational facilities for youth would be a relatively simple neighborhood intervention. Improving collective efficacy, on the other hand, may be much harder to address. Collective efficacy is associated with a host of other factors that may also be difficult to address such as concentrated disadvantage and individual demographics (Duncan, Duncan, Okut, Strycker, & Hix-Small, 2003; Sampson, Morenoff, & Earls, 1999). In addition, the association between collective efficacy and risk factors such as neighborhood crime are complicated. While collective efficacy is clearly linked to lower neighborhood crime and violence, lower crime areas tend to engender more collective efficacy whereas high crime areas stifle it. As a result, interventions attempting to increase collective efficacy directly may prove exceedingly challenging, though they would have the added benefit of helping to clarify the causal direction of some of these associations.

Knowing what mediates the relationships between neighborhood factors and negative

developmental outcomes for teens also provides an opportunity for intervention. For example, Dupéré et al. (2012) found that neighborhood crime and low collective efficacy were indirectly associated with adolescents' internalizing problems via individual self-efficacy. Similarly, Gonzales, Jones, Kincaid, and Cuellar (2012) found that hopelessness mediated the relationship between neighborhood crime and adolescents' internalizing and externalizing problem behaviors. Eliminating neighborhood crime, though a noble goal, is likely to be too challenging for one intervention to accomplish in the span of a child's lifetime. However, individual-level interventions that target mediating variables, such as self-efficacy and hopelessness, may have the potential to buffer the harm experienced by adolescents living in especially violent neighborhoods.

## Media

Media images and messages influence the lives of youth on multiple levels (Brown & Witherspoon, 2002). At the broadest level, media is pervasive and practically inescapable. Youth are exposed to media messages each time they drive past a billboard, flip through a magazine, or turn on the television. However, youth also interact with the media in a more personal, proximal sense. Much of the media to which are adolescents are exposed is self-selected, with teens choosing what to watch on TV, where to surf on the web, and which video games to play. In this section, we examine the ways in which media impacts youths' behavior and attitudes, particularly pertaining to messages of violence, sexuality, and substance use. We focus primarily on the impact of television on adolescents, as it remains the most widely studied medium, but include emerging research on other media forms when possible.

## Media in the Lives of Adolescents

Interactions with the media are a daily reality for modern youth. Children and adolescents spend, on average, over 7 h per day with media: more time than is spent in the classroom, participating in extracurricular activities, or engaging in any other activity besides sleep (Strasburger, Jordan, & Donnerstein, 2010). A marked increase in direct access to media sources may be contributing to the large amount of time spent with media. According to a survey by the Kaiser Family Foundation and Children Now (1997), children commonly have multiple media sources in their private bedrooms. By 2005, two-thirds of children had a television set, one-half had a VCR/DVD player/video game console, and one-third had Internet access or a computer in their rooms (Zimmerman, 2008; Strasburger et al., 2010). However, not all media is created equal in the eyes of adolescents, as some forms of media are preferred above others. While TV use among adolescents remained somewhat stable over a period of 5 years (1999–2004), total media exposure increased dramatically, due to skyrocketing use of computers and video games. Furthermore, increased media exposure was linked to increased media multitasking such as surfing the web with the TV on in the background (Roberts & Foehr, 2008). As new forms of media pervade the lives of adolescents, the affect seems to be additive. Older forms of media, such as television, are not being displaced; rather adolescents are using new media in addition to, and concurrently with, older forms.

The reasons teens use different types of media are as varied as the media sources themselves. While teens tend to use music as a method of relaxation, mood regulation, and self-expression (Strasburger & Wilson, 2002), time spent online is focused on socialization. Gross (2004) found that teens devote most of their online time to socializing with peers via instant messaging or chat. Importantly, Gross (2004) addressed several widely held assumptions about teens and the Internet: that boys and girls use the Internet in very different ways, that Internet use causes isolation and depression in adolescents, and that teens use the Internet to explore their identity through anonymously pretending to be other kinds of people. Gross's findings were contrary to each of these popular claims. Instead, teens seemed to view the Internet primarily as a

social mechanism, used mostly for private communication between friends previously made from in-person social contacts. With regard to television, research suggests that teens watch to obtain information, for entertainment or stimulation, for social integration or self-socialization, and as a means of escape (Dominick, 1987). Understanding why teens seek out a medium may help explain its influence on teens' behavior.

## Theory Behind the Media's Influence on Adolescents

Many theories have emerged to help explain how the media impacts the lives of youth. While the majority of theories center around television use, as it remains the most widely studied medium, emerging research applying theories to Internet use are also important to consider, given the recent increases in adolescents' online time.

Bandura's (1967) *social learning* theory serves as an early framework for understanding the role of television in children's behavior. This theory asserts that viewers learn and ultimately imitate behavior seen by models on television. According to this theory, children exposed to media violence, for example, would be more likely to engage in aggressive play (Browne & Hamilton-Giachritsis, 2005). However, the extent to which a child might imitate a model is dependent on many complex factors, including the similarities between the child and the model, the given model and other models in the child's life, the observed consequences experienced by the model, and how realistic the child perceives the model's behavior to be (Van Evra, 1998).

Later theories, such as *cultivation theory,* posited by Gerbner, Gross, Morgan, and Signorielli (1986), also focused on the impact of television on young viewers. According to cultivation theory, longer amounts of time watching televised content that is seen as being realistic will likely result in a larger impact on the viewer's attitudes and behaviors. This is particularly salient for younger viewers who have less exposure to other informational sources compared to adults and are thus more likely to view television content as realistic.

Underlying these and other theories is the premise that viewers are passive and easily manipulated by the media (Arnett, Larson, & Offer, 1995). In the 1990s, the *uses and gratifications approach* (Rubin, 1993) shifted this view by acknowledging that people consume and respond to media differently depending on any number of personal characteristics (Arnett et al., 1995). The uses and gratifications approach explores why an individual seeks out a certain medium (e.g., information, communication, and economic control) to predict how they use and are impacted by that medium.

While predicting how and why media might affect young consumers is a complicated process, emerging research integrating existing theories with contemporary perspectives has helped to examine this question within a wider range of media sources. For example, LaRose and Eastin (2004) used the framework of Bandura's early social learning theory (1967) to extend the uses and gratifications approach to Internet use, explaining over 40 % of the variance in Internet usage in a large sample of college students. Even as underlying explanatory theory continues to shift, a large body of literature supports a key point: media has an important influence on adolescent behavior.

## Media as a Risk or Protective Factor

Depending on the content, media can serve as a risk or protective factor for youth. In this section, we discuss how risky messages related to violence, sexuality, and substance use may negatively impact youths' behavior and attitudes. We also examine how prosocial media messages may positively influence youths' behavior and serve as a context for intervention.

### Violence

American media has a long-standing reputation for violence, but the effect of this violence on young viewers is still hotly debated (Browne & Hamilton-Giachritsis, 2005). Although modern adolescents are increasingly turning to video games and the Internet, teens are still exposed to a significant amount of violence through TV alone. In fact, the National Television Violence Study

found that 61 % of television programs contained violence, with only 4 % touting an antiviolence theme. Further, violence was often glamorized and rarely punished; 54 % of programs showed lethal violence, with 39 % of these violent acts committed by an attractive person. Only 16 % of realistic violence resulted in long-term consequences, while 45 % of programs showed no punishment at all for offenders. Negative emotion was seldom associated with violent acts, as 71 % of scenes showed no criticism or remorse for violent behavior, and 42 % linked violence with humor (Federman, 1998). In all, violence on television appears to be rampant, romanticized, unpunished, and associated with positive feelings.

While some continue to doubt the impact of media portrayals of violence on the development of aggression in young viewers, an abundance of research supports the existence of media violence effects (Browne & Hamilton-Giachritsis, 2005). Recent findings are unequivocal on one front in particular: exposure to violent media increases the likelihood of aggressive and violent behavior in adolescents (Anderson et al., 2003). In accordance with Bandura's (1967) social learning theory, short-term exposure to violent media appears to increase teens' physical and verbal aggression through imitation of observed behavior. For example, Bjorkqvist (1985) demonstrated that young boys who watched a violent film, as opposed to a nonviolent film, before a hockey match were rated as significantly more aggressive, engaging in more physical assault during the match. Given that much of the violence portrayed on television is perpetrated by attractive characters who are rarely punished, it is not surprising that youth may imitate these enticing models.

Long-term effects of violent television exposure can be understood in terms of desensitization. As cultivation theory would predict, heavy television viewers appear to adopt the views and attitudes reflected by realistic violent programming, such that violence is justified, acceptable, and less innately disturbing (Van der Voort, 1986). Over time, such exposure to violent media appears to have a lasting impact on teens' behavior. In a striking longitudinal study, researchers found significant correlations between childhood viewing of violent media and aggressive and violent behavior 15 years later, for both men and women (Huesmann, Moise-Titus, Podolski, & Eron, 2003). This sustained effect of violent television exposure remained even after accounting for demographic factors such as parental education or the individual's personal achievement.

While the majority of existing research on media violence effects examines television viewing, emerging research supports essentially the same conclusions for other forms of media. A growing of body of literature examining violent video games have found that engaging in violent gameplay increases physical aggression, and while little research has examined violence in Internet activity, results would likely be similar to other media forms (see Anderson et al., 2003).

### Sexuality

While young people rely on various sources to gain information about sexual health and sexual relationships, media may be far more influential than parents or school-based sex education programs. According to a survey by the Kaiser Family Foundation and Children Now in 1997 (as cited by Ward, 2003), entertainment media ranks as the top source for information about sex. Although growing Internet use among youth have led to efforts to provide teens with sexual health information online, emerging exploratory work on the role of the Internet in teen's sex knowledge suggests that adolescents do not, in fact, trust the Internet as an informational source (Jones & Biddlecom, 2011). Instead, young people are more drawn to entertainment media such as television and magazines for sex information, since such media are widely accessible, open and appealing, and most often portray sex in a positive, social, and promotive way (Brown & Keller, 2000; Selverstone, 1992). Teens' reliance on entertainment media for sex information is troubling: while 64 % of television programs contain sexual content, only 15 % of those depicting sexual situations include any type of consequence for the behavior, and these are usually minor (Kunkel et al., 2003; Collins et al., 2004).

Research suggests that viewing highly sexualized media may influence adolescent sexual behavior. Adolescents watching sex on TV predicts earlier sexual debut, even after accounting for other factors that may contribute to early sexual initiation (Collins et al., 2004). Further, teens exposed to high levels of televised sexual content were twice as likely to become pregnant within the following 3 years (Chandra et al., 2008). This newer health-related research supplements prior work connecting sexual media exposure to more casual, liberal, or dysfunctional sexual attitudes (Huston & Wright, 1997).

Media also presents an opportunity to convey positive sexual health messages to teens. Programming that incorporates positive or educational components of sexuality into their plot have shown to be an effective method to reach teens. For example, after an episode of *Friends* focused on condom efficacy aired in 2001, adolescent viewers who were surveyed reported remembering the depiction of condom failure and learning about condoms from the episode (Collins, Elliot, Berry, Kanouse, & Hunter, 2003). As such, sexual content in entertainment media can serve as both a risk factor and a potential protective factor for youth.

## Substance Use

Alcohol and tobacco use are ubiquitous in American media. Alcohol use alone is shown in more than 70 % of primetime television programming and 90 % of films (Roberts, Henriksen, & Christenson, 1999). Further, media portrayals of attractive adolescent characters engaging in substance use are common. In a content analysis of the highest grossing movies from 1999 to 2001, two-fifths of teen characters drank alcohol, one-sixth used tobacco products, and one-seventh used illegal drugs (Stern, 2005). Emerging research has demonstrated a relationship between substance use in movies and adolescent behavior. In a longitudinal US sample, Sargent et al. (2007) found that exposure to smoking in movies predicted future smoking behavior, even after accounting for other potentially related factors. Similarly, Sargent, Wills, Stoolmiller, Gibson, and Gibbons (2005) also found a link between

exposure to alcohol use in movies and early-onset teen drinking, again controlling for many potential confounds.

Beyond merely viewing portrayals of substance use in movies and television, adolescents are also actively enticed to use substances through extensive advertising for alcohol and tobacco products. Teens view, on average, somewhere between 1,000 and 2,000 advertisements for beer and alcohol each year (Strasburger, 1997). Further, advertisements targeted at young consumers may play to youth's desires by depicting attractive people who seem to be enjoying life (Strasburger & Wilson, 2002), whereas others feature cartoon characters to promote their product (Kelly, Slater, Karan, & Hunn, 2000). Research suggests that exposure to these ads can increase substance use among youth. Collins, Ellickson, McCaffrey, and Hambarsoomians (2007) found that exposure to alcohol advertising among sixth graders was strongly predictive of both drinking behavior and intentions to drink in seventh grade. Similarly, Henriksen, Schleicher, Feighery, and Fortmann (2010) examined the relationship between exposure to cigarette advertising at the point of sale (i.e., ads located in the stores themselves) and adolescent smoking initiation. They found that adolescents who frequently visited stores with cigarette advertising were more than twice as likely to begin smoking as adolescents who did not visit such stores. Thus, media exposure to substance use, including advertising, may serve as an important risk factor in adolescents' decisions to consume or abuse substances.

Messages regarding substance use in the media can also be a positive influence on teen behavior. Mass media has long been utilized as a tool to spread prosocial, health-related messages to adolescents. Countermarketing campaigns aimed at reducing cigarette use among teens have been widely and successfully used (Farrelly, Niederdeppe, & Yarsevich, 2003). While the impact of national campaigns is difficult to measure, decreases in smoking behavior among areas with high exposure to national antismoking media programs suggests that some positive changes may be associated with

countermarketing (Farrelly et al., 2003). Further, emerging research suggests that smaller-scale, focused media campaigns may be effective when capitalizing on a synergistic effect of school-based and community-based intervention. Slater et al. (2006) combined a media program within schools with a complimentary participatory, community-based media effort targeted at reducing substance use among youth. Findings showed a decrease in marijuana, alcohol, and cigarette use, suggesting that combined media approaches may be an effective context for intervention.

In summary, teens are avid media consumers, yet more often than not, this media perpetuates images of violence, sexual risk, and substance abuse that have a negative impact on adolescents' attitudes and behaviors. In this way, research supports media as a risk factor for increasing aggressiveness, sexual behavior, and cigarette and alcohol use among teens. Given teens' widespread media use, and limited research indicating that media has the potential to serve as a positive, health-promoting influence for young people, media needs to be further investigated as a potential context for intervention.

## Conclusion

This chapter highlights the many levels of community affecting adolescents as they mature, from more proximal influences like a teen's peer group to more distal influences like alcohol advertising on a billboard. Bronfenbrenner's (1979) Ecological Model provides a useful framework of the multiple layers of community interacting with adolescents. Importantly, the Ecological Model stresses how influences outside of teens' immediate environments can still shape their thoughts, attitudes, and behaviors—and, therefore, how adolescent interventions can be staged within multiple spheres of influence for maximum effect. For example, the gold standard treatment for adolescent conduct disorder, Multisystemic Therapy, explicitly adopts an ecological framework and applies interventions aimed at the teen, parents, extended family, neighborhood, peer group, and school or job in order to reduce delinquent behavior (see, e.g., Timmons-Mitchell, Bender, Kishna, & Mitchell, 2006). Community-based adolescent interventions operating at multiple ecological levels have found similar success in other domains, such as reducing STD/HIV transmission (DiClemente, Salazar, & Crosby, 2007), increasing physical activity (Elder et al., 2007), and reducing substance abuse (Liddle, Rowe, Dakof, Ungaro, & Henderson, 2004).

Finally, each of the domains of community influence on adolescents highlighted in this chapter—peers, neighborhoods, and media—is inherently neutral and can have either a positive or negative influence on adolescent development depending on the content. Just as a violent neighborhood can be a source of risk for teens, a neighborhood with high collective efficacy can be a source of protection. Just as television shows with highly sexualized messages can contribute to teens' risky sexual behavior, shows that realistically portray the consequences of such behavior can reduce the risk. The most effective community interventions for adolescents are those that are modeled after the natural sources of protection for adolescents already at work in the community.

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# Evidence-Based Practice in the Prevention and Treatment of Adolescent Behavior Problems

Thomas L. Sexton, Adam R. Fisher, Clare Graham, and Nihal A. Elnahrawy

Prevention and treatment specialists in the mental health field face some of the most difficult and pervasive of those adolescent behavior problems. Survey data gathered over the last decade suggest that the range of adolescent behavior problems, including drug use/abuse, violence, and school-related behavior problems, are widespread among adolescents of all cultures, ethnicities, and communities (Sexton, Gilman, & Johnson-Erickson, 2005). From Columbine in 1999 to Newtown in 2012, it is clear that when not identified early and successfully treated, adolescent behavior problems may result in outcomes that are devastating to youth, their families, their schools, and the communities in which they live.

Despite their prevalence, identifying and describing youth behavior problems (e.g., "dysfunction") is more difficult and complex than one might think. It is not easy to determine if an oppositional youth is going through normal adolescent developmental phases or if those behaviors represent the onset of more significant issues. Does fighting, withdrawing, disagreeing, and standing up to authority figures represent behavior that is often part of normal adolescent development? Identification is made even more complex by the various systems in which similar behavior problems are identified, and the different labels given by these systems for similar behaviors (e.g., child welfare, juvenile justice, or mental health). What might be considered criminal behavior in the juvenile justice system is often seen as a mental health disorder at the community mental health center.

What we do know is that regardless of the system in which they might be involved, adolescents labeled as having "dysfunctional" behavior demonstrate complex clinical profiles including a wide range of developmental, emotional, and behavioral problems. Kazdin (2004) distinguishes psychiatric disorders (diagnosable disorders such as anxiety, mood, substance-related, adjustment, and disruptive behavior disorders, American Psychiatric Association, 2000), from problem or at-risk behaviors (drug and alcohol use, school suspension, and truancy), and delinquency (committing unlawful acts) as adolescent

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problems that may require intervention. We do know that this complexity makes prevention difficult and treatment complex.

Even with this complexity there is much good news regarding the quest to successfully prevent and treat adolescent behavior problems. Probably more than in any other area of psychology, the domain of adolescent behavior problems has seen the development, maturation, and growth of a number of successful "evidence-based" treatment programs (Sexton et al., 2011). Of the prevention and treatment program options currently available, some have a significant and growing body of evidence rooted in both clinical trial and community-based outcome research. In general, the outcomes suggest that when implemented with model fidelity and clinical competence, youth and families can change drug use and abuse problems, reduce violence, less frequently enter the Justice System, and when they do, improve to the degree that they can successfully function in schools, communities, and with peers (Sexton, Datchi, Evans, LaFollette, & Wright, 2012). Over the last 15 years, many of the evidence-based treatment and prevention programs have also been successfully implemented in local communities, and some across entire statewide systems of care with impressive results (Barnoski, 2004; Elliott, 1998; U.S. Public Health Service, 2001). The evolution of evidence-based prevention and treatment programs for adolescent behavior problems fits within a broader movement of evidence-based model development in medicine, psychology, and other social services (Sexton et al., 2011).

Despite the significant gains made in the development and dissemination of evidence-based programs, many controversies remain. For some, evidence-based programs are viewed as a challenge to well-entrenched traditional means of treatment. EBPs are sometimes perceived as simple curricular approaches with paint by the numbers guidelines that are unresponsive to the needs of youth, families, and communities. While others may agree that evidence-based programs are necessary, the definition of what constitutes "evidence based" remains unclear, the criteria for such programs is elusive, and skepticism remains

regarding the use of science as the basis of practical decision making within human services. Even when successful prevention and treatment programs are identified, they are often not easily accessed by youth, families, and communities in need. The lack of clear information regarding EBP and the ways in which it can help is a significant barrier to successful integration of the science and practice of preventing and treating adolescent behavior problems.

Our goal in this chapter is to provide an overview of the background, current status, important controversies, and future directions of evidence-based prevention and treatment practices for adolescent behavior problems. To do so we begin with a discussion of the scope of the problems illustrating the complexity of identifying and labeling youth behavior problems. We define evidence-based practice and provide an overview of promising and range of prevention and treatment programs that meet those criteria with demonstrated positive outcomes in both clinical and community settings. Finally, we address the ingredients needed to move successful programs from good ideas into best community-based practices so that those in need can take advantage of best available treatments for adolescents with behavior problems.

## The Range of Adolescent Behavior Problems

Adolescent behavior problems are often described according to two broad categories: internalizing and externalizing problems. Internalizing disorders are problems internally directed and include clinical symptoms such as anxiety, withdrawal, and depression. These youth are less likely to be referred for treatment and not often labeled as "behavior problems." These youth are easily overlooked in families, schools, and communities. However, the impact of internalizing problems among adolescents is significant in regard to later mental health adjustment, school success, peer struggles, and even teen suicide. These youth are less likely to be referred for treatment and are easily overlooked in families, schools,

and communities. In addition, internalizing problems of adolescence can set a pattern of psychological and behavioral functioning that becomes a life-long pattern of struggle that often include behavior associated with externalizing disorders (Sexton et al., 2005).

Externalizing disorders are those directed to others and the environment, and include oppositional, hyperactive, aggressive, and antisocial behaviors. Numerous psychiatric diagnostic categories encompass these areas, including attention-deficit and disruptive disorders. Youth referred to the mental health and juvenile justice systems are most likely to be those who fall into the externalizing behavior disorders category (Sexton et al., 2005). Early onset (childhood) problems begin in early childhood and may later escalate into more violent behavior. Only about 20–40 % of the male adolescents in this category become serious offenders later in life. Later onset (adolescent) problems that are not present in childhood appear in the adolescent years. Between 60 and 80 % of these youth are later identified as serious offenders. Historically, intervention with adolescents with externalizing problems has been viewed as one of the most difficult areas of practice for prevention and treatment specialists. Youth and families are often viewed as treatment resistant, lacking motivation, and as being untreatable by traditional prevention and intervention programs (Alexander, Sexton, & Robbins, 2002).

The broad categories of externalizing behaviors actually encompass a wide range of specific behaviors, which include bullying, domestic violence, and criminal behavior. Between 1988 and 1994, the juvenile arrest rate for violent crimes (homicide, forcible rape, robbery, and aggravated assault) increased by 62 % (Snyder & Sickmund, 1999). From 1983 to 2010 youth violent offenses increased 70 %. During that time the number of adolescents convicted of homicide nearly tripled. Drug use and abuse are significant contributors to the specific clinical problems experienced by troubled adolescents. Approximately 14 million individuals (6.3 % of the population) ages 12 and over report current use of an illicit drug. Of youth ages 12–17, 9.5 % report illicit drug use (Substance Abuse and Mental Health Services Administration, 2013); prescription drug use is on the rise (some 250). Finally, 60 % of treatment admissions for drug abuse represent repeat treatment episodes.

Less apparent but equally troubling are the significant number of adolescents with "behavioral problems" who are in need of mental health treatment. Epidemiological studies suggest that between 17 and 22 % of adolescents suffer from a significant developmental, emotional, and/or behavioral problem (Kazdin, 2003). High rates of mental disorders also exist among youth involved in the juvenile justice system (Hogan, 2003; Lyons, Baerger, Quigley, Erlich, & Griffin, 2001; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002) with an estimated 50–80 % of adolescents involved with the juvenile justice system meeting the criteria for a mental disorder such as conduct or substance-related disorders (Kazdin, 2000). Each year, an estimated 600,000 youth cycle through detention centers, with more than 70,000 youth in a juvenile correctional setting on any given day. For some young people, contact with the juvenile justice system may be the first chance they have ever had to obtain treatment for mental health, substance abuse, or other needs. With mental health treatment and other services scarce or difficult to obtain in many communities, families or school administrators may feel that the juvenile justice system is a necessary last resort for connecting youth to the treatment they need. In general, involvement in the juvenile justice system has been shown to have long-term detrimental effects and make youth more prone to future antisocial behavior or criminal activity.

Finally, there is a category of youth with behavioral issues that do not meet the criteria for either internalizing or externalizing disorders. These problems are frequently overlooked. This category includes youth who may engage in problem behaviors that put them at risk for becoming involved in the mental health or juvenile justice system or to experience future psychiatric problems. These youth may be involved in truancy, vandalism, stealing, drug use, bullying, or running away from home (DiClemente,

Hansen, & Ponton, 1996). These data led Kazdin (2003) to suggest that prevalence rates for youth behavior problems substantially underestimate the scope of the existing problem. It is important to understand this population because they are the prime targets for early intervention efforts aimed at preventing internalizing and externalizing behavior patterns.

## Evidence-Based Prevention and Treatment Programs

Evidence-based prevention and treatment programs are the mindful, intentional actions of the prevention and treatment specialist support by scientific evidence, with the intent of improving the client's functioning across domains. Treatment interventions range from singular discrete actions to comprehensive treatment programs and models that represent increasing levels of complexity and specificity. Techniques are discrete, single, relational, or structured activities with a narrow range of desired outcomes. In contrast, treatment programs/models are comprehensive treatment paradigms with theoretical principles, clinical change processes, change mechanisms, and adherence measures (Chambless & Hollon, 1998). According to Alexander, Holtzworth-Munroe, and Jameson (1994), a research-based clinical intervention program addresses clinically relevant problems within a comprehensible model that outlines the clinical intervention and therapist characteristics with sufficient detail to make it replicable.

EBTs have consistent, strong, and reliable cumulative evidence for the success of the practice across different studies, clients, and contexts. The evidence needed to distinguish a program as evidence based includes valid and reliable results of multiple studies systematically conducted across diverse clinical populations, in complex clinical settings, that utilizes specific, replicable interventions and change mechanisms that are testable and replicable, providing potentially relevant information to clinicians. The evidence must indicate a comprehensive view of outcomes, including changes in individual functioning, couple/family functioning, reduction of clinical symptoms, global measures of client well-being, and/or cost–benefit analyses of the community implementation of an intervention/treatment.

*The Evolution of EBP.* Evidence-based prevention and treatment programs for adolescents have evolved in ways similar to that in other areas of professional practice. Evidence-based medicine (EBM) is a movement established in Canada and Great Britain to bring science to inform clinical decision making with the aim of improving effectiveness. Sackett, Rosenberg, Gray, Haynes, and Richardson (1996) define evidence-based medicine (EBM) as, "…the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of Evidence-based Medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research." In EBM, clinical decisions are based on a combination of the strongest and most reliable external evidence (which may or may not include randomized clinical trials), an evaluation of the validity of that evidence, and consideration of its clinical relevance with specific problems and individual patients. External evidence is gained from research findings such as those reported from randomized clinical trials of specific treatments or systematic reviews of multiple randomized trials (Porzsolt et al., 2003; Sackett et al., 1996). Good clinical decision making remains an integration of individual clinical experience with the best available external evidence (Porzsolt et al., 2003; Rowland & Goss, 2000).

While there are many different prevention and treatment programs in the professional literature (Elliott estimates over 1,000), few have enough external evidence to suggest that they are effective. Numerous systematic literature reviews suggest that traditional treatment programs are notoriously unsuccessful at engaging youth into treatment and prevention programs, keeping them in programs, and demonstrating successful outcomes (Elliott, 1998; Kazdin, 2003; Sexton, Alexander, & Mease, 2004). It has been estimated that between 40 and 60 % of youth in traditional treatment programs drop out prior to program completion (Kazdin, 1996). Using a

relatively modest standard, the Blueprint project (Elliott, 1998) found only 1 % of reviewed programs (after review of over 1,000 published programs) to have demonstrated effectiveness in community settings. The Surgeon General found only five programs to be effective in successfully preventing and treating violent youth behavior problems (U.S. Public Health Service, 2001). In a systematic review of the research literature, Sexton et al. (2012) found only a few systematic family-based intervention programs to be successful treatments of choice for a wide range of clinical syndromes typically classified as adolescent behavior disorders.

*Levels of Evidence.* Of those prevention and treatment programs are identified as evidence based, there is significant variation across programs in terms of the degree of supporting evidence. Sexton and Coop-Gordon (2009) and Sexton et al. (2011) suggested that there are different levels of evidence that describe that programs typically range from those that are evidence informed, to promising, to evidence based depending on the strength and relevance of the programs outcomes. Evidence-informed interventions/treatments are those that are informed by psychological research or research on therapeutic common factors. Evidence for the program is primarily based on extrapolation from explicitly identified or preexisting empirical evidence for common components (e.g., cognitive coping skills) of an already validated evidence-based treatment model (e.g., Coping Cat CBT for Anxiety) to suggest that they have an evidence base. These may be, for example, interventions that have no direct research evidence but are within the same category of other interventions that do have research support. This category may also contain some of the basic relational attitudes that are neither specific to a given intervention nor specifically tested, but are considered central principles for many approaches to therapy (e.g., empathy, engagement, etc.). Since interventions at this level have no specific studies, there is little evidence about general effectiveness, much less their use in specific contexts or with specific clients (Sexton et al., 2011).

Promising interventions/treatments are those treatments that have preliminary results, evaluation outcomes, or results from high-quality studies using methods with limited generalizability. Since there is little or only preliminary research, there are likely to be few findings that indicate the effectiveness of the intervention in diverse settings or in different clinical contexts. While these interventions may be theoretically complex and have proposed change mechanisms, there is little evidence that these change mechanisms have been tested. These results have not been replicated in another setting or evaluated for specific outcomes with specific populations (Sexton et al., 2011).

Interventions that meet the highest standards for evidence-based treatment are specific and comprehensive programs that have systematic high-quality evidence demonstrating that they work with the clinical problems they are designed to affect. At a minimal level, such evidence should include multiple outcome studies to show that the program can reliably demonstrate outcomes greater than those gained from typical care for that treatment population (usual care). For some evidence-based interventions, there may only be a few studies of high methodological quality with strong outcomes yet with little diversity of client, problem, or context evaluated. With other long-standing intervention programs, there may be up to 30 years of systematic research of the models, with model adaptations over time. In the review section below, we identify both promising as well as evidence-based prevention and treatment programs for adolescent behavior problems.

## Current Evidence-Based Prevention Programs for Adolescent Behavior Problems

There are a number of programs at each of the levels of evidence described by Sexton et al. (2011). In this section, we briefly review the programs or interventions in each category (promising and evidence based) that receive the most research in each category. Ours is not intended to be an exhaustive but instead an illustrative list.

## Promising Prevention Programs

The *Strengthening Families Program for Parents and Youth 10-14 (SFP 10-14)* is a family-based prevention program modeled after the original Strengthening Families Program (SFP). SFP is an evidence-based prevention program for 6–12-year-old high-risk children and their parents. SFP 10-14 consists of 7 weeks of individual and family skill building for parents and youth (Center for the Study and Prevention of Violence, 2006). Individual parent sessions are conducted in groups, where the adults learn to clarify their behavioral expectations of their youth, implement consistent and appropriate discipline, and manage difficult emotions expressed by their youth. Youth also learn effective communication skills in individual sessions, along with peer resistance techniques. Overall, SFP 10-14 attempts to reduce youth drug use through building family capacity (Riesch et al., 2011). The program has been shown to reduce mental health problems, use of methamphetamines, and alcohol abuse in a randomized control trial that included a 10-year follow-up study (Spoth, Guyll, & Day, 2002).

However, while Semeniuk et al. (2010) found that parents and youth reported enjoying the program, quantitative results were questionable regarding efficacy for improving problem-solving skills. Semeniuk et al. also found that youth in the program were more quickly and better able to learn the skills than adults. In a study designed to determine whether the implementation of SFP 10-14 would result in greater family cohesion, communication, and supervision of youth, as well as less alcohol and drug use when contrasted to a comparison group, Riesch et al. (2011) found that while parent–youth dyads who completed the entire intervention experienced positive changes, those who only reached partial completion experienced some negative effects. Riesch et al. (2011) concluded that this may be due to greater compliance in those who complete the program, adding that compliance is often correlated with a positive family environment. The authors added that those who did not complete the program may view the necessary skills and program goals to be unattainable.

The Young–Parenthood Program (YPP) is a prevention program for pregnant adolescents and their current or former partners, designed to facilitate interpersonal skill-building relevant to positive coparenting, through 8–12 weekly counseling sessions (Center for Urban Population Health, 2010; Florsheim et al., 2012). The YPP also has a goal of preventing intimate partner violence (Florsheim, McArthur, Hudak, Heavin, & Burrow-Sánchez, 2011) and child abuse (Center for Urban Population Health, 2010). Counselors running the program follow straightforward yet flexible guidelines allowing the practitioner to fit the model to the needs of each couple (Florsheim et al., 2012). The model consists of five phases (Florsheim, Burrow-Sánchez, Hudak, & Minami, 2010) built on core principles: behaviors in relationships are developmentally functional, these behaviors are reinforced by both positive and negative patterns, and working within the context of the relationship is more efficient than working with individuals alone (Florsheim et al., 2011).

Counselors running the program follow straightforward yet flexible guidelines provided in a treatment manual. The flexibility allows the practitioner to fit the needs of each couple (Florsheim et al., 2012). The model consists of five phases, including rapport building and education, personal and relationship goals, communication and relationship skills, and family planning (Florsheim et al., 2010). These phases are built on several core principles; behaviors in relationships are developmentally functional, that these behaviors are reinforced by both positive and negative patterns, and that working within the context of the relationship is more efficient than working with individuals alone (Florsheim et al., 2011).

The program is based on relationship research that suggests a supportive alliance in coparenting facilitates nurturing for children (Florsheim, Hall, Gaskill, McArthur, & McElligott, 2007), as well as research on coparenting in adolescence (Heavin, 2009), attachment theory, and family systems theory (Florsheim et al., 2011). Cowan, Cowan, and Knox (2010) report preliminary findings that the transition to parenthood may be a

key time for a couple at risk for intimate partner violence to work with a therapist. Florsheim et al. (2010) note that intimate partner violence potential is one of the many risk factors related to dysfunctional coparenting.

The YPP is one of the few programs for young high-risk couples that have been evaluated by research (Cowan et al., 2010). In a study on how the YPP might support coparenting in this population, fathers who completed the program showed enhanced relationship skills (Florsheim et al., 2007). This study also found mixed results: both fathers and mothers who completed the program reported an increase in relationship insecurity. The authors suggest that this finding highlights the challenges faced by these "high-risk" couples. Florsheim et al. (2010) found that mothers who completed the program were more relationally competent than those who did not. This competency indirectly predicted fathers' potential of child abuse. The YPP has also been evaluated for the prevention of intimate partner violence: adolescent couples identifying as Latino or Hispanic had significantly lower occurrences of intimate partner violence after completing the program, compared to those not in the program (Varela, Florsheim, & Landrum, 2009). Florsheim et al. (2011) also found that while those who completed the program had lower rates of intimate partner violence at the first follow-up, this finding was reduced over time.

## Evidence-Based Prevention Programs

The Life Skills Training Program (LST) is an effective research-based substance abuse prevention program that targets middle and junior high school youth in the prevention of tobacco, alcohol, and marijuana use and abuse through the development of skills that reduce the risk of engaging in high-risk activity (Botvin & Kantor, 2000). The program consists of three components: drug-related knowledge and skills, personal self-management, and general social skills. The program typically lasts 3 years, conducted in the classroom by teachers or older peers

with initial sessions in the first year followed by multiple booster sessions. The preferred intervention method is through group discussions with a focus on skills training, consisting of instruction and demonstration by the teacher, behavioral rehearsal by the students, feedback to students from the teacher, social reinforcement by the teacher, and continued practice by the students through homework.

The Life Skills Training Program is grounded in social learning theory (Bandura, 1977) and based on a person–environment interactionist model of drug abuse (Botvin & Kantor, 2000). This model asserts that the etiology of drug abuse is based in the interaction between the person and their environment through factors that increase a person's risk of drug abuse. This is a complex and dynamic process that is composed of multiple influences (social learning through peer, family, community, and media) and factors (self-esteem, anxiety, and excitability), resulting in multiple pathways to drug abuse. As a result, the program focuses on decreasing the number of risk factors as opposed to targeting specific pathways. A 50–87 % reduction in the prevalence of tobacco, alcohol, and marijuana use has been found relative to adolescent controls that did not participate in the program (Sloboda & David, 1997). Several large-scale controlled randomized trials have also demonstrated that the program increases drug knowledge and decreases the use of alcohol, tobacco, and marijuana by adolescent participants (Griffin, Botvin, Nichols, & Doyle, 2003). Older peer-led LST was shown to be effective in reducing the frequency of alcohol use, including reduction in drinking, heavy drinking, and getting drunk, as well in reducing marijuana use (Botvin, Baker, Dusenbury, Tortu, & Botvin, 1990).

The Midwestern Prevention Project (MPP) is an evidence-based drug use prevention program that targets youth transitioning from early to late adolescence, helping this population learn skills for avoiding drug use and recognizing social pressures (Pentz, Mihalic, & Grotpeter, 1998). MPP promotes behavior change through training adolescents to understand and resist social pressures to use drugs, and training adults such as parents

and community leaders in communication and prevention practice skills (Pentz et al., 1990). The program draws its theoretical basis from social learning, transactional and systems theories, and communication theories (Pentz et al., 1990).

The 5-year program includes five sequentially administered components. The first component utilizes mass media, including talk shows and public service announcements on television and radio. The second takes place at schools over 10–13 classroom sessions designed to increase students' abilities to resist social pressures to use drugs and is conducted by teachers trained in using the program. The third involves the development of family support. The fourth component promotes nondrug use as the norm in the community and attempts to promote action by government leaders to implement drug abuse prevention services. Finally, the fifth component involves health policy implemented by local community and government.

The effectiveness of the program has been evaluated in a number of studies, such as MacKinnon et al. (1991) who found that schools which implemented the program in comparison to control groups had higher rates of students who did not intend to use drugs, felt that their friends were not accepting of drug use, and that it would be possible to talk about drug problems with their friends. After controlling for other variables such as demographics, family communication, and drug use by friends and family, Rohrbach et al. (1994) found that parental participation in the program was a key mechanism of positive outcome, reporting that high parental participation was negatively correlated with adolescent drug use at follow-up. Pentz et al. (1990) also found that the quality of implementation, specifically measured by the amount of exposure the target population has to the program, significantly impacts the outcome regarding adolescent drug use behavior. In a study of the effects of MPP for adolescent substance abuse prevention, Riggs, Chou, and Pentz (2009) found the program to delay initiation of and reduce growth in the use of amphetamines for young adults when compared to a control group.

## Current Evidence-Based Treatment Models for Adolescent Behavior Problems

In the following section, we discuss two promising treatment programs, Brief Strategic Family Therapy and Trauma-Focused Cognitive Behavioral Therapy, in addition to the promising area of psychopharmacological treatment. While the evidence regarding pharmacological treatment is complex, it is widely used and thus important to classify with other available treatments. We describe five evidence-based treatment programs: Multidimensional Family Therapy, Multisystemic Therapy, Ecologically based Family Therapy, Functional Family Therapy, and Multidimensional Treatment Foster Care. It is important to note that although these are not the only evidence-based programs for use with adolescents, these programs represent a range of approaches from family therapy based to foster treatment.

## Promising Treatment Models

Brief Strategic Family Therapy (BSFT) is a family therapy intervention for children and adolescents ages 6–18 with behavioral or substance abuse problems. BSFT targets improving youth problem behaviors at home and in school including conduct problems, oppositional behavior, delinquency, socializing with antisocial peers, and risky sexual behavior (Robbins, Szapocznick, & Horigian, 2010). The intervention strategically focuses on family interactions and maladaptive relationships over the course of about 12 sessions and is built around three main principles: family systems, patterns of interaction, and problem-focused interventions (Szapocznik, Schwartz, Muir, & Brown, 2012). In BSFT, a family system refers to the idea that all members of the family are interdependent with each other, with the behavior of each individual impacting the behaviors of the others. Problem behaviors are symptoms of maladaptive patterns that continue to reinforce and maintain behavior. BSFT targets these maladaptive patterns, while attempting to

increase or strengthen more positive interactions (Szapocznik et al., 2012).

Outcome studies have shown BSFT to be an efficacious intervention for adolescent behavior problems including drug abuse and maladaptive family functioning (Szapocznik et al., 2012). The BSFT model was also found to be effective for Hispanic-American youth who had been identified as "difficult to engage and treat" due to several factors including cultural conflict, low family cohesion, and little parental support (Vega, Gill, Warheit, Zimmerman, & Apospori, 1993). Szapocznik et al. (2012) note that the next step for BSFT is a focus on the community implementation of the model.

*Psychopharmacological Treatment.* The use of psychopharmacological treatment in addressing youth behavior problems is problematic since most of the available research has been based on adult populations. While research on psychotropic medications for adolescents has increased in the last decade (Dulcan, 2010), there are currently no specific evidence-based medication guidelines for the treatment of adolescent behavior disorders (Substance Abuse and Mental Health Services Administration 2013). This lack of a systematic decision-making model leaves assessment of the effectiveness of medication to the judgments of individual practitioners.

In addition, research suggests differential rates of metabolism of psychotropic medications across age and ethnicity, and that psychosocial interventions produce larger effect sizes than psychotropic medications in the management of Conduct Disorder and Oppositional Defiant Disorder (APA Working Group on Psychoactive Medications for Children and Adolescents, 2006). Evidence to date suggests that psychopharmacological treatment alone is insufficient to treat conduct disorder, and that successful outcomes require a combination of behavioral and psychosocial interventions along with psychopharmacological treatment (Tcheremissine & Lieving, 2006).

## Evidence-Based Treatment Models

Multidimensional Family Therapy (MDFT) is a rigorously studied outpatient treatment that inte-grates family therapy, individual therapy, drug counseling, and multiple systems-oriented intervention approaches to treat adolescent drug abuse and related emotional and behavioral problems (Liddle, 2002). MDFT builds on knowledge derived from research on risk and protective factors related to youth substance abuse in formulating its assessment and intervention techniques. It targets multiple aspects of youth presenting problems through interdependent modules that together form the adolescent's psychosocial world, each of which contributes to maintaining the problematic behavior.

MDFT has 10 predetermined theory-grounded rules that govern the therapist's behavior in the therapy room (Rowe, Liddle, McClintic, & Quille, 2002) (1) adolescent drug abuse is a multidimensional phenomenon, (2) problem situations provide information and opportunity, (3) change is multidetermined and multifaceted, (4) motivation is malleable, we do not assume clients or parents to enter the treatment all motivated, (5) working relationships are critical, (6) interventions are individualized according to each family, family member, and family's circumstances, (7) planning and flexibility are two sides of the same therapeutic coin, continuous evaluation of every intervention and adjusting the interventions accordingly, (8) treatment and its multiple components are phasic, (9) therapist responsibility is emphasized, and (10) therapist attitude and behavior are fundamental to success.

In addition, MDFT consists of a succession of three stages. The first stage involves assessment of individual and family problems, and patterns of interaction. The therapy 'map' is tailored accordingly, and the focus and goals of therapy are formed. The second stage is the working phase of treatment wherein change attempts are pursued by the therapist through a variety of interventions either inside the family (e.g., communication or problem solving skills) or outside (e.g., job training and GED acquisition), in order to access resources that will provide the individual with concrete alternatives to the drug abuse and delinquency. The third stage focuses on acknowledging the work that has been completed, encouraging the family to sustain the

progress, and generalizing outcomes to other arenas of adolescent's life.

MDFT is spread over a 3–6-month period with a set of clear goals to achieve during each session, and clear directions for the therapists to follow during each stage of therapy. Some sessions are individual (with either the adolescent or the parents), and some include the whole family. The therapist meets with the adolescent or family 2–3 times per week throughout the treatment period and may communicate with the family over the phone between sessions. To help establish a stronger alliance and eliminate treatment barriers, sessions may be held in-home, at the treatment clinic, or at community locations such as school or court.

Multisystemic Therapy (MST) is a family- and community-based treatment model rooted in family systems, general systems (von Bertalanffy, 1968), and social ecological theories (Bronfenbrenner, 1979), designed to address chronic behavior problems and serious emotional disturbances in adolescents. MST has been used to treat serious emotional disturbances in adolescents, youth violence and criminal behavior, juvenile sex offending behavior, alcohol and drug abuse, and child maltreatment, but the research evidence supporting the model is strongest for youth presenting serious antisocial behavior and their families. The developers of MST operationalized treatment through adherence to nine core treatment principles that provide direction for treatment planning and implementation (Henggeler & Lee, 2003) (1) finding the fit, (2) positive and strength focused, (3) increasing responsibility, (4) present-focused, action-oriented, and well-defined, (5) targeting sequences, (6) developmentally appropriate interventions, (7) continuous effort, (8) accountability and evaluation, and (9) generalization.

The primary goal of MST is to help families develop the skills to effectively manage and resolve serious clinical problems that the youth may be experiencing. MST also strives to empower families to prevent potential problems that are likely to occur during the youth's adolescence. Therapists intervene at the family level to reduce conflict, improve communication, improve

family cohesion, and increase behavioral monitoring. MST therapists may also address peer-level factors that contribute to the youth's problems such as association with deviant peers and poor socialization skills. However, much of the therapist's attention is focused on helping the caregiver learn to manage the adolescent's interaction with his or her environment especially at school (Sheidow, Henggeler, & Schoenwald, 2003).

As an evidence-based model of treatment, MST has an extensive research foundation measuring outcomes in clinical trials and community settings. Findings from eight published studies composed of seven randomized clinical trials and one quasi-experimental design provide evidence that supports the effectiveness of MST. The first MST outcome study was quasi-experimental (Henggeler et al., 1986) and evaluated short-term effectiveness of MST with juvenile offenders. Findings indicated improved family relations, decreased youth behavior problems, and decreased youth association with deviant peers. Henggeler, Melton, and Smith (1992) found that when MST served as a community-based alternative to incarceration, at posttreatment MST was more effective at improving family and peer relations than the usual juvenile justice services. Studies have also indicated a substantial average net economic gain for MST as a result of reduced placement costs, criminal justice costs, and crime victim benefits according to the Washington State Institute for Public Policy (Aos, Phipps, Barnoski, & Lieb, 2001).

Ecologically Based Family Therapy (EBFT) is a multisystemic treatment model based upon the Homebuilders family preservation model that was started by clinical psychologists in 1974 (Slesnick & Prestopnik, 2005). The Homebuilders family preservation services are based on crisis intervention theory, which postulates that the most effective interventions are those that take place when families are faced with a crisis, such as child foster care or institutional placement (Kinney, Haapala, & Booth, 1991). EBFT adopts the same theoretical foundation of MST in addressing multiple ecological systems and was developed to work with substance-abusing

runaway youth and their families, a target group that was labeled as difficult to work with and engage in therapy.

The EBFT treatment manual (Slesnick, 2003) is divided into four sections or stages of therapy. The first is the engagement procedure utilized with these youth and families. The second one identifies intervention strategies and points out common themes to the therapy with runaway youth and families. The third section is composed of four individual sessions on HIV prevention with the runaway adolescent. The final section outlines the sequence of clinical tasks for the therapy sessions (Slesnick & Prestopnik, 2005). The model allows preliminary intervention in the form of individual sessions for the parents as well as for the adolescent alone. The aim of the former is introducing parenting-skills and reviving parents' belief in their ability of effectively monitoring the runaway adolescent through their newly learned skills and techniques. The latter targets several interpersonal factors that may be of relevance to the substance abuse or problem behavior (e.g., emotion regulation, decision making, etc.) (Slesnick & Prestopnik, 2004).

Functional Family Therapy (FFT) is a clinical model that has evolved over the last 30 years built on a foundation of integrated theory, clinical experience, and empirical evidence (Sexton, 2010). FFT is designed to treat at-risk youth ages 11–18 with a range of maladaptive behaviors including violence, substance use, risky sexual behavior, truancy, conduct disorder, and other externalizing disorders. The program also works as a preventive measure in diverting the path of at-risk adolescents away from the juvenile justice or mental health systems (Sexton, 2010; Sexton & Alexander, 2002b). The primary focus of treatment is on the family relational system, and the multiple perspectives within and around a family system (individual, family, and contextual/multisystemic). FFT ranges from 8 to 12 one-hour sessions for moderate cases and up to 30 sessions for more serious situations.

FFT consists of a set of guiding theoretical principles, a systematic therapeutic program based on change mechanisms used in a phased manner, multidomain clinical assessment and intervention techniques, an ongoing research program, and a systematic training, supervision, and implementation program. All of these influences converge to understand families, their clinical problems, their relational systems, and to target fundamental change mechanisms to produce positive outcomes (Sexton & Alexander, 2003).

Four theoretically integrated principles direct the change process (1) change is predicated upon fostering alliance-based motivation; (2) behavior change first requires meaning change, primarily through the relationally based process of reframing which includes validation and a reattribution of meaning; (3) behavioral change goals must be obtainable and appropriate for the culture, abilities, and living context of the family; and (4) intervention strategies match and respect the unique nature of each family. The FFT clinical model is a phase-based clinical change model consisting of three specific phases of therapeutic intervention: engagement and motivation, behavior change, and generalization. Each phase is marked by specific therapeutic goals and skills that increase the likelihood of success and also includes assessment components that enhance the therapist's ability to understand the family and intervene effectively. The specificity of the clinical "map" and the accompanying treatment manual requires therapists to be systematic and structured while simultaneously being relational and clinically responsive (Sexton, 2010; Sexton & Alexander, 2003).

Studies regarding treatment fidelity and the dissemination of treatment to therapists beyond the clinical research team demonstrate community effectiveness. Comparing FFT to probation services, Sexton and Turner (2010) found that FFT yielded a significant reduction in serious crimes 1 year after treatment, only when delivered by a model adherent therapist. Low-adherent therapists were significantly higher than control group in recidivism rates. This draws the attention to the importance of paying attention to therapists' training, supervision, and level of expertise when assessing outcomes and disseminating treatment in community settings.

Multidimensional Treatment Foster Care (MTFC), also known as Therapeutic Foster Care, was developed as a community-based treatment alternative to corrections facilities and group care for chronic juvenile offenders. This program places adolescent offenders with foster parents who have been specially trained to care for adolescents with emotional and behavioral problems (Chamberlain, 1998). Foster parents provide a therapeutic living environment with intense supervision, strict discipline, positive reinforcement for positive behaviors, and a supportive relationship. While originally developed for the treatment of antisocial disorder in the juvenile justice system, MTFC has been successfully adapted for use with adolescents referred to mental health and child welfare services (Smith, Stormshak, Chamberlain, & Bridges-Whaley, 2001).

Multidimensional Treatment Foster Care is grounded in social learning theory (Bandura, 1977) and assumes individuals learn behaviors through the context in which they live (Chamberlain, 1998; Chamberlain & Mihalic, 1998; Chamberlain & Smith, 2003). Adolescents with delinquency problems are assumed to come from homes in which ineffective parenting methods were routinely utilized with poor child behavior management and reinforcement of negative behaviors. In addition, adolescents are at the age where influence by other peers is paramount over adult influences. The traditional intervention for persistent adolescent delinquency has been residential group care in which adolescents are placed with other youth who have similar problems of delinquency (Elliott, 1998). However, it has been routinely found that adolescents who associate with delinquent peers tend to have higher rates of delinquency than adolescents who do not associate with delinquent peers (Dishion, McCord, & Poulin, 1999). As such, MTFC attempts to combat this negative peer association effect by separating adolescents from their delinquent peers.

Therapeutic foster parents are recruited from the community and trained in effective parent management skills to provide a structured and consistent therapeutic living environment (Chamberlain, 1998; Chamberlain & Mihalic, 1998; Chamberlain & Smith, 2003). Once the youth is placed with the foster family, foster parents attend weekly supervision meetings and participate in daily phone contact with the program supervisor. As a goal of the program is the reunification of the adolescent with their biological or adoptive family, the biological (or adoptive) parents also attend family therapy sessions where they are taught parent management skills for maintaining discipline and reinforcing positive behavior. The adolescents participate in home visits, which increase in frequency as the biological (or adoptive) parents learn new skills for behavior management methods. The adolescent also receives individual therapy. Placements are typically 6–9 months and most adolescents return to live with their parents following completion of the program.

## Critical Issues in the Adoption Evidence-Based Prevention and Treatment Programs for Adolescent Behavior Problems

Evidence-based practices have had an important impact on the development of prevention and treatment approaches, standards of practice, the delivery of clinical care, systems of care, and service delivery systems. Despite the great potential of evidenced-based practices, a number of critical issues remain. These issues are important in that they hinder the adoption of what might be the most useful practices for youth with behavior problems. Some of these issues feed skepticism while others are legitimate adaptation needed to the meaning and practice of EBT.

1. *Broadening the definition of "evidence."* It is becoming increasingly clear that the definition of "evidence" needs to expand beyond a counting of the number of outcome studies (Sexton & LaFollette, in press). Kazdin (1999) described criteria for evidence-based practices across four domains: theory relating the clinical problem to a hypothesized mechanism, basic research to assess the validity of the mechanism, preliminary outcome evidence to show that a therapeutic

approach produces relevant outcomes, and studies which display the relationship between process and clinical outcome (Kazdin, 1999). Clearly articulating and reaching consensus on the scope and nature of the evidence is necessary to support the development and identification of new evidence-based programs. As the need to expand the range of evidence-based practice increases, there will be pressure to strengthen the definition of evidence. Evidence-based practice must maintain high scientific standards of evidence defined by systematic efficacy and effectiveness studies conducted under conditions that ensure that programs demonstrate reliable changes sought by youth, communities, and providers.

2. *Disseminating information to communities.* Disseminating accurate and relevant information about evidence-based practices for access by communities, providers, and consumers remains a challenge. For example, in many settings evidence-based practices are still considered "cookie cutter" approaches developed by researchers in ways that remove the creativity and clinical responsiveness from prevention and treatment efforts. Even if a community does have accurate knowledge of evidence-based practice as a whole, many are not aware of the range and scope of available programs that may fit their unique community needs. Regardless of the form, their further adoption will depend upon the dissemination of accurate and easily accessible information.

3. *Recognizing issues in implementation.* The successful implementation of evidence-based practices into community-based social services is not determined solely by their availability (Segre, McCabe, Stasik, O'Hara, & Arndt, 2012). These interventions are challenging to apply in real-world settings that may differ substantially from the settings in which efficacy was initially established (Zazzali et al., 2008). It is only when successfully applied that evidence-based practices might begin to help stem the tide of youth mental health, violence, drug abuse, and at-risk behaviors that significantly impact youth, families, and the communities in which they live. A number of studies now suggest that evidence-based practices hold potential in the prevention and treat-

ment of youth behavior problems (Sexton & Turner, 2010). That potential can only be realized when the programs are implemented successfully in community settings.

There is growing interest in an emerging field of study, termed implementation science (Sorensen & Kosten, 2011). Implementation science is the study of the barriers and pathways to successful practice change. Unfortunately, we still know little about how the implementation process may affect service providers, and the organizations within which they work, as implementation often encompasses changes in organizational structure, process, and technology. Systemic and organizational barriers can also impede the successful implementation of evidence-based practices. Systemic barriers include funding streams that allow for prevention and treatment models to be carried out. For example, in the mental health setting, prevention interventions are often not fundable through traditional payment sources. Family-based intervention programs are often difficult to sustain because most mental health settings are focused around individual diagnostic criteria. In other settings, the very nature of the organization in which the program is to be implemented may not make the necessary changes in well-established service delivery systems needed to accommodate the program with fidelity. Organizational characteristics like climate and structure are also likely to impact dissemination and adoption of evidence-based practices (Aarons & Sawitzky, 2006). Finally, there is a need to strengthen the fit between the intervention model and characteristics of the clinical practice or organization. When a lack of fit is present, service providers may need to change aspects of their organization to accommodate the context of delivery (Zazzali et al., 2008).

Damschroder and colleagues (2009) suggested that six domains contribute to a positive implementation climate for evidence-based practices (1) tension for change: the degree to which stakeholders perceive the current situation as intolerable or needing change; (2) compatibility: the degree of tangible fit between meaning and values attached to the intervention by involved

individuals, how these align with individuals' own norms, values, and perceived risks and needs, and how the intervention fits with existing workflows and systems. The more individuals perceive alignment between the meaning they attach to the intervention and meaning communicated by upper management, the more effective implementation is likely to be; (3) relative priority: individuals' shared perception of the importance of the implementation within the organization; (4) organizational incentives and rewards: extrinsic incentives such as goal-sharing awards, performance reviews, promotions, and raises in salary, as well as less tangible incentives such as increased stature or respect; (5) goals and feedback: the degree to which goals are clearly communicated, acted upon, and fed back to staff and alignment of that feedback with goals; and (6) learning climate: a climate in which leaders express their own fallibility and need for team members' assistance and input, team members feel that they are essential, valued, and knowledgeable partners in the change process, individuals feel psychologically safe to try new methods, as well as sufficient time and space for reflective thinking. These interrelated practices and beliefs support and enable employee and organizational skill development, learning, and growth to maximize an organization's absorptive capacity for new knowledge and methods. Quantitative measurement instruments are available for measuring an organization's learning.

4. *Ensuring model fidelity*. It is also increasingly clear that treatment fidelity is a critical factor in the delivery of effective programs (Sexton & Alexander, 2002a). When transporting evidence-based practices to community settings, model adherence is critically important. The tight controls incorporated into clinical trial protocols are not practical in community settings. Despite its importance, there is a relative lack of research regarding the role of treatment adherence in successful community replications of efficacious EBPs. The limited range of model adherence studies (Barnoski, 2002; Hogue et al., 1998; Huey, Henggeler, Brondino, & Pickrel, 2000; Sexton & Alexander, 2002a), suggest that that complex,

manualized treatments can be implemented with a high degree of fidelity (Barnoski, 2004; Huey et al., 2000). These studies suggest that acceptable adherence levels require intensive adherence monitoring procedures (i.e., training and supervision of cases by model experts) and that therapist adherence predicted improvements in treatment and prevention outcomes. In a recent study investigating therapist adherence, it was found that therapist adherence to the EBP predicted longer-term positive outcomes for the youth. In addition, higher adherence also predicted greater long-term reductions in youth externalizing problems and criminal charges (Chapman & Schoenwald, 2011).

5. *Use ongoing quality improvement strategies*. It is clear that evidence-based practices, like other activities requiring adherence and competence in specific skill sets, requires systematic programs of ongoing quality improvement such as standardized training, performance measurement, measures of fidelity, regular feedback and consultation, etc. The concept of ongoing quality improvement as an integral part of a prevention or treatment model may be somewhat unusual in traditional practice, but it is important to identify when a program is not being implemented well at either an organizational or an individual level rather than to wait and find poor implementation and inadequate outcomes far down the road.

More attention also needs to be given to the role of clinical decision-making and clinically relevant feedback within evidence-based treatments. While many model developers may believe that their programs that include standardized training, consultation, and outcomes measurement may be sufficient for successful prevention and treatment, it is becoming clear that more timely and systematic clinically relevant feedback may be needed (Sexton et al., 2012). For example, Bickman (2008) suggests that prevention and treatment programs for youths are unlikely to improve without a system of measurement that is administered frequently, is concurrent with treatment, and provides feedback. Bickman and colleagues call this measurement feedback system (MFS) that includes systematic and ongoing

measurement of clinical processes (mediators), contexts (moderators), outcomes, and feedback to clinicians and supervisors.

Providing feedback on treatment processes and client outcomes is one approach to monitoring EBPs and facilitating effective practice in the community. In 2006, Bickman and colleagues (2008) began to design and implement a practical application of the Contextualized Feedback System (CFS), a model of guided clinician behavior change to enhance effective practice. Their intervention has four major components: organizational assessment, treatment progress measurement, feedback, and training. The treatment progress measurement includes assessment of therapy process (e.g., therapeutic alliance and treatment motivation) and assessment of clinical outcomes (i.e., life satisfaction, hope, symptoms, and functioning). Feedback reports summarize treatment measurement information and provide comparisons through data aggregated across clinicians, provider organizations, or types of treatment, and the reports provide suggestions for interventions and training (Higa-McMillan, Kimhan-Powell, Daleiden, & Muelller, 2011). This system has since come to be called the Contextualized Feedback System (CFS™). CFS is a web-based measurement feedback system that provides session by session clinical feedback to clinicians on youth treatment progress (e.g., symptoms and functioning) and treatment process (e.g., therapeutic alliance) intended to alert clinicians to youth or caregiver problems they may ignored or not have perceived, to assess client progress so as to inform client treatment plans and goals, and to enhance dialogue and guidance in clinical supervision. Using a flexible automated schedule, measures are typically administered on a weekly basis to clinicians, youth, and their caregivers. Resulting clinical feedback includes client and caregiver current scores, change since last administration, trends over time, and individual item alerts using computerized algorithms. All data are aggregated and provided in feedback reports at several user levels (e.g., supervisor, program, site, and agency) to inform

supervision and program planning (Riemer, Kelley, Casey, & Taylor-Haynes, 2012).

6. *Understanding the role of culture*. The cultural context into which evidence-based practices are implemented is critical if these programs are going to "fit" in community settings and ultimately be used and sustained. Typically, the 'cultural context' of a community refers to ethnic culture, and it is often proposed that strategies or interventions are tailored to match to ethnic minority populations (Nelson & Nelson, 2010). Because both the service users and service providers of evidence-based practices carry norms, beliefs, and values derived from their respective cultures, effective intervention may well require compatible norms, beliefs, and values, and an ability to understand, respect, and work with differences (Weisz, Sandler, Durlak, & Anton, 2005). Almost 85 % of the global population live outside of the USA and Europe, and the USA itself is changing to the point that by the year 2050 the number of US residents who self-identify as European American may fall below 50 % (Cardemil, Moreno, & Sanchez, 2011). Evidence-based practices must therefore consider diversity in evaluation and implementation. As quality assurance and feedback systems are developed, this aspect of culture should be a focal point in offering best practice to youth and their families. Just as quality assurance and feedback systems are developed to ensure clinicians offer a high level of treatment, theories behind the role of culture are developing to offer researchers and model developer's new ways to address the challenges experienced by adolescents and families within their communities.

Many prevention and treatment programs that adapt well to cultural variation include the following (1) incorporating the cultural values of the client into therapy, (2) matching clients with therapists of the same race/ethnicity who speak the same native language, (3) increasing accessibility of mental health interventions and systems and targeting clients' circumstances, and (4) cooperating with support resources available within clients' community, spiritual traditions, and extended family (Dunham, 2010).

## The Future of Evidence-Based Prevention and Treatment Programs

Evidence-based prevention and treatment programs have the potential to help providers, families, and communities address the significant issues related to adolescent behavior problems. These programs offer science that is reliable and valid, will facilitate positive outcomes, and bring important "maps" for clinicians to follow to help those in need. While a number of promising and evidence-based techniques, interventions, and treatment programs have been developed, tested, and implemented in community settings in the last decade, a number of important issues have emerged as significant for the future of evidence based practices. For example, despite the growth in programs, skepticism about the use of science, particularly as compared to clinical judgment remains. The very definition of EBP would suggest when "best" practice for the client is the primary goal both experience and science are necessary. However, it is quite difficult to give up on ones cherished believe in light of somewhat sterile and distant "research." It is also easy to discard science because even when there is a scientific foundation to a prevention or treatment program, evidence may vary and be limited in regard to whom and in what context the practice may work. In this case it is easy to "throw out the baby with the bathwater." Unfortunately, the evidence of EBP is not perfect and may vary in its quantity and quality. This does not mean it is not useful. While in many cases we still just do not know, in other areas we know that some practices simply do not work and result in iatrogenic effects, while others can be considered promising, and others reliably evidence based. Those with the most convincing evidence have contextual evidence that they work with various clients, in various settings, with a range of problems (Sexton et al., 2011).

Complex as it is, identification of EBP is only the first step. For practices to reach those in need, they must be implemented in community settings and delivered by community-based therapists.

The challenge of implementation is significant and the issues and successful mechanisms for success are just being discovered. We do know that organizations, interventionists, and client can make EBP difficult to individualize. We know that it takes more than just a model but ongoing quality improvement strategies, like measurement feedback systems, to further the effectiveness of EBP. Finally, we know that there is much more to learn. Systematic implementation of well-defined programs, with ongoing measurement and evaluation will help make each implementation a way to systematically gather the information necessary to take the understanding of what works from a nomothetic to an ideographic level of understanding. In the long run EBP must be seen as dynamic and iterative. What we know today will change and result in further modifications that move the practice forward. As a result, we should expect even the most well-developed programs to change, evolve, and grow along with the evolving knowledge that comes from scientific studies and clinical practice.

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# Part II

# Disorders

## Anxiety Disorders

Patricia A. Graczyk and Sucheta D. Connolly

## Anxiety Disorders in Adolescents: Theory, Treatment, and Prevention

Anxiety disorders represent the most common form of psychopathology in childhood and adolescence. In community studies including adolescents, approximately 4–19 % of young people were found to suffer from anxiety disorders (Costello & Angold, 1995; Ford, Goodman, & Meltzer, 2003; Shaffer et al., 1996), with lifetime prevalence rates estimated at 15–20 % (Beesdo, Knappe, & Pine, 2009). Anxiety disorders can significantly interfere with an adolescent's functioning in interpersonal relationships and school (Ezpeleta, Keeler, Erklani, Costello, & Angold, 2001), yet often go unrecognized by parents, primary care physicians, and school personnel.

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Anxiety disorders often co-occur with other anxiety disorders, depression, and disruptive behavior disorders (Ford et al., 2003). In addition, anxiety disorders in childhood increase risk of subsequent anxiety disorders, major depressive disorder, substance abuse, suicide, and psychiatric hospitalization in adolescence and young adulthood (Kim-Cohen et al., 2003; Schuckit & Hesselbrock, 1994). Fortunately, the past two decades has witnessed major advances in understanding the development, prevention, and treatment of anxiety disorders in youth.

For this chapter, we define adolescents as youths between the ages of 10 and 21 years of age. We start with an overview of the major anxiety disorders and their prevalence rates in adolescence. Risk and protective factors are discussed next. This discussion sets the stage for a review of treatment and preventative approaches for adolescent anxiety, with the cognitive-behavioral model and treatment described in detail. Finally, recommendations for best practices in the treatment and prevention of anxiety disorders in youth are specified.

## DSM-V and Incidence/ Prevalence Rates

The *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-V; American Psychiatric Association, 2013) provides a comprehensive categorical system for classifying

anxiety disorders. Each anxiety disorder has distinct features, but all share excessive, irrational fear that significantly interferes with daily functioning. A brief synopsis of each major anxiety disorder follows.

Generalized Anxiety Disorder (GAD) is characterized by chronic, excessive and uncontrollable worry. Worries may relate to friends, family, health, safety, and/or the future. At least one somatic symptom is present such as motor tension or restlessness. The overall lifetime prevalence rate of GAD for adolescents is estimated at 2.2 % and increases from 1 to 3 % during adolescence (Beesdo-Baum & Knappe, 2012).

Adolescents with Social Phobia (SocP) or Social Anxiety Disorder experience excessive fear or discomfort in social or performance situations. They fear negative evaluations from others and worry about doing something embarrassing or stupid in social settings such as classrooms, restaurants, or sports activities. It is estimated that lifetime prevalence rates of SocP for US adolescents is 8–10 % (Beesdo-Baum & Knappe, 2012).

Specific Phobia (SP) represents an intense fear of a particular object or situation and frequently is accompanied by avoidance of it. Compared to normal or developmentally appropriate fears, phobias are excessive and impairing. Lifetime prevalence of SP among US adolescents is estimated at approximately 19 %, with rates dropping from 22 to 18 % during adolescence (Beesdo-Baum & Knappe, 2012).

Approximately 2–3 % of adolescents suffer from Panic Disorder (PD) that involves recurrent and spontaneous attacks of intense fear (Beesdo-Baum & Knappe, 2012). Episodes are accompanied by at least four somatic symptoms such as sweating, shaking, breathing difficulties, or rapid heart rate. The onset of PD often occurs during adolescence.

Youth with Agoraphobia (Ag) avoid or are extremely uncomfortable in places they fear they will be unable to get help or escape. Ag may present independently or accompany PD. Common stressful situations include crowds, enclosed places, open spaces, and travel away from home. The lifetime prevalence rate of Ag for US adolescents is approximately 2.4 % (Beesdo-Baum & Knappe, 2012).

Youth with Separation Anxiety Disorder (SAD) experience developmentally excessive fear and distress concerning separation from home or significant attachment figures. Frequently these adolescents worry excessively about their parents' health and safety, have difficulty sleeping without their parents, complain of stomachaches and headaches, and may manifest school refusal behaviors. Although estimated lifetime prevalence rates of SAD for children and adolescents are around 8 %, SAD is rare in adolescence (Beesdo-Baum & Knappe, 2012).

The typical age of onset varies across the anxiety disorders and approximates the developmental progression of normal fears in childhood. SAD often presents at ages 6–9, GAD at any age but most often at ages 10–12, and social phobia at age 12 and older (Albano & Kendall, 2002). PD with or without Agoraphobia typically begins during late adolescence and young adulthood (American Psychiatric Association, 2013). Comorbidity with other anxiety disorders is the norm and the same individual may experience different anxiety disorders at different points in time (Last, Perrin, Hersen, & Kazdin, 1996).

## Risk and Protective Factors Associated with Anxiety Disorders

*Risk factors* place youth at increased risk of developing an anxiety disorder. *Protective factors* enhance an individual's resilience in the presence of risk factors or emergent pathological anxiety. Identification of such factors is important because it can inform treatment and prevention approaches. In this section, risk and protective factors for anxiety disorders are organized according to their reference to biological or genetic factors as well as characteristics of the individual, the family, or the broader social environment.

## Biological and Genetic Factors Influencing Risk and Resiliency

*Biological factors*. According to Beesdo et al. (2009) *gender* is the most robust risk factor for anxiety disorders, with all anxiety disorders

occurring in girls more than boys. By adolescence lifetime prevalence rates for any anxiety disorder is 38 % for girls and 26 % for boys. Point prevalence rates suggest that adolescent girls are 2–3 times more likely to suffer from an anxiety disorder than adolescent boys.

*Physiological reactivity* manifested as exaggerated startle response, cortisol reactivity, and a lower threshold of reactivity in the HPA axis also appears to be a biological risk factor for anxiety. Supportive evidence comes primarily from studies of neuroendocrine reactivity in clinic-referred children (e.g., Granger, Weisz, & Kauneckis, 1994) and studies comparing norepinephrine levels in behaviorally inhibited (BI) and non-BI children (Weems & Stickle, 2005).

*Genetic factors*. The temperamental characteristics of behavioral inhibition and the combination of neuroticism and low effortful control are considered genetic influences in the development of anxiety disorders (Eley, 2001). Behavioral inhibition (BI) refers to a tendency to respond negatively to new situations or stimuli and includes behaviors such as shyness, caution, and emotional restraint (Kagan, 1997). Youth with a BI temperament are four times more likely to develop an anxiety disorder, especially SocP (Beesdo et al., 2009; Blackford & Pine, 2012).

Lonigan and colleagues proposed that two temperament characteristics, high negative affect/ neuroticism (NA/N) and low effortful control (EC), place youth at increased risk for anxiety disorders (e.g., Lonigan, Vasey, Phillips, & Hazen, 2004). High NA/N can lead to maladaptive anxiety through its association with processing biases in favor of threat cues. When combined with low EC, a young person's risk for anxiety is heightened because he experiences greater anxiety and has difficulty regulating or managing it. High EC, on the other hand, can lower that risk to the extent that it diverts the youth's automatic focus on threat cues.

*Family genetics* are also implicated in the transmission of anxiety. Children who have one parent with an anxiety disorder are at two times greater risk of experiencing a significant anxiety disorder themselves, and at five times greater risk if both parents have anxiety disorders (Rapee, 2012). These findings are substantiated by family

aggregation studies and twin studies. Heritability estimates for anxiety range from 30 to 40 % with environment contributing to the remaining variance (Beesdo et al., 2009). Lastly, findings from neuroimaging studies suggest that *excessive amygdala activation* is an additional inherited risk factor for anxiety (Blackford & Pine, 2012).

## Individual Factors Influencing Risk and Resiliency

Behavioral and cognitive characteristics also have been identified as risk factors for anxiety disorders. These characteristics include maladaptive information processing and poor emotional regulation. To date, only one characteristic of the individual has been identified as a protective factor, i.e., problem-focused coping skills.

*Maladaptive information processing*. Maladaptive information processing refers to dysfunctional biases or processes relative to attention selectivity (i.e., what information is attended to), how information is interpreted or remembered, and/ or how judgments are made regarding how to behave in a particular situation. Of these processes, attentional biases have received the most attention to date and two, threat biases and anxiety sensitivity, have been identified as risk factors for anxiety.

When presented with a myriad of stimuli to attend to, youth at risk for anxiety manifest a proclivity to focus their attention on threatening stimuli in general (see Hadwin, Garner, & Perez-Olivas, 2006, for review) and also in ambiguous situations (Drake & Ginsburg, 2012). Threat biases are also highlighted in Lonigan's model (Lonigan et al., 2004).

Anxiety sensitivity (AS) refers to a tendency to believe that symptoms of anxiety will seriously harm oneself (Reiss, 1991). AS is implicated as a specific risk factor for panic attacks and panic disorder. Two studies provide support for the association between panic and AS in a community high school sample (Lau, Calamari, & Waraczynski, 1996) and in a clinical sample (Kearney, Albano, Eisen, Allan, & Barlow, 1997). Longitudinal investigations have provided evidence of a causal connection between AS and PD

for European-American, African-American, Hispanic, and Asian youth (Ginsburg & Drake, 2002; Weems, Hayward, Killen, & Taylor, 2002). Results from Noel and Francis' (2011) meta-analysis (MA) included significant correlations between AS and anxiety, with the association stronger for adolescents ($r=.36$) than children ($r=.26$), and for youth with anxiety disorders compared to controls ($d=.64$). When racial/ethnic group differences were investigated, the relationship between AS and panic were significantly stronger for European-American than Hispanic or Asian youth, even though the latter two groups reported more AS overall (Weems et al., 2002).

Other forms of biases and information processing differences have been investigated in clinically anxious children and in community samples with mixed results (Hadwin et al., 2006).

*Poor emotional regulation*. Emotional regulation (ER) is the process involved in being aware of one's emotional experience and the social context in which it is occurring, and then being able to modulate emotional expression to be appropriate for the context (Jacob, Thomassin, Morelen, & Suveg, 2011). Although emotional dysregulation is not unique to anxiety disorders, there are behaviors in which anxious youth engage that could be considered ineffective attempts to regulate negative emotions. These include attempts to suppress intrusive thoughts that cause anxiety, efforts to distract oneself to avoid dealing with emotionally charged experiences, and avoidance of anxiety-provoking situations altogether (Jacob et al., 2011). All three of these behaviors could be considered coping skills, the topic of the next section.

*Coping skills*. Youth respond to or cope with unpleasant experiences in a variety of ways that can influence the extent to which they experience anxiety, distress, and fear (Spence, 2001). Coping strategies can be categorized as emotion-focused, avoidant, or problem-focused (Donovan & Spence, 2000). *Emotion-focused strategies* target the level of distress and *avoidant strategies* emphasize efforts to escape or avoid the problem. In contrast, *problem-focused coping* refers to efforts to deal directly with a problem or mini-mize its effect (e.g., seeking information, positive self-talk, and doing something to change the situation that is creating stress). Several studies provide evidence of the benefits of problem-focused activities and the negative impact of emotion-focused and avoidant strategies for children and adolescents (for review see Donovan & Spence, 2000), although others note the benefits of being able to use coping strategies flexibly (e.g., Lewis, Byrd, & Ollendick, 2012).

## Family Factors Influencing Risk and Resiliency

Parental characteristics and parent–child interactions are family factors that have the greatest influence on the development of anxiety disorders in children. These factors include parental anxiety, the quality of the parent–child relationship, parenting behaviors, and parental modeling of anxious behaviors.

*Parental anxiety*. Parental anxiety has been associated with increased risk of anxiety disorders in offspring (Merikangas et al., 1998) and high levels of functional impairment in children and adolescents with anxiety disorders (Manassis & Hood, 1998). Donovan and Spence (2000) proposed that parental anxiety might serve as an indirect risk factor and that its effects are moderated or mediated by some other mechanisms. They propose that child temperament, such as BI discussed earlier, and parenting behaviors, discussed next, could be two such mechanisms that link parental anxiety to child anxiety.

*Attachment*. An insecure attachment has been proposed as one way that family processes contribute to the development and maintenance of anxiety disorders. Insecurely attached infants typically show anxious fearfulness in difficult situations because they doubt the availability of caregivers' assistance. Findings from a recent MA of 46 studies revealed an overall moderate relationship between insecure attachment and child anxiety, $r=0.30$, which is stronger in adolescence than in childhood, $rs=0.36$ and $0.22$,

respectively (Colonnesi et al., 2011). The link between insecure attachment and anxiety problems also appears stronger when a child is temperamentally predisposed to fearfulness and inhibition (Fox & Calkins, 1993).

Most of the research on attachment and anxiety has focused on the mother–child relationship. However, Bogels and Phares (2008) reviewed research on the role of fathers in childhood anxiety that suggests a secure father–infant relationship could serve as a *protective factor* in preventing the development of anxiety in their children. Through a father's efforts to promote independent behavior and his encouragement to approach new situations (instead of avoid them), children learn effective coping strategies in the face of potentially anxiety-provoking situations and gain confidence in their ability to manage stressful situations. Bogels and Phares (2008) noted that a father's positive involvement becomes even more important during his child's adolescent years.

*Parenting behavior.* Parenting behavior is implicated in the development and maintenance of anxiety disorders in children and adolescents. Parental overcontrol and overprotectiveness have been found to maintain and exacerbate child inhibition (see Bogels & Phares, 2008; Wood, McLeod, Sigman, Hwang, & Chu, 2003 for reviews) with parental overcontrol demonstrating the strongest relationship with child anxiety (Drake & Ginsburg, 2012). Rubin, Burgess, Kennedy, and Stewart (2003) have proposed that parents may inadvertently reinforce and encourage fearful children to avoid challenges by either excessively controlling their children's activities or solving their children's problems for them. Several observational studies confirm this hypothesis (Hudson & Rapee, 2001; Krohne & Hock, 1991; Rubin, Burgess, & Hastings, 2002).

The research on overprotective parenting is less clear at this time. Some findings suggest that anxious parents only display overprotective behavior within situations that are anxiety provoking (Turner, Beidel, Roberson-Nay, & Tervo, 2003). There also is preliminary evidence to suggest that parental overprotective behavior is more related to co-occurring behavioral problems in anxious youth than with the anxiety itself (Gere, Villabo, Torgersen, & Kendall, 2012).

Child anxiety also has been found to be positively correlated with parental rejecting behavior and negatively correlated with parental warmth and sensitivity, especially in reference to SocP (Dadds, Barrett, Rapee, & Ryan, 1996; Dumas, LaFrenier, & Serketich, 1995; Leib et al., 2000). Knappe, Beesdo-Baum, Fehm, Live, and Wittchen (2012) found that a combination of paternal rejection, lack of emotional support, and maternal overprotectiveness were closely related to Soc P for both adolescent girls and boys. However, paternal emotional warmth was more significantly related to Soc P for girls than for boys.

Modeling and vicarious learning of anxiety are two other processes in family interactions that may serve to increase anxious cognitions in children. For example, Gerull and Rapee (2002) found that children were less likely to approach a rubber snake if their mother expressed negative affect toward the snake compared to children whose mothers remained neutral. Still other studies have found that children with anxiety disorders were more likely to have parents model anxiety and/or reinforce avoidance compared to their nonanxious peers (e.g., Dadds & Roth, 2001; Wood et al., 2003). Finally, there is growing evidence that anxious children interpret ambiguous situations as threatening and prefer avoidant solutions to these situations just like their parents do (e.g., Barrett, Rapee, Dadds, & Ryan, 1996).

## Social and Community Factors Influencing Risk and Resiliency

Events that occur outside the home including problematic peer relationships, negative or traumatic life events, and community violence can place youth at increased risk for anxiety disorders. However, social support can come from multiple individuals within the youth's environment and buffer the effects of other risk factors that may be present.

*Problematic peer relationships.* Anxious youth are at greater risk of becoming actively rejected by their peers in the intermediate grades and beyond when withdrawn, inhibited, and submissive behaviors become viewed as deviant by their peers (e.g., Waas & Graczyk, 2000). In addition, youth with anxiety disorders appear prone to react to social situations with negative self-appraisals, social skill deficits, and high states of physiological arousal (Spence, Donovan, & Brechman-Toussaint, 2000). To determine whether difficulties in peer relationships serve as risk factors for anxiety or whether behavior displayed by anxious youth leads to peer problems results from prospective longitudinal studies are most revealing. Most of this work with adolescents has focused on the relationship between social anxiety and various dimensions of peer relations, particularly peer victimization. Results from these studies suggest that peer victimization and lower levels of peer acceptance predict social anxiety or social phobia (Siegel, La Greca, & Harrison, 2009; Teachman & Allen, 2007; Tillfors, Persson, Willen, & Burk, 2012).

*Negative life events.* Youth with mental health needs experience more negative, stressful, or traumatic life events than their healthy counterparts (Boer et al., 2002), and these events represent risk factors for anxiety disorder. Elevated rates of anxiety disorders have been found following natural disasters (Yule & Williams, 1990) and negative life events such as the death of a family member, divorce, or changes in school (Donovan & Spence, 2000). Anxious youth experience a higher number of adverse life events and chronic hardships prior to an episode of anxiety even when events were evaluated by independent raters (Allen, Rapee, & Sandberg, 2008) or compared with those experienced by nonanxious siblings in the same household (Boer et al., 2002). However, in a recent cross-sectional study involving African-American and Caucasian 11–14 year olds, negative life events were significantly associated with anxious symptoms for African-American males only (Lewis et al., 2012).

*Community violence.* Research investigating the relationships between adolescent anxiety disor-

ders and environmental factors is limited (Spence, 2001), but there is evidence to suggest that minority and economically disadvantaged youth may be at increased risk for anxiety disorders for a variety of reasons related to community violence. Minority and disadvantaged youth report decreased feelings of safety (Schwab-Stone et al., 1995) are exposed to high rates of community violence (e.g., Cooley, Turner, & Beidel, 1995) and are often victims of violence (Freeman, Mokros, & Poznanski, 1993). Violence exposure is consistently linked to symptoms of psychological trauma such as depression, anger, dissociation, anxiety, and posttraumatic stress (Singer, Anglin, Song, & Lunghofer, 1995), and minority urban youth exposed to violence in their community have been found to have elevated rates of PTSD (e.g., Berman, Kurtines, Silverman, & Sarafini, 1996).

*Social support.* Social support may serve as a protective factor for anxious youth despite the presence of risk factors. Social support refers to a person's beliefs about general or specific support that is available from members of their social network to shield him from negative circumstances and/or improve functioning (Demaray & Malecki, 2002). Multiple investigations provide evidence of the role of social support in promoting psychological and physical well-being (e.g., Levitt, Guacci-Franco, & Levitt, 1994) and shielding youth against psychological and physical adversity (e.g., Dubow, Edwards, & Ippolito, 1997). In an investigation involving a large community sample of children and adolescents, significant positive correlations were found between social support (provided by parents, teachers, classmates, and close friends) and social skills, emotional well-being, self-esteem, adaptive skills, and academic competence (Demaray, Malecki, Davison, Hodgson, & Rebus, 2005).

## Cognitive-Behavioral Model of Anxiety

Numerous theories have been proposed to explain the etiology and maintenance of anxiety disorders. This section focuses on the

cognitive-behavioral model because it serves as the foundation for the majority of treatment and preventive strategies with the most empirical support at this time.

According to Albano and Kendall (2002), anxiety within a cognitive-behavioral framework is viewed as either adaptive or maladaptive. *Adaptive* anxiety serves a protective function because it signals danger to an individual and motivates her to take action to avoid stress or negative experiences. It consists of three components: physiological, subjective or cognitive, and behavioral (Lang, 1968). The physiological component refers to autonomic nervous system activity that prepares an individual to respond to a threatening situation with "fight or flight" behavior. Such responses include increases in respiration rate, heart rate, and blood flow to the muscles that enable a person to respond quickly, if necessary. The cognitive component of anxiety refers to the selective and focused attention to threat cues and ways to protect oneself, especially through escape. Behavioral reactions are taken to avoid a negative event or encounter (e.g., running away). *Maladaptive a*nxiety also includes these three components, but develops in response to irrational or unrealistic fears and significantly compromises an individual's ability to function appropriately in circumstances perceived to be unsafe.

Cognitive-behavioral approaches target all three components of anxiety to help individuals perceive their world less from a "threat" template and more from a "coping" template (Kendall, Aschenbrand, & Hudson, 2003). CBT approaches also emphasize how maladaptive cognitions and behaviors are learned through person–environment interactions in which certain behaviors are reinforced, modeled, or both.

## Evidence-Based Treatment Interventions for Anxiety

Our review of treatment studies focuses primarily on controlled investigations that involved random assignment of participants to treatment and comparison conditions known as randomized control trials (RCTs) that include at least some

adolescent participants. In the following sections, treatment and prevention efforts will be classified into three categories: "what works," "what might work," and "what does not work." Interventions categorized under "what works" are those for which a minimum of three studies generated positive outcomes. Interventions categorized under "what might work" are based on solid theory and/ or resulted in positive outcomes in one or two studies. The category "what does not work" will include those treatment or prevention efforts for which three or more studies have failed to provide support for their efficacy at this time.

## What Treatments Work

Numerous studies provide support for the efficacy of behavioral therapies and cognitive-behavioral therapies for the treatment of anxiety disorders. In the following sections, each approach will be described, followed by summaries of supportive treatment outcome studies.

*Behavioral therapies*. Behavioral therapies are grounded in conditioning and learning models and have frequently served as the framework for interventions used to treat SP and SocP. Strategies generated from this perspective include contingency management, systematic desensitization, exposures, modeling, and social skills training, among others.

*Contingency management* involves the utilization of either positive consequences or punishments contingent on the young person's behavior such as providing praise to an adolescent with social phobia for having read aloud to a group of peers. *Systematic desensitization* refers to a counterconditioning technique in which a classically conditioned response, such as a fear of spiders, becomes unlearned through repeated pairings of spiders with a response that is incompatible with anxiety, such as deep muscle relaxation. During *exposure* activities, a youth is presented, i.e., "exposed" to feared stimuli systematically, moving from moderately to most feared, while she uses relaxation strategies to maintain a calm state. *Extinction*, or the elimination of anxiety as

a response to feared stimuli, requires lengthy exposures concurrent with an inability to escape or avoid the situation. Exposures can be conducted imaginally or in vivo (i.e., real life). When conducted in vivo, *modeling* is a critical component of the exposure process. Modeling can be provided in a variety of formats: live (e.g., by the therapist), through videotapes or films, with assistance in approaching the feared stimulus (i.e., participant modeling), or with prompts to display a modeled behavior without assistance (Ollendick & King, 1998).

Three RCTs demonstrated the efficacy of modeling, especially participant modeling in the treatment of SP (Bandura, Blanchard, & Ritter, 1969; Lewis, 1974; Ritter, 1968). Five RCTs have demonstrated the efficacy of in vivo exposures and systematic desensitization for the treatment of phobias when compared to wait-list controls or alternative treatments (Barabasz, 1973; Kondas, 1967; Mann & Rosenthal, 1969; Muris, Merckelbach, Holdrinet, & Sijsenaar, 1998; Ost, Svensson, Hellstrom, & Lindwall, 2001).

*Social skills training* is particularly helpful for youth with SocP because they often have significant social skills deficits (Beidel, Turner, & Tracy, 1999). Social skills training is often conducted in a group format and covers various skills including making eye contact, handling conflicts, conversational skills, assertion skills, giving corrective feedback, friendship skills, and group skills (Beidel, Turner, & Morris, 2000; Spence et al., 2000).

Beidel et al. (2000) developed *Social Effectiveness Therapy for Children* (SET-C), a multicomponent group treatment for social phobia. The treatment includes psychoeducation for the child and parents, social skills training, peer generalization activities, and individual in vivo exposures. SET-C was found superior to a nonspecific intervention, *Testbusters*, in reducing social fears and associated psychopathology, and in enhancing social skills and social interactions. Moreover, treatment effects were sustained up to 5 years later (Beidel, Turner, & Young, 2006). Recently Masia-Warner and colleagues have adapted SET-C to high school settings. Their program, *Skills for Social and Academic Success*

(SASS; Masia-Warner et al., 2005), has been shown to be superior to wait-list and attention control comparison groups in decreasing social anxiety with treatment gains sustained at 6-month follow-up (Masia-Warner et al., 2005; Masia-Warner, Fisher, Shrout, Snigdha, & Klein, 2007).

In summary, behavioral interventions have a relatively long history of demonstrated efficacy in the treatment of a variety of phobic conditions. Many of these strategies have been incorporated into cognitive-behavioral treatment protocols.

*Cognitive-behavioral therapies*. Over 50 studies have demonstrated the efficacy of CBT for the treatment of anxiety disorders in children and adolescence. CBT has been found efficacious whether treatment is provided individually or with parents, in a group, a clinic or in a school. Recent meta-analyses reveal moderate effect sizes for CBT as a treatment for anxiety disorders in youth, overall $ds = 0.61–0.66$ (Ishikawa, Okajima, Matsuoka, & Sakano, 2007; Reynolds, Wilson, Austin, & Hooper, 2012). CBT appears to be equally efficacious for boys as for girls and for African-American and Latino youth as for European-American youth (e.g., Pina, Silverman, Fuentes, Kurtines, & Weems, 2003; Southam-Gerow, Kendall, & Weersing, 2001).

Because CBT is well established as a treatment for anxiety, current research questions do not focus as much on *whether* CBT works, but rather *how* to tailor CBT to address more intransigent forms of anxiety disorders and to improve its accessibility so more young people in need of treatment receive it. Recent investigations are also focusing on feasibility issues in several ways. First, researchers are shaping treatment models to more accurately reflect contextual issues inherent in community settings such as schools. They are also investigating whether briefer or modular versions of CBT can result in positive outcomes commensurate with results from more traditional models. In addition, the last 7 years have witnessed the development of several computer-assisted CBT treatment delivery models.

Due to its foundational relevance to many treatment and prevention efforts, a brief overview of Kendall's (1994) *Coping Cat* treatment

protocol is presented next, followed by a summary of CBT treatment outcome studies, including the more recent adaptations of the model.

*Coping Cat. Coping Cat* was the first CBT protocol with demonstrated efficacy for the treatment of child and adolescent anxiety disorders (Kendall, 1994). The *Coping Cat* workbook (Kendall & Hedtke, 2006) is used with children ages 7–13 years and the *C.A.T. Project* (Kendall, Choudhury, Hudson, & Webb, 2002) for youth ages 14–17 years. The two differ in their use of age-appropriate pictures and examples. Both versions involve homework assignments, known as "Show that I can" or STIC tasks, to be completed in-between sessions to practice and solidify skills learned in sessions. Both protocols also are organized such that the first half of treatment involves educating youth about anxiety and teaching them somatic management and cognitive coping strategies. Newly learned knowledge and skills are then consolidated and used to develop a FEAR plan. FEAR is an acronym to remind anxious youth of the steps to take when feeling anxious. "F" refers to *f*rightened *f*eelings and reframes physical symptoms as signals that it's time to implement learned coping strategies. "E" prompts the young person to monitor anxious self-talk that could lead her to *e*xpect bad things to happen. "A" serves as a reminder to employ *a*ttitudes and *a*ctions to counter anxiety. "R" encourages the youth to reflect on *r*esults and *r*eward himself for his efforts to cope with anxiety. Once the FEAR plan is developed it is applied in graduated and controlled exposure activities, both in and outside of therapy sessions during the second half of treatment, until the youth is able to manage anxiety in response to her most feared or dreaded situations. In the final session of therapy, relapse prevention plans are made to help ensure generalization and maintenance of the skills learned in therapy.

There is considerable overlap between behavioral therapy and CBT. Whereas cognitive-behavioral therapies focus on changing dysfunctional thoughts directly, behavioral therapies aim to change behavior which in turn decreases distressing or dysfunctional thoughts and feelings (March & Albano, 2002).

The efficacy of cognitive-behavioral interventions for the treatment of anxiety has been supported by at least six different groups of researchers in four different countries. CBT has been found to be superior to a wait list or no treatment control group in multiple randomized studies involving children and adolescents (Barrett, 1998; Flannery-Schroeder & Kendall, 2000; Hayward et al., 2000; Kendall, 1994; Muris, Meesters, & van Melick, 2002; Spence et al., 2000). However, studies using no-treatment control groups do not provide information as to the *relative* superiority of CBT compared to other treatments. Last, Hansen, and Franco (1998) compared CBT to Educational Support (ES) in the treatment of school phobia in children and adolescents. Both treatments resulted in a decrease in anxious and depressed symptoms and were equally efficacious in improving school attendance. However, these findings were challenged on the premise that ES actually contained specific elements of CBT (Kendall, Hudson, Gosch, Flannery-Schroeder, & Suveg, 2008). To test this hypothesis Hudson and colleagues (Hudson et al., 2009) compared CBT to a group support and attention control group (GSA) that did *not* include any apparent CBT components. They found that CBT was superior to the GSA group with significantly fewer youth in the CBT group experiencing their principal anxiety diagnosis at 6-month follow-up. These results suggest that CBT is more efficacious than GSA in treating anxiety disorders in children and adolescents. Follow-up recovery rates suggest that treatment gains for CBT interventions can be sustained over time, even up to 7 years following treatment (Kendall, Safford, Flannery-Schroeder, & Webb, 2004).

Results from two recent meta-analyses indicate minimal to no additive treatment effects when comparing individual CBT with family CBT (Ishikawa et al., 2007; Reynolds et al., 2012). Breinholst, Esbjorn, Reinholdt-Dunne, and Stallard (2012) reviewed the extant literature and suggested several possible reasons for the apparent inconsistencies and overall small to nonsignificant additive findings in RCTs that compared family CBT to individual CBT. They noted that different treatments involved parents in different ways—sometimes as cotherapists

and at other times as clients. Breinholst and colleagues also concluded that studies did not systematically target the parental behaviors that are associated with child anxiety and instead could have been too inclusive of parental components, thus leading to what they called "treatment overload" (p. 422). Importantly, they also noted that most studies focused on child outcomes, not parental outcomes. Thus, it is still open to debate whether a lack of enhanced child outcomes is due to a lack of effects for parent involvement or a failure to change critical parental variables.

Other studies have compared the effectiveness of different delivery formats for CBT, including individual, group, family, and, most recently, modular, computerized, abbreviated, and intensive formats as well as parent-facilitated bibliotherapy. For the most part, the main effects for individual compared to group format are equivocal (Barrett, 1998; Cobham, Dadds, & Spence, 1998; Flannery-Schroeder & Kendall, 2000), with the exception of one study that found individual therapy superior to group in the treatment of socially anxious children (Manassis et al., 2002).

*Modular CBT approaches*. One alternative to traditional CBT involves modularization. Modular CBT approaches are intended to tailor treatment to individual needs yet maintain integrity to key elements of treatment. Chorpita (2007) identified what he refers to as the "Core Four" CBT procedures that serve as the foundation for his modular treatment approach: psychoeducation about anxiety and its treatment, the development of a hierarchical list of fears (i.e., a "fear ladder"), exposures, and education about maintaining newly learned coping skills and treatment gains. Additional modules are available if needed for low motivation, disruptive behavior, social skill deficits, depression or negative beliefs, or parental reinforcement of avoidance behavior. The intervention ends when therapeutic goals are attained rather than after a fixed number of sessions are completed.

Galla et al. (2012) also developed a modular treatment protocol for ages 7–12 that is designed to be implemented in schools. The protocol is an adaptation of their *Building Confidence* pro-

gram and contains several child and caregiver modules, along with one teacher and one school nurse module. Session order is not predetermined, but instead utilizes an algorithm adapted from Chorpita (2007) to focus initially on basic coping skills and then apply learned skills to exposures. Treatment ends when all anxiety problems have been reduced to nonsignificant levels. Research results indicated that both modular approaches lead to improved outcomes for treated youth up to 6–12 months after treatment (Chorpita, Taylor, Francis, Moffitt, & Austin, 2004; Galla et al., 2012).

Even greater flexibility in individualizing treatment was a goal of the modular treatment approach developed and investigated by Weisz et al. (2012). This transdiagnostic approach combines procedures from treatments for anxiety, depression, and conduct problems. When it was compared to standard manual treatment and usual care, results indicated that youth in the modular condition improved more quickly than those in the standard manual and usual care groups. Upon completion of treatment, youth in the modular group also had significantly fewer diagnoses than the usual care group. There also were no significant differences between the youth in the standard manual group and the usual care group. These results suggest that a modularized approach, combining commonly comorbid conditions, shows promise for youth suffering from anxiety disorders and co-occurring conditions.

*Computer-assisted CBT*. Several computer-assisted approaches have recently been developed to treat anxiety. Examples of computer-assisted treatment programs for anxious youth include *Camp Cope-A-Lot* (CCAL; Kendall & Khanna, 2008) for ages 7–12, the *BRAVE* for Children— *ONLINE* program (Spence, Holmes, March, & Lipp, 2006) for ages 7–12, *BRAVE for Teenagers—ONLINE* (Spence, Holmes, & Donovan, 2006) for ages 13–17, and *Cool Teens* (Wuthrich et al., 2012) for ages 14–16. Combined results for all four programs suggest that computer-assisted approaches are efficacious and outcomes are comparable to traditional CBT (e.g., Spence et al., 2011). Computer-assisted CBT holds immense promise and we anticipate

this format to be explored in greater depth in the years to come.

*Bibliotherapy*. Rapee and colleagues (Lyneham & Rapee, 2006; Rapee, Abbott, & Lyneham, 2006) have investigated the benefits of parent-facilitated bibliotherapy as a way to provide services to youth, especially those in under-resourced and rural communities. In their initial study, Rapee et al. (2006) compared a bibliotherapy version of CBT to an efficacious group CBT and waitlist conditions and found promising results compared to a wait list control condition. Lyneham and Rapee (2006) conducted a study with anxious youth who lived in remote and rural communities that compared parent-conducted bibliotherapy with varying degrees of therapist support: therapist-initiated phone contact, therapist-initiated e-mails, client-initiated contact, and a wait-list control group. Results suggest that parent-facilitated bibliotherapy with as little as weekly scheduled therapist-initiated contacts can result in outcomes similar to traditional CBT approaches, at least for children who live in rural or remote communities with limited resources.

*Condensed and intensive adaptations of CBT*. Recent efforts to adapt CBT have also focused on maximizing treatment effects and enhancing treatment feasibility by condensing interventions into a smaller number of sessions or within a shorter span of time. Such adaptations include a one-session treatment for SPs (Davis, Ollendick, & Ost, 2009), an intensive 8-day version of *Panic Control Treatment for Adolescents* (Angelosante, Pincus, Whitton, Cheron, & Pian, 2009), a 1-week summer camp treatment for girls with SAD (Santucci, Ehrenreich, Trosper, Bennett, & Pincus, 2009), and an 8-session Brief CBT (BCBT) version of *Coping Cat* (Crawley et al., 2013). Initial results for these treatment protocols are promising, but more research is needed to determine their efficacy and effectiveness.

Adaptations, such as modularization, computer-assisted, bibliotherapy, and shorter treatment protocols, are all adaptations to CBT that could fit into a *stepped care approach* for the treatment of anxiety. According to Salloum (2010), a stepped care approach might start with minimal therapist involvement as a first line of treatment. Only if initial efforts do not result in adequate outcomes would the therapist move into a more intensive treatment approach. A stepped care approach involves consideration of less intensive approaches such as parent-facilitated bibliotherapy or computer-assisted approaches before considering more traditional and intensive treatment protocols. Stepped care approaches are early in their development, but could potentially lead to more cost-effective and feasible approaches that ultimately help more youth in need of effective services actually access them.

## Treatments That Might Work

Three treatment approaches appear promising in the treatment of anxiety disorders in children and adolescents as evidenced by positive outcomes in at least one RCT. The treatments are: self-control training, educational support, and implicit theory manipulation. A description of each follows.

*Self-control training*. Self-control strategies (i.e., self-monitoring, self-evaluation, and self-reinforcement) are incorporated into most CBT protocols. Yet, Francis, Mezo, and Fung (2012) note that self-control strategies can be distinguished from cognitive-behavioral techniques in several ways including their foundation in self-control theory and the proposed mechanisms by which they incur change. Consequently, Francis and colleagues argue that self-control strategies should be considered as intervention strategies in their own right. We agree and briefly summarize results from two RCTs.

Graziano and Mooney (1980) compared self-control training in the treatment of nighttime fears to a wait-list control group. Treatment gains were maintained 2½–3 years later for most participants (Graziano & Mooney, 1982). Silverman, Kurtines, Ginsburg, Weems, Lumpkin, et al. (1999) compared exposure-based cognitive self-control (SC) to educational support (ES) and contingency management (CM) in the treatment of child and adolescent SP, SocP, and Ag. All three groups demonstrated gains across various

outcomes at the end of treatment and at 12-month follow-up. These results suggest that self-control training holds promise as a treatment for anxiety. However, its superiority to other treatments has not yet been established.

*Educational support (ES)*. Two studies (Last et al., 1998; Silverman, Kurtines, Ginsburg, Weems, Rabian, et al., 1999) found that treatment effects for educational support (ES) were comparable to those for CBT, contingency management, and self-control training in treating anxiety. In both studies, the ES condition utilized a group format and involved the sharing of information and discussions about anxiety disorders. Similarities between the two studies suggest several possible explanations for the efficacy of ES. First, participants in both studies rated ES as highly credible. Both studies also involved a therapist who provided nonspecific therapeutic interventions such as support, empathy, and warmth. These similarities suggest the possibility that credibility and/or nonspecific therapeutic factors might have contributed to the effectiveness of ES. However, as mentioned earlier, a third possible explanation for the success of ES is that psychoeducation is a major component of CBT approaches. Consequently the two studies could be viewed as "dismantling" studies for CBT in which the treatment package is compared to one or more of its parts to determine which specific components are driving treatment effects.

*Implicit Theory manipulation*. Dweck and colleagues (e.g., Dweck & Leggett, 1988) proposed that each of us has an implicit theory of intelligence, either an entity theory or an incremental theory, that directly influences our motivation and achievement. Entity theorists believe that intelligence is stable and unchanging so people's actions cannot improve their ability. Incremental theorists, on the other hand, believe that intellectual ability is malleable and can readily be changed. Cury, Elliot, Da Fonseca, and Moller (2006) tested this theory on normally developing adolescents and found that an implicit theory manipulation led to improved outcomes on an IQ measure. Da Fonseca and colleagues (Da Fonseca et al., 2008) then studied whether an implicit theory manipulation could influence the IQ test performance of adolescents with GAD. Participants in the experimental condition were provided directions which contained statements of the malleability of the ability involved in the task. The control group completed the same task but without the implicit theory manipulation. The experimental group obtained significantly higher scores on the intelligence measure and was less anxious than controls. These findings suggest that implicit theory manipulation holds promise as a strategy to address cognitive distortions in anxious youth. Nonetheless, further information is needed to determine whether its usage can be applied to other performance situations such as academic tasks.

## What Does Not Work

A review of the literature at this time did not identify any treatments that were studied in multiple RCTs and found to be ineffective treatments for anxiety disorders.

## Psychopharmacology and Anxiety

In the past two decades, there is a growing body of evidence supporting the efficacy of pharmacological treatment for youth anxiety disorders. Medication may be necessary to treat moderate-to-severe anxiety for several reasons: to reduce acute symptoms in a severely anxious adolescent, to address a partial response to CBT, to augment CBT outcomes, and to treat comorbid conditions (American Academy of Child and Adolescent Psychiatry, 2007; March, 2002). In addition, several studies have demonstrated the efficacy of a combination of CBT plus medication in the treatment of child and adolescent anxiety.

## Medications That Work in the Treatment of Anxiety Disorders

*Serotonin reuptake inhibitors (SSRIs)*. Numerous RCTs have established SSRIs (fluoxetine, sertraline, and fluvoxamine) as the medications

of choice for GAD, SAD, and SocP in adolescents. Paroxetine has shown short-term efficacy in an RCT for social phobia; however, there were significant adverse side effects (Peters & Connolly, 2012; Reinblatt & Riddle, 2007; Seidel & Walkup, 2006).

*Combined treatments*. The first study to compare monotherapies to combined treatments was the Child-Adolescent Anxiety Multimodal Study (CAMS; Walkup et al., 2008), a large multisite RCT. CAMS evaluated the relative and combined efficacy of CBT and SSRIs in youth with moderate–to-severe SAD, GAD and/or SocP. Youth participated in 14 sessions of CBT (*Coping Cat*), 12 weeks of sertraline or placebo drug alone, or a combination of sertraline and CBT. At posttreatment, CBT (60 % improved) and sertraline (55 % improved) reduced severity of anxiety superior to placebo (24 % improved), but the combination of CBT plus sertraline had a superior response rate (81 % improved). A smaller study compared the relative efficacy of fluoxetine, placebo drug, and SET-C (described earlier) for youth with SocP (Beidel et al., 2007). Both active treatments were superior to placebo and reduced social distress and behavioral avoidance, but SET-C also enhanced social competence through improved social skills. Bernstein et al. (2000) examined various treatments for school-refusing youth with comorbid anxiety and major depressive disorders. Imipramine+CBT were found to be superior to placebo+CBT. At 1-year FU, results indicated that symptoms persisted for those with comorbid disorders and severe impairment and more long-term treatment (both psychotherapy and pharmacological) was needed to maintain gains (Bernstein, Hektner, Borchardt, & McMillan, 2001).

## Medications That Might Work in the Treatment of Anxiety Disorders

The evidence to support the safety and efficacy of medications other than SSRIs for anxiety disorders in children and adolescents is not as strong. Venlafaxine, tricyclic antidepressants (TCAs), buspirone, and benzodiazepines have been used as clinical alternatives alone or in combination with the SSRIs. No controlled studies are currently available for medication treatment of PD in adolescents, but SSRIs appear to be promising in open clinical trials and a chart review.

*Noradrenergic antidepressants*. Two RCTs support the use of extended-release Venlafaxine (ER) for social phobia and GAD (March, Entusah, Rynn, Albano, & Tourian, 2007; Rynn, Riddle, Yeung, & Kunz, 2007). With careful monitoring, the noradrenergic antidepressant venlafaxine may be considered for treatment of anxiety disorders in adolescents after several SSRIs have failed.

*Tricyclic Antidepressants (TCAs)*. Controlled trials of TCAs (imipramine and clomipramine) for youths with anxiety disorders have demonstrated conflicting results. Side effects including cardiac issues and lethality in overdose limit the usefulness of TCAs in youth. TCAs may be considered if trials of several SSRI's and venlafaxine have failed; however, careful monitoring of cardiac status and blood levels is necessary (Peters & Connolly, 2012).

*Buspirone*. Buspirone has shown efficacy for GAD in adults; however, no RCTs currently support its efficacy for adolescents with anxiety disorders (Bristol-Meyers Squibb Company, 2010). Unlike the benzodiazepines, there is no risk of Buspirone dependence with long-term use. Buspirone may be tried when SSRIs and venlafaxine fail in youth with GAD or as an adjunct medication.

*Benzodiazepines*. Benzodiazepines (clonazepam and alprazolam) have shown equivocal results relative to placebo in RCTs for youth with anxiety disorders. They can be clinically useful as an adjunct short-term treatment to achieve acute reduction in severe anxiety symptoms while an SSRI is maximized and may reduce anxiety symptoms enough to permit initiation of the exposure phase of CBT (American Academy of Child and Adolescent Psychiatry, 2007; Peters & Connolly, 2012). However, benzodiazepines should be used cautiously because of side effects

and risk for physical and psychological dependence with prolonged use. They are contraindicated in youths with a history of substance abuse (Riddle et al., 1999). Due to potential harm to the fetus and nursing infant, benzodiazepines are not recommended in girls who are pregnant or breastfeeding. Withdrawal, especially if stopped abruptly, may be severe.

*Alpha 2 agonists*. A multisite, 12-week, RCT is currently underway to assess extended release guanfacine (1–6 mg/day) in youth with GAD, SAD, or SocP (Rynn, 2013) and may hold some promise for adolescents who may not tolerate or respond to current medications used for anxiety.

## Medications That Do Not Work in the Treatment of Anxiety Disorders

These medications did not meet criteria for three unsuccessful RCT trials, but clinicians are cautioned in the following ways:

- Paroxetine is not recommended as a first- or second-line treatment for childhood anxiety disorders due to concerns about increased adverse effects relative to other SSRIs (Peters & Connolly, 2012).
- Benzodiazepines are not recommended as a first-line monotherapy for long-term treatment of childhood anxiety disorders. Short-term use for severe anxiety or impairment as SSRI and other interventions take effect or short-term use related to brief medical or dental procedures may be helpful (Reinblatt & Riddle, 2007).

### Prevention of Anxiety

Primary prevention and health promotion encompass those planned actions that help participants prevent predictable problems, protect existing states of health and healthy functioning, and promote desired goals for a specified population. Prevention programs can be classified according to the population targeted for the preventive intervention (Institute of Medicine, 1994). *Universal* prevention activities are intended for all members of a general population. *Selective*

prevention activities target subgroups of a population who may be at above-average risk for developing a disorder. For example, youth at risk for anxiety disorders include those with anxious parents, temperaments characterized by BI or high NA/N low EC, and those exposed to traumatic or stress life events (Spence, 2001). *Indicated* prevention activities are designed for those individuals who are already demonstrating some characteristics of the disorder and are at enhanced risk of increased psychopathology.

Current evidence from multiple primary studies, narrative reviews, and meta-analyses (MAs) provide support for several interventions currently available that help prevent anxiety in school-aged youth. Most of these prevention efforts employ a CBT approach, take a developmental perspective, target decreases in anxious symptomatology as desired outcomes, and are implemented in schools. Major findings from these studies are reviewed, with particular emphasis on findings related to adolescents.

Neil and Christensen's MA (2009) of school-based prevention and early intervention programs found the majority of studies reported decreases in anxiety immediately following prevention efforts, at follow-up, or at multiple time points. For studies involving adolescents approximately 81 % found significant reductions in anxiety for the treatment group compared to controls, $d = .32$. For community-based interventions, Christensen and colleagues (Christensen, Pallister, Smale, Hickie, & Calear, 2010) found 60 % of studies of universal and selective anxiety prevention interventions resulted in significant decreases in anxious symptoms. All CBT interventions in their study resulted in positive outcomes.

Two other recent MAs of anxiety prevention efforts yielded relatively similar, significant overall findings. However, results of moderator analyses differed between the two. Fisak, Richard, and Mann (2011) targeted participants below the age of 18 and included both published and unpublished prevention studies. Overall effect sizes were small but significant. Moderator analyses revealed that interventions conducted by a mental health professional had a greater impact than those implemented by teachers (0.31 and 0.05,

respectively). The FRIENDS program yielded a larger effect size than other prevention efforts (0.25 and 0.11, respectively). No significant moderator effects were found for program duration, participant age, gender, or program type (universal compared to targeted).

Teubert and Pinquart (2011) targeted ages 3–18 and limited their MA to RCTs. Similar to Fisak et al. (2011) they investigated the impact of anxiety prevention efforts on anxious symptomatology and anxiety diagnoses. Results from this study yielded significant overall effect sizes. Contrary to Fisak et al.'s study, however, effect sizes were greater when samples included more boys than girls. The reasons for these inconsistent moderator findings between these two MAs are unclear, but could be related at least in part to differences in their inclusion criteria.

## What Works in Preventing Anxiety: Cognitive-Behavioral Approaches

As mentioned earlier, most of the interventions included in the MAs just described utilized CBT perspectives that yielded positive outcomes. Five such CBT programs will be described here. The first three, the *FRIENDS* program (Barrett, Lowry-Webster, & Holmes, 1999), *Cool Kids Program: School Version* (Mifsud & Rapee, 2005), and the *Coping and Promoting Strength Program* (CAPS; Ginsburg, 2009) are examples of group CBT approaches to the prevention of anxiety in school-aged youth. Both *FRIENDS* and *Cool Kids* also are variations of Kendall's (1994) *Coping Cat* program. *CAPS* is a relatively new selective prevention program noteworthy because of its unique focus on children who have parents with anxiety disorders. The two remaining programs, *MoodGYM* (Calear, Christensen, Mackinnon, Griffiths, & O'Kearney, 2009) and the *Penn Resiliency Program* (*PRP*; Gillham et al., 2006) primarily target the prevention of depression, but data are available to support their efficacy in decreasing anxiety as well.

*FRIENDS.* The *FRIENDS* program has been used as a universal, selective, and indicated prevention program in schools and clinics. It utilizes a group format and consists of 10 weekly sessions and two booster sessions, along with evening sessions for parents. There are two versions of *FRIENDS* that are relevant to adolescents. *FRIENDS for Life* is for children ages 8–11 years and *My Friends* for youth ages 12–15 years. *FRIENDS* has been used effectively with diverse groups of youth primarily in schools and community mental health settings in multiple countries. Topics include awareness of body cues, relaxation and deep breathing exercises, positive self-talk and self-reward, problem solving, exposures, and reward systems. *FRIENDS* also serves as an acronym to remind participants of the steps to take to manage their anxiety.

Lowry-Webster, Barrett, and Dadds (2001) investigated the *FRIENDS* program as a universal prevention program. Upon completion of the intervention phase both treatment and control groups showed significant decreases in self-reported anxiety and depression. However, when highly anxious participants (i.e., those who scored above the clinical cut-off) were compared between conditions, only the treatment group showed significant decreases in anxiety and depression at posttreatment. At 1-year FU 85 % of the treatment group and 31.2 % of the control who had originally scored above the clinical cut-off for anxiety and depression were diagnosis-free (Lowry-Webster, Barrett, & Lock, 2003).

Other studies have evaluated the effectiveness of the *FRIENDS* program in reducing anxiety in children with subclinical anxiety (an indicated group) or a diagnosed anxiety disorder. One school-based RCT demonstrated that for those children with an initial anxiety disorder, recovery rates at posttreatment were 67 % for the CBT plus parent training group, 79 % for the child-only CBT group, and 38 % for the no-treatment control group (Bernstein, Layne, Egan, & Tennison, 2005). Results were mixed when results for the two CBT conditions were compared.

More recently Stopa, Barrett, and Golingi (2010) investigated the efficacy of *FRIENDS* for students in Grades 5–7 from low socioeconomic communities with classroom teachers trained to deliver the intervention. From pre- to post-intervention participants experienced a significant drop in anxiety and depression that was sustained

at 12-month FU. This study did not involve a comparison group so results should be viewed as promising but preliminary for students from low SES backgrounds.

*Cool Kids*. The *Cool Kids* program consists of eight sessions and two parent information meetings. Like other CBT preventive interventions, *Cool Kids* includes psychoeducation about anxiety, cognitive strategies to challenge maladaptive thoughts and replace them with coping thoughts, and exposures to anxiety-provoking situations. It also includes a social skills component with an emphasis on assertiveness training and dealing with teasing.

Mifsud and Rapee (2005) studied the effectiveness of *Cool Kids* as a selective intervention for children from disadvantaged communities. Results indicated that children in the treatment group, compared to controls, had significantly fewer self- and teacher-reported symptoms of anxiety immediately following treatment and at 4-month follow-up.

*Coping and Promoting Strength (CAPS) Program.* As mentioned earlier *CAPS* is a selective program that targets children ages 7–12 whose parents have anxiety disorders. *CAPS* targets three child risk factors (anxiety symptoms, maladaptive thoughts, poor coping and problem-solving skills) and three parent/family risk factors (modeling of anxious behaviors, anxiety-enhancing parenting behaviors, and poor communication skills) by focusing on the following strategies: anxiety management, social engagement, cognitive restructuring, problem-solving skills, contingency management, and parental communication and problem-solving skills. The program consists of weekly 60-min sessions for 6–8 weeks and three monthly booster sessions. Only parents attend the first two sessions and then subsequent sessions can be attended by all interested family members.

In her initial RCT, Ginsburg (2009) found at 1-year FU 80 % of the control group met criteria for an anxiety disorder compared to 0 % in the *CAPS* group. The *CAPS* group also experienced a significant reduction over time in anxiety levels, whereas the control group did not.

*MoodGYM. MoodGYM* is an on-line CBT program originally designed to prevent and reduce depression. It consists of five modules that take approximately 20–40 min to complete. *MoodGYM* strategies include relaxation techniques, identifying trigger situations and problem solving, replacing maladaptive thoughts with coping thoughts, and ways to improve interpersonal relationships and self-esteem.

Calear et al. (2009) conducted an effectiveness RCT to investigate *MoodGYM*'s use at the universal level. The program was implemented by classroom teachers with weekly modules for 5 weeks. Immediately following the intervention and at 6-month FU, participants in the treatment condition reported significantly lower levels of anxiety than controls. The impact on depressive symptoms was not as strong and was limited to boys.

*Penn Resiliency Program (PRP).* The *PRP* is a selective depression prevention program that is school-based and targets intermediate grade and middle school students. It utilizes a group format and consists of two main components. The first is the CBT component that covers such topics as pessimistic and optimistic explanatory styles, maladaptive thoughts, and ways to put things in perspective. The second component focuses on social problem-solving skills such as brainstorming, decision making, and assertiveness. Within each lesson resiliency skills are taught and practiced. The *PRP* consists of 10–12 weekly sessions of 90-min duration with six group booster sessions. Recently a parent component has been developed. It consists of six 90-min group sessions that covers most of the content included in the child sessions and teaches parents how to model the targeted skills and support their children.

Gillham et al. (2006) conducted an efficacy RCT that targeted adolescents with high scores on measures of anxiety and depression and their parents. Immediately following the intervention no group differences were detected. However, *PRP* was found to significantly reduce both anxiety and depression at the 6- and 12-month FUs. In a second RCT, Gillham et al. (2012) first targeted youth with high scores on measures of

depression and then enrolled other students as space permitted. Participants were randomly assigned to one of three conditions: the *PRP for Adolescents* (*PRP-A*), *PRP* plus parent component (*PRP-AP*), or a usual care control group. No significant group differences were found between *PRP-A* and *PRP-AP*. Baseline levels of hopelessness were found to moderate treatment effects immediately following the intervention and at 6-month FU such that for youth with average to high levels of baseline hopelessness, both PRP-A and PRP-AP resulted in significant improvement in anxiety, depression, hopelessness, and active coping strategies compared to the control group.

In concert, these results suggest that CBT interventions can be beneficial in preventing anxiety disorders and that symptom reductions can be sustained even for youth demonstrating elevated levels of risk.

## What Might Work in the Prevention of Anxiety

Two prevention interventions have preliminary support for their efficacy in the prevention of anxiety: *Anxiety Sensitivity Education and Reduction Training* (*ASERT*; Schmidt et al., 2007) and *Interpersonal Psychotherapy-Adolescent Skill Training* (*IPS-AST*; Young et al., 2012). Although the latter program primarily target depression, data support its efficacy in reducing anxiety. These two programs are discussed next.

*Anxiety Sensitivity Education and Reduction Training (ASERT), formerly Anxiety Sensitivity Amelioration Training (ASAT). ASERT* and the earlier *ASAT* are brief selective interventions that target adolescents and young adults with high levels of anxiety sensitivity (AS), a known risk factor for PD and other anxiety disorders. Both interventions consist of audio–visual computer presentations followed by instruction on interoceptive exposures (i.e., exposures involving feared bodily sensations such as heart palpitations). Schmidt et al. (2007) compared *ASAT* to a health and nutrition presentation that

served as the control condition. Postintervention results indicated that the *ASAT* group experienced a significant decrease in AS compared to controls (30 % decrease compared to 17 % decrease) and less AS in response to a 20 % $CO_2$ challenge. At 1-year FU, there were no significant group differences in diagnoses, but by 2-year FU there were significantly more participants with a DSM diagnosis in the control condition than in the *ASAT* group. The authors concluded that overall results supported the promise of a brief computer-based program to decrease AS.

Keogh and Schmidt (2012) then compared *ASERT* to a physical health education training (PHET) that served as the control condition. Posttreatment results indicated that the *ASERT* group experienced a greater decrease in AS than the PHET group that was maintained at 6-month FU. Outcomes were not moderated by medication status, diagnostic status, or treatment integrity.

*Interpersonal Psychotherapy-Adolescent Skill Training (IPT-AST).* The IPT-AST is an indicated depression prevention program based on *Interpersonal Psychotherapy for Depressed Adolescents* (Mufson, Dorta, Moreau, & Weissman, 2004). IPT-AST targets interpersonal relationships and provides psychoeducation and skill-building activities. The program is delivered in a group format and consists of two 40-min pregroup meetings and eight 90-min weekly group sessions. Once participants master the targeted skills they are asked to use them with different people in their lives.

Young et al. (2012) compared the effectiveness of IPT-AST to school counseling. Adolescents who obtained elevated scores on measures of depression but did not meet criteria for a diagnosis of depression were randomly assigned to IPT-AST or the control condition. Immediately following the intervention, the IPT-AST group showed a significant reduction in depression and anxiety compared to controls that remained significant at 6-month FU. No significant group differences were found at 12-month follow-up. These results provide support for the

short-term benefits of IPT-AST in preventing anxiety. The long-term benefits of the program have yet to be established.

## What Does Not Work

A search of the research literature did not uncover a preventive intervention that met the criteria of three unsuccessful trials.

## Recommended Best Practices

Anxiety disorders represent a prevalent and significant form of psychopathology in youth that can significantly interfere with their current and future well-being and adjustment. Empirical studies support the efficacy of various treatment and preventative approaches and have demonstrated the promise of others.

- For the treatment and prevention of anxiety disorders, behavioral and cognitive-behavioral interventions have the most evidence in support of their effectiveness at this time and should be considered as frontline treatments for youth with anxiety disorders.
- SSRIs are the first-line medication for childhood anxiety disorders.
- Combining SSRIs with CBT has shown increased efficacy compared to either treatment alone for moderate-to-severe anxiety disorders.
- The U.S. Food and Drug Administration issued a black-box warning for increased risk of suicidal ideations with use of any antidepressant medication in pediatric populations. There is a favorable benefit/risk ratio for anxiety disorders, but clinicians need to monitor carefully for worsening depression, agitation, or suicidality, especially when initiating, discontinuing, or changing the medication dosing (Seidel & Walkup, 2006).
- Anxiety disorders often cooccur with other anxiety disorders, depression, and disruptive behavior disorders. Such comorbid disorders need to be identified and treated, along with the primary anxiety disorder. Several such transdiagnostic approaches to treatment and prevention have been developed and represent promising new additions to the field.

- Recent years also have seen the development of a variety of adaptations to CBT that mental health professionals can use to treat anxiety. Modular, computer-assisted, and short-term treatments are already available for use by mental health professionals. Additional intensive treatment options are currently undergoing efficacy and effectiveness trials. These adaptations expand the practitioners' options in tailoring treatments to the youth they serve.
- Practitioners might find a stepped-care approach to the treatment of youth anxiety a cost-effective and feasible way to ensure that more youth in need of services receive the level of care that they need.
- The role of parents in the treatment and prevention of anxiety disorders is still unclear. At this time parental involvement appears most beneficial for younger children and when parents are anxious themselves.

Finally, it is important to note that treatment and prevention interventions for anxiety disorders can only be successful if targeted youth are identified and provided access to the interventions. Thus, identification and accessibility remain two of the most pressing needs to be addressed in the future, especially for youth living in disadvantaged and resource-scarce communities.

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# Posttraumatic Stress Disorder

<div style="text-align:right">**8**</div>

Theresa Kruczek and Stephanie Vitanza

## Introduction

The idea that traumatic life events can lead to the development of reactive psychopathology is one of the earliest in psychology (e.g., Breuer & Freud, 1955). However, only recently have we begun to investigate the impact of traumatic life events on the development of posttraumatic reactions in children and adolescents (Davis & Siegel, 2000). A large-scale longitudinal study of youth from age 9–16 revealed that two-thirds reported at least one trauma exposure by age 16 (Copeland, Keeler, Angold, & Costello, 2007) and a subset of these youth will experience multiple traumas (Cohen, 2010). Further, there is a credible body of evidence demonstrating the adverse impact of trauma exposure on neurobiological development and long-term physical and mental health (Drury & Henry, 2012). Given the prevalence of child and adolescent trauma exposure and the potential for long-term negative outcomes on development and functioning,

it is important that we formulate models for primary prevention and health promotion that are grounded in available research.

Even though posttraumatic stress disorder (PTSD) first emerged as a diagnostic category in the third version of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-III*) (American Psychiatric Association, 1980), the diagnosis was not specifically applied to children and adolescents until the next revision (*DSM-III-R*, APA, 1987). *DSM IV-TR* (APA, 2000) estimates suggest that one-third to one-half of those exposed to a traumatic life event will go on to develop PTSD. A large-scale longitudinal study of youth revealed that 13.4 % of those exposed to trauma went on to develop PTSD symptoms (Copeland et al., 2007). Many of these teenagers experience comorbid depression, anxiety, substance abuse, disruptive behaviors, and suicide attempts (Abram et al., 2007; Jacobson, Muehlenkamp, Miller, & Turner, 2008). The *DSM IV-TR* (APA, 2000) clusters PTSD symptoms into three categories: (1) re-experiencing the trauma, which includes flashbacks, intrusive thoughts, nightmares, and an exaggerated startle response, (2) avoiding stimuli related to the trauma and numbing, which includes feeling detached or estranged from others and deriving significantly less pleasure from previously enjoyed activities, and (3) hyperarousal, which includes irritability, hypervigilance, sleep and concentration disturbance. Changes to the *DSM-V* (APA, 2013) diagnostic

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criteria have been fairly extensive. Criterion A is now more explicit in terms of what constitutes a "traumatic experience" and the subjective reaction component of this criterion has been eliminated. Further the avoidance cluster has been divided into two distinct clusters: avoidance and negative alterations in cognition and mood. PTSD is no longer be included as an anxiety disorder, but will be part of a separate category of trauma and stressor-related disorders and developmental adjustments have been made for children and adolescents by lowering the threshold for diagnosis. Finally new criteria have been added for children younger than 6 years old.

The symptoms of PTSD in adolescents are fairly consistent with adult symptomatology (Amaya-Jackson & March, 1995), although there is some suggestion that children and adolescents may alternate between periods of re-experiencing and avoidance/numbing symptoms (Cohen, 1998). When adolescents use avoidance and numbing to cope they may appear asymptomatic or their symptoms of PTSD may be masked (Cohen, 1998). Developmental adaptations have been recommended for the diagnosis of PTSD in children and adolescents including expansion of the types of trauma exposure relevant for this age group and a reduction in the total number of symptoms required for diagnosis (Scheeringa, Zeanah, & Cohen, 2011).

Theoretical models for the development of PTSD are grounded in stress reaction theory or as it is more popularly known the "fight or flight" response. Selye (1952) first developed the *general adaptation syndrome* to describe the human response to chronic stressors. Originally it was thought that the neurobiological and genetic factors underlying stress reactions were the same for adults, children, and teens. However, recent research has suggested the need for a developmental model of neurobiological response to trauma (DeBellis, Hooper, Spratt, & Wooley, 2009; Pervanidou, 2008). While there appear to be similarities in stress reactions across the life span there is emerging evidence that unlike their adult counterparts, children and teens experiencing traumatic events do not show elevations in sympathetic nervous system (SNS) activity,

and do show elevations in cortisol. Like adults, children also have elevations in pro-inflammatory cytokines such as interleukin (IL-6) which have been implicated in inflammatory and autoimmune diseases. It appears the combination of elevated serum cortisol and plasma IL-6 best predicts development of subsequent PTSD symptoms (Pervanidou, 2008). The lack of cortisol elevation seen in adults, but present in children may be due to dysregulation of the normal stress response resulting in chronic hyperarousal and activation of the limbic and sympathetic nervous systems (Charmandari, Tsigos, & Chorousos, 2005). Pervanidou (2008) suggests this dysregulation underlies the negative psychological, behavioral, and health sequelae of PTSD.

Miller and Veltkamp (1988, 1993 as described in Clark & Miller, 1998) have elaborated a specific Trauma Accommodation Syndrome for children and adolescents, to describe functional stages of adaptation to traumatic stressors. Stage I involves the adolescent's actual experience of the traumatic event. At Stage II the adolescent may have to deal with the aftermath of physical injuries sustained in the trauma and often experiences psychological fear, horror, and helplessness. The initial two stages, the actual trauma and the acute reaction to the trauma, are followed by a third stage characterized by a period of intrusive thoughts and feelings related to the trauma. This third stage often includes reenacting the trauma, having frightening dreams, avoiding activities related to the trauma, re-experiencing thoughts and feelings from the trauma, and displaying disorganized and/or agitated behavior. Stage IV heralds the beginning of successful accommodation. In this stage the adolescent uses cognitive reasoning to reevaluate both the original trauma and their subsequent re-experiencing of the trauma. It is at this stage that the adolescent may begin to mourn losses associated with the trauma and work to find meaning from the experience. The final stage (V) involves successful accommodation or resolution of the traumatic issues. By this stage the adolescent is using coping strategies to deal with the aftermath of the trauma and has integrated the traumatic experience within his or her overall life experience and identity.

Similarly, a five phase Child Sexual Abuse Accommodation Syndrome has been proposed to describe trauma adaptation specific to child sexual abuse (O'Donahue, Fanetti, & Elliott, 1998; Summit, 1983). These phases include secrecy, helplessness, accommodation, delayed disclosure, and retraction. During the accommodation phase the adolescent is most likely to suffer dissociative experiences and repress memories about the abuse, particularly if her/his disclosure is met with disbelief, rejection, continued abuse or threats of violence by the perpetrator. These adolescents are at significant risk for developing PTSD, and even personality changes, in reaction to the trauma of child sexual abuse (Briere, 1997).

The stress reaction of a given adolescent is moderated by many variables including the nature of the stressor and whether the stressor occurs as a single, acute event or as chronic, repeated events. Adolescents can be exposed to a wide variety of traumatic events including natural and technological disasters (e.g., earthquakes, hurricanes, ferry boat accidents), exposure to war, sexual and physical abuse or interpersonal violence, community violence, life-threatening illnesses and medical procedures (Pynoos, 1994). Additionally, Terr (1991) distinguishes between two types of traumatic events. Type I events are often a single traumatic experience that is short-term, unexpected, and more likely to result in a quick recovery. Type II events are either exposure to a series of traumatic events (e.g., a series of earthquakes) or are chronic and repetitive traumatic experiences (e.g., repeated sexual molestation). Type II trauma is more likely to result in more severe stress reactions and difficulty with adjustment. Certain Type I stressors can result in more severe stress reactions, particularly those resulting in loss of a significant other (e.g., death of a parent) or loss of function (e.g., loss of a limb or paralysis). The unique vulnerabilities in children and adolescents underlie the recommendation that diagnostic inclusion criteria for trauma exposure be expanded and adjusted for developmental differences (Scheeringa et al., 2011).

Exposure to any traumatic event can result in adverse stress reactions. Most adolescents can cope with these experiences provided they receive appropriate prevention and intervention. Primary prevention can be used to promote healthy functioning and prevent the development of PTSD in those youth experiencing traumatic life events. Most models of prevention typically consist of a multi-level approach to prevention. Bloom and Gullotta's (2003) definition of primary prevention will be used as a conceptual framework for the discussion of prevention programming in this chapter. When adapted to PTSD, this model emphasizes programming to help youth, their families, and communities prevent the predictable outcomes of trauma exposure. A primary goal of primary prevention in this context is to preserve existing health and functioning in trauma survivors and to promote psychological and social well-being in these youth. Further, this approach distinguishes between universal prevention that targets whole populations, selective prevention programming with those youth at risk for developing PTSD, and indicated prevention programming with very high-risk groups. This latter level of programming may include elements of prevention and treatment.

This model is consistent with Klingman's (2001) suggestion that a five-level model is relevant for PTSD prevention, particularly with traumatic exposure to natural and technological disasters. The first level of Klingman's model is a universal effort that involves working with youth, their families, and communities to develop disaster plans and to foster development of life skills to deal with traumatic events. His second two levels are selective efforts that occur after a collective traumatic event has occurred. The second level consists of traditional primary prevention programs provided to the general population following trauma exposure. These primary prevention efforts occur with youth (and their caregivers) who are not yet displaying coping difficulties and typically consist of psychoeducational programs, social support, and crisis coping skill development. The next level of selective effort follows mass screening of the general population designed to identify those adolescents with early signs of PTSD. Those adolescents identified as "at risk" receive proactive interventions

to minimize development of "full blown" PTSD symptoms. The final two levels of intervention occur with indicated groups. The fourth level involves providing more intensive and follow-up services to those identified as having gone on to develop PTSD. The purpose of this level is rapid intervention to contain and manage the PTSD symptoms as well as to provide support to these youth and their families. The fifth and final level of intervention occurs once the adolescent's PTSD symptoms have stabilized, in an attempt to prevent relapse and to promote healthy development in these youth.

## Individual Factors

Individual factors contributing to risk for PTSD include age (chronological and developmental at both the onset of the trauma and at the time of disclosure), gender, cognitive maturity, coping skills, attributional style, existing psychopathology, and social connectedness (O'Donahue et al., 1998). Research also stresses the importance of the child's attachment history, personality functioning, defenses, beliefs, values, and abilities (Courtois, 2003; Webster & Hackett, 2012). Research has linked the prevalence of posttraumatic stress symptoms (PSS), as well as other disorders such as substance abuse/dependence, depression, and anxiety in youth to both the severity and number of traumatic exposures (Bokszczanin, 2008; Cooley-Quille, Boyd, Frantz, & Walsh, 2001; Ghanizadeh & Tavassoli, 2007; Rowe, La Greca, & Alexandersson, 2010). Prior and subsequent life events, including repeated victimization, affect response to the trauma and the likelihood of the development of PTSD (Briggs et al., 2012; Courtois, 2003).

## Age and Developmental Factors

Research investigating the relationship between age at the time of trauma exposure and the development of PTSD is mixed. Some investigations have found that for children who experienced trauma before age 11 there was an increased risk

for the development of PTSD (Davidson & Smith, 1990; Eksi et al., 2007). Others, however, report no empirical support for age as a factor in predicting the development of PTSD (Foa, Keane, & Friedman, 2000; Garrison et al., 1995; Ghanizadeh & Tavassoli, 2007; Silverman & La Greca, 2002; Yule, Perrin, & Smith, 1999). In fact, some argue that age may be a protective factor in younger children as they may not have the depth of cognitive understanding and therefore may not be as impacted by a trauma as an older teen or adult, who can fully appreciate the danger of the circumstances (Davis & Siegel, 2000).

Most agree a youth's response to trauma and subsequent risk for development of PTSD is broadly related to how the youth perceives the trauma (Eksi et al., 2007; Pandit & Shah, 2000; Yule et al., 1999). The experience of subjective threat is a key element for development of PTSD and perceived threat is influenced by cognitive development and age (Yule et al., 1999). This perception of threat not only applies to the child's fear for his/herself, but also to perception of possible danger or fear for a parent's safety (Silverman & La Greca, 2002). Specifically, witnessing injury, death and/or suffering has been found to increase risk for the development of symptoms of PTSD (Eksi et al., 2007). Wraith (2000) and DiNicola (1996) describe how a child's developmental level can affect not only their reaction to the trauma, but the method of recovery and the subsequent adjustment or distress of the adolescent or child. Thus, age and developmental stage result in particular vulnerabilities. For example, preverbal children may exhibit regressive behaviors, fears, or increased attachment and the need to "play out" their anxiety (Scheeringa et al., 2011), while verbal children may demonstrate more avoidance, numbing, and detachment (Scheeringa et al., 2011), including demonstration of more fears, social anxiety, somatic complaints, isolation, and/or aggressive or regressive behaviors (Pynoos et al., 2009; Yasik, Saigh, Oberfield, Halamandaris, & Wasserstrum, 2012). Teens, on the other hand, mimic more adult responses and are likely to turn to peers, feign pseudomaturity as in seeking greater independence, or to "pretend it did not happen" (DiNicola, 1996;

Tyler, Hoyt, & Whitbeck, 2000; Pynoos et al., 2009; Wraith, 2000).

Empirical evidence further supports that a child or adolescent's cognitive appraisal of the traumatic event itself can result in a maladaptive or an adjusted response (Shaw, 2000; Silverman & La Greca, 2002; Stallard, 2000; Tolin & Foa, 2002; Udwin, Boyle, Yule, Bolton, & O'Ryan, 2000). Not only does the child's developmental level affect how PTSD symptoms may be manifest, but PTSD symptomatology may affect or disrupt a child's subsequent development, including formation of healthy attachments (Davis & Siegel, 2000; DiNicola, 1996; Webster & Hackett, 2012). The most common long-term effects of PTSD remain impairment in the areas of trust, intimacy, healthy relationships, self-esteem, and impulse control (Dube et al., 2005; Hall & Hall, 2011).

## Gender

Research consistently demonstrates that girls display more symptoms of anxiety, depression, and distress after experiencing a trauma than boys (Briggs et al., 2012; Elklit, 2002; Davis & Siegel, 2000; Foa et al., 2000; Moretti, Obsuth, Odgers, & Reebye, 2006; Pandit & Shah, 2000; Rowe et al., 2010; Silverman & La Greca, 2002; Weems et al., 2007; Yule et al., 1999). These gender differences occur regardless of type of exposure (Briggs et al., 2012). Norris, Foster, and Weisshar (2002) found that female's greater risk for the development of PTSD begins in childhood and continues through middle age. Tolin and Foa (2002) believe these gender differences may arise from several factors, including the type of trauma typically experienced by males and females (females are more likely to experience sexual assault, males physical assault) and gender differences in cognitive appraisal following the trauma. Female victims seem more likely than males to assign self-blame following trauma exposure and to subsequently evaluate the world as a more negative or dangerous place. Overall, most authors agree that continued research is needed to delineate further the specific nature of gender differences in the development of PTSD.

## Other Factors

Research also provides some evidence that higher levels of cognitive ability provide a protective buffer against the development of PTSD (Yule et al., 1999). Related research suggests that children with preexisting academic difficulties, behavior problems, and attention difficulties may be at greater risk for the development of PTSD symptomatology (Silverman & La Greca, 2002). Additional protective factors include a high level of self-esteem, good problem-solving, and communication skills, an internal locus of control, a history of adaptive coping, and family support and/or a connection with a positive adult (Clark & Miller, 1998; Silverman & La Greca, 2002).

Finally, recent research has begun to investigate the complex gene by environment interactions that promote risk and resiliency in children and teens exposed to trauma and maltreatment (e.g., Cicchetti and Rogosch 2007, 2012). This emerging research is investigating the relationship between individual factors related to resilience (i.e., capacity for self monitoring, regulating affect, adapting behavior, having positive self-esteem), social factors (i.e., family and peer relationships), and the neurobiological underpinnings (i.e., structural and neurobiological factors) of stress reactions. While these complex relationships are not yet fully understood, this emerging research will contribute to understanding the complexities of trauma reactions and is consistent with the bioecological model of trauma recently proposed by Hoffman and Kruczek (2011).

## Family Factors

Violence within the family is a frequent source of trauma for children. Children growing up in homes where there is domestic violence and high parental conflict are at greater risk for developing PTSD symptoms following subsequent trauma exposure (Bokszczanin, 2008; McCloskey & Walker, 2000; Margolin & Vickerman, 2011; Moretti et al., 2006; Wasserstein & La Greca, 1998). The effect of family violence on the

development of PTSD is moderated by whether the violence is witnessed versus experienced, involves a loss, and is based upon single vs. multiple trauma exposure (Margolin & Vickerman, 2011; Wasserstein & La Greca, 1998). Other family factors such as perceived lack of support, greater family conflict, and high levels of parental overprotectiveness are significantly related to the development of PTSD in children and adolescents (Bokszczanin, 2008).

Not surprisingly, children are less likely to develop PTSD following a trauma exposure when their family environment is characterized as stable, supportive, higher socioeconomic level, and psychologically healthy parents (Bokszczanin, 2008; Cicchetti & Rogosch, 2012). In fact, parental experiential avoidance and parental PTSD symptoms, along with poor family cohesion and parental monitoring predicted PTSD symptoms in adolescents (Polusny, Ries, Meis, DeGarmo, & McCormick-Deaton, 2011; Rowe et al., 2010). Similarly, poor affective responses and low levels of involvement in parents were linked to development of PTSD in adolescent survivors of cancer or disaster (Alderfer, Navsaria, & Kazak, 2009; Bokszczanin, 2008). Divorce and remarriage are considered specific risk factors for the development of sexual abuse (Davis & Siegel, 2000).

Perhaps the most important familial mediating factor is the parent's reaction to the traumatic event or disclosure (Davis & Siegel, 2000; Eksi et al., 2007; Silverman & La Greca, 2002). Research has long demonstrated that positive family support serves as a protective factor, while a lack of family or caregiver support often results in an increased risk for serious mental illness. Parental support is considered one of the most important buffers for traumatic events (Wasserstein & La Greca, 1998). Broader familial support is also important and can come from the youth's immediate family or a wider network of caregivers or supportive individuals, such as extended family or even foster parents (de Silva, 1999). Research has further demonstrated that a strong relationship with grandparents can serve as a mediator with regard to the development of PTSD symptomatology (Pandit & Shah, 2000).

## Social and Community Factors

For over 200 years PTSD symptoms have developed across cultures in individuals exposed to war, terrorism, or natural disasters. Thus, it is evident that the development of PTSD is not culturally limited (de Silva, 1999). Past studies have shown rates of PTSD ranging from 34.5 to 67 % in urban youth exposed to community violence (Horowitz, Weine, & Jekel, 1995). In more recent national sample of over 10,000 adolescents 5 % of those youth ages 13–18 years old had experienced PTSD at some point in their life (Hamblen & Barnett, 2012). These rates were found to be higher for adolescent females and to increase with age (Hamblen & Barnett, 2012). Horowitz et al. (1995) introduced the notion of compounded community trauma for some high-risk youth. These predominantly urban adolescents (and those living in war zones) experience multiple types of trauma exposure within their homes and communities. These youth have an increased risk for developing PTSD following specific traumatic events, given the overall pattern of violence exposure in their lives. Their risk is exacerbated by culture specific mechanisms of coping and poverty as discussed below. Community-based violence is known to have a negative effect on children and adolescents and can be considered a risk factor for the development of PTSD.

## Ethnicity

Rabalais, Ruggiero, and Scotti (2002) reviewed the literature investigating ethnicity as a risk and protective factor in children exposed to trauma. Their review revealed mixed results with regard to differences in PTSD symptomatology. However, they concluded that Hispanic American and African American youth were at higher risk for developing PTSD after experiencing a traumatic life event and that these groups might be less likely to demonstrate a decrease in PTSD symptoms over time as compared to their Caucasian counterparts. Their review suggested socioeconomic status and available social support

interacts with cultural customs and beliefs to influence the development of PTSD. That is, culture may be a specific risk factor when traumatized youth belong to an ethnic group that has been historically oppressed. Similarly, researchers have continued to link exposure to community and urban violence to later development of PTSD in African American adolescents (Hunter, Martens, & Belcher, 2011; Okundaye, 2004; Paxton, Robing, Shah, & Schoeny, 2004).

Additionally, as poverty is considered to be an even greater risk factor for child abuse than race, members of oppressed minority groups (e.g., African Americans, Hispanic Americans, Native Americans) may be at greater risk for the development of PTSD. Certainly prejudice and prior discrimination are risk factors. If the youth and their families experienced pre-disaster discrimination they may be less likely to seek support from "outsiders," particularly when those outsiders are from the majority culture (Rabalais et al., 2002). On the other hand, culture may serve as a protective factor in groups that emphasize extended kin networks, spirituality, and positive family relationships (Gonzales & Kim, 1997). There is some evidence that religion serves as a positive moderating variable (de Silva, 1999).

## Media

Finally, media exposure can have a negative influence on a child's adjustment to a natural disaster or traumatic life event. Repetitive media exposure can evoke powerful images for children and adolescents who may not have the skills to cope with or dismiss these images from their mind (Pandit & Shah, 2000). Investigations of media exposure to a variety of traumatic events ranging from natural disasters (Kiser, Heston, Hickerson, & Millsap, 1993) to terrorist attacks (e.g., Pfefferbaum, 2001; Saylor, Cowart, Lipovsky, Jackson, & Finch, 2003) have demonstrated the potential for PTSD symptoms to develop from this indirect mechanism of trauma exposure. Most startling is the finding that mere predictions of impending disaster can result in the development of mild, but prevalent symptoms

of PTSD (Kiser et al., 1993). In addition, Duarte et al. (2011) found that children and adolescents demonstrated more intensive use of media after a traumatic event (e.g., television, radio, print, and web use) and had increased risk for development of PTSD even if not directly exposed to the traumatic event. Contrary to popular thought, exposure to heroic images and positive role models did not moderate the adverse impact of media exposure (Saylor et al., 2003). Further, older youth and boys are likely to experience greater media exposure and concurrent PTSD symptoms related to this exposure (Saylor et al., 2003), making adolescent males the most vulnerable to this effect.

## Evidence-Based Treatment Interventions in Community Settings

To date there have been a host of meta-analytic studies reporting on the efficacy of treatment of PTSD in children and teens. These reviews have ranged from Silverman et al.'s (2008) broad review of the extant literature on psychosocial treatment of trauma to more focused reviews on specific approaches to treatment, types of trauma exposure, or intervention setting. Several issues remain when deriving guidelines for "best practices" because the majority of the existing research has tended to focus on wide age ranges and utilized varied research methodologies. Additionally, most studies are broadly designed and difficult to compare. In spite of these limitations, there is a fairly well articulated emerging body of research to guide interventions in the community setting. The effectiveness of a variety of approaches in community settings has been investigated and an increasing number have utilized Randomized Controlled Trials (RCT) and comparison control groups.

## What Works

Research examining the efficacy of individual therapy versus group therapy in the treatment

of PTSD in children and adolescents is sparse (Avinger & Jones, 2007). However, group interventions, as compared to individual treatment, seem to be preferred in community-based settings as they afford an opportunity to reach large adolescent populations (Avinger & Jones, 2007; Yule, 2001). Further, group interventions help combat the sense of isolation that often accompanies PTSD, especially in cases of abuse (Kruczek & Vitanza, 1999). The general efficacy of group therapy interventions in alleviating posttraumatic stress symptoms in response to crisis among adolescents has been demonstrated (Avinger & Jones, 2007) although the efficacy of group therapy in specific treatment contexts (i.e., sexual abuse) is less well substantiated (Harvey & Taylor, 2010).

*Cognitive-behavioral therapy (CBT).* In particular, Trauma-Focused-CBT (TF-CBT) is one of the most frequently researched treatment modalities for PTSD in youth and continues to be recommended when used alone or in combination with other approaches (Silverman et al., 2008). Dorsey, Briggs, and Woods (2011) published a review of the various approaches to CBT with traumatized children and adolescents. Trauma-focused cognitive-behavioral therapy (TF-CBT) commonly utilizes manualized treatment protocols which combine exposure to trauma-related stimuli, anxiety management, relaxation techniques, and cognitive restructuring related to the traumatic event. TF-CBT was originally developed for use with children ages 3–18 and caregivers, lasting approximately 12–18 sessions. TF-CBT protocols typically include individual sessions with the child, caregiver sessions with the adult and joint sessions (Cohen, Mannarino, & Deblinger, 2006). Research in community-based settings has consistently demonstrated a reduction of posttraumatic stress symptoms in children when using CBT (Cohen, Berliner, & March, 2000; Smith et al., 2007; Silverman et al., 2008). In addition, recent research suggested that almost half of the participants receiving prolonged exposure therapy (PE) experienced sudden gains in reducing PTSD symptoms immediately following treatment as well as at 3- and 12-month follow-up (Aderka, Appelbaum-Namdar, Shafran, & Gilboa-Schechtman, 2011).

Rolfsnes and Idsoe's (2011) meta-analysis of school-based interventions revealed overall medium to large effect sizes for school-based interventions in general. Further, 16 of the 19 studies they reviewed utilized CBT. Nine of the CBT interventions included adolescents and five focused specifically on adolescents. These results support the use of CBT with adolescents within the school setting. Harvey and Taylor's (2010) meta-analysis of outcome studies with children and teens experiencing child sexual abuse revealed that individual and group CBT reduced psychological distress, and PTSD symptoms, but not disruptive and sexual acting out behaviors. Further, the use of homework increased efficacy, particularly with regard to internalizing symptoms and general psychological distress. Group interventions were superior to individual in improving self-esteem. While these meta-analyses suggest TF-CBT is effective, it remains unclear which specific elements of TF-CBT are most strongly related to their efficacy. Therefore, no established guidelines currently exist with regards to the "dosage" and "frequency" of each technique needed or to what degree a traumatic event should be recapitulated in therapy in order to achieve the desired treatment effect (Cohen et al., 2000).

*Eye Movement Desensitization and Reprocessing (EMDR).* EMDR consists of a combination of cognitive therapy techniques and exposure techniques (Shapiro, 1996). This treatment approach involves having adolescents generate an image or memory associated with a traumatic event and simultaneously follows a therapist's hand with their eyes, with or without interpretations or verbal interventions being made by the therapist (Yule, 2001). Rodenburg, Benjamin, deRoos, Meijer, and Stams (2009) conducted a meta-analysis of seven RCT of EMDR with children and teens. Three of these studies used wait list control groups, two used treatment as usual (TAU) comparison groups, and two used a CBT comparison group. Their analysis suggested a medium effect size with slight, but significant incremental value of EMDR when compared to CBT. They found lower effect sizes for girls than boys in responsiveness to EMDR.

## What Might Work

In contrast to CBT, other treatments are not as frequently investigated using empirical methods. Consequently, there is not clear empirical evidence to support the use of these interventions. Therefore, the following interventions "might" be effective. Clear support for the use of *psychodynamic psychotherapy* in treating PTSD in adolescents is not available. However, one RCT comparing PE with Time Limited Dynamic Therapy (TLDT) suggested both interventions resulted in decreased symptoms of PTSD and depression, although greater gains were seen with PE (Gilboa-Schechtman et al., 2010). Additionally, case studies of abused children (i.e., McElroy & McElroy, 1989; Seinfeld, 1989; Van Leeuwen, 1988) also offer some support for the use of psychoanalytic therapy.

*Family therapy*. Family therapy treatment models have been proposed, and Harvey and Taylor (2010) suggested that family interventions were better than group interventions for reducing PTSD symptoms and improving trauma outcomes in children and teens who had experienced sexual abuse. Figley (1988) formulated a systematic therapy approach to treating traumatized families. A similar family crisis intervention model for addressing symptoms of posttraumatic stress was later developed by Harris (1991). Both treatment models share the following treatment objectives: building trust and rapport with the family, examining symptoms related to maladaptive family coping styles in response to the trauma, increasing familial communication and support, and formulating more adaptive coping strategies. However, the efficacy of these therapeutic approaches has not been thoroughly investigated (Riggs, 2000). It is important to note that many of the TF-CBT protocols include adjunctive parent and family components.

*Creative therapies*. Interventions that utilize art, drama, dance, music, or poetry have also been recommended for use with adolescents who have difficulty talking abstractly about their traumatic experiences (Avinger & Jones, 2007). There have

been two investigations of psychodrama groups. Adolescent participant's demonstrated a decrease in depressive symptoms and hostility in one study that utilized pre/post ratings (MacKay, Gold, & Gold, 1987). A RCT comparing a psychodrama group with an arts and craft activities group or wait list control suggested those participating in the psychodrama group demonstrated less anxiety, depression, and withdrawal as well as improved self-esteem than the two comparison groups on post test measures (Carbonell & Parteleno-Barehimi, 1999). Further research is needed to confirm the efficacy of creative arts treatments.

## What Does Not Work

Sufficient evidence does not currently exist to delineate which treatment interventions are not effective in community-based settings.

## Evidence-Based Treatment Interventions in Residential Settings

To date there has been very little research specifically assessing interventions for PTSD in residential treatment settings. Consequently, treatment recommendations for these settings are based primarily on theoretical models or extrapolated from the research in community settings. The few available studies involving adolescents in residential treatment settings are included in this review, as are interventions with incarcerated adolescents who have a history of trauma exposure.

## What Works

As the majority of studies examining the efficacy of interventions for PTSD in children and adolescents have been conducted in community settings, there is not sufficient empirical support for any particular intervention specifically applied within residential settings.

## What Might Work

A limited research base exists for PTSD interventions with adolescents in residential settings. Nevertheless, traumatized children and adolescents are frequently admitted to residential and inpatient psychiatric treatment facilities. Research on interventions for PTSD in these settings with adolescent survivors of sexual abuse consists of two studies. Kruczek and Vitanza (1999) used a combination of *CBT and creative arts therapies* with adolescent female sexual abuse survivors. Their brief therapy group in an inpatient psychiatric setting emphasized the development of adaptive skills for coping with the trauma. Their intervention targeted skills development in the following areas: normalizing the PTSD experience, increasing safety, managing internalizing and externalizing emotions, developing healthy self-esteem, fostering healthy relationships, and developing positive self-assertion skills. Group participants demonstrated improved adaptive functioning on completion of the brief therapy group. In a similar study, survivors demonstrated significant positive changes in coping skill mastery on completion of the group and showed an increase in functional behaviors at three-month follow-up (Kruczek & Watson, 1995).

Verleur, Hughes, and Dobkin de Rios (1986) implemented a *support group* that included elements of sex education. Participants in the group demonstrated improved self-esteem and sexual knowledge on post tests as compared to a matched control group. A more recent RCT compared adolescent's response to a *trauma-focused art therapy group* (TF-ART) vs. TAU on an inpatient unit (Lyshak-Stelzer, Singer, St. John, & Chemtob, 2007). The TF-ART sessions included 5–20 min of topic specific discussions followed by a longer period of art activities. Although participants in both groups showed post-treatment improvement in trauma symptoms, participants in the TF-ART group had significantly greater symptom reduction. Additionally, Hunter (2010) reported on *prolonged exposure* (PE) with two adolescent males with chronic PTSD who had been referred for residential sex offender treatment. Both adolescents had been diagnosed with

PTSD pre-treatment and no longer met criteria for the disorder following treatment.

Suggestions regarding what might work with this population can also be derived from theoretical literature and research findings with incarcerated youth with a history of trauma exposure. *Multimodal interventions* involving a combination of individual, group, and family therapy and psychopharmacology are often recommended when treating incarcerated youth (Arroyo, 2001). Individual treatments with this population may incorporate a combination of treatment interventions (i.e., CBT and psychodynamic therapy). A controlled study by Soberman, Greenwald, and Rule (2002) supported the efficacy of EMDR in reducing PTSD symptoms in boys and adolescents in residential or day treatment for conduct problems. *Group treatments* may also be appropriate for this population, especially in cases where many adolescents are exposed to a similar traumatic event (Arroyo, 2001). A preliminary investigation of a trauma-focused therapy group with incarcerated juvenile offenders resulted in the following therapeutic gains: increased awareness of the connection between trauma and aggression, better anger management, and a regulation of sleep disturbance. This intervention consisted of psychoeducation, verbal processing of the trauma, creative art expressions, and coping skill development (McMackin, Leisen, Sattler, Krinsley, & Riggs, 2002).

## What Does Not Work

The limited research available in this area does not yet indicate any specific intervention that is ineffective in residential treatment settings.

## Psychopharmacology and PTSD

There is limited empirical data to guide medication decisions with adolescent trauma survivors and limited data to support the use of medication as a first line treatment for PTSD (Drury & Henry, 2012; Keeshin & Strawn, 2012). To date, limited RCT have been conducted and those

conducted have been brief or had small sample sizes. There have been a few placebo control comparison studies and open trial (OT) studies. In OT everyone (adolescent, physician, and family) involved is aware of the medication being used. The problem with OT studies is that there is no way to distinguish between improvement due to the medication and improvement due to positive expectations because the adolescents are being treated with a psychoactive medication (the placebo effect). Other medication research has consisted of case studies and retrospective chart reviews. Rational pharmacotherapy (Friedman, 1990) typically guides medication interventions. Specifically, medication choice is derived logically and based on the known physiology of the disorder, the symptoms remediated by the drug, and comorbid psychiatric disorders (Drury & Henry, 2012; Keeshin & Strawn, 2012). In order to utilize a rational approach to pharmacotherapy for PTSD it is important to understand the neurobiology of PTSD.

Physiological stress reactions are grounded in the hypothalamic-pituitary-adrenal (HPA) axis, the locus ceruleus (LC), and the norepinephrine-sympathetic nervous system (NE-SNS). Increased activity in the LC increases adrenergic activity in those brain areas impacting memory, emotion, arousal, and attention, and this increased activity is thought to underlie the "fight or flight" response (Donnelly, Amaya-Jackson, & March, 1999). Further, the HPA axis also controls the endocrine systems which affect growth and puberty (Charmandari et al., 2005). The majority of the research on neurobiological and genetic factors has been conducted on adults and assumed to be applicable with children and teens. Recent research has suggested the need for a developmental model of the neurobiological response to trauma (DeBellis et al., 2009; Pervanidou, 2008). It is believed that long-term activation of the biological stress systems results in extended production of corticotropin-releasing hormone (CRH), cortisol, and catecholamines. The negative psychiatric and medical sequelae of trauma reactions are likely a result of dysregulation of the stress response which results in hyperarousal and chronic activation of the HPA axis and SNS (Charmandari et al., 2005).

Several neurotransmitters have been implicated in PTSD symptoms. The catecholamines [norepinephrine (NE), epinephrine (EPI), and dopamine DA)] show the most evidence of involvement in PTSD symptoms. Both adults and children with a trauma history have demonstrated elevations in DA and the severity of PTSD symptoms has been correlated positively with DA elevations (DeBellis & Thomas, 2003; Meiser-Stedman, Smith, Glucksman, Yule, & Dagleish, 2008). Studies have demonstrated that the genes involved in seratonin and dopamine regulation have the capacity for polymorphism or the ability to change due to environmental conditions (Koenen et al., 2011). As described above the adrenergic system, NE and EPI seem to play a key role in PTSD. Seratonin (5-HT) influences several mood regulation symptoms associated with PTSD including, anxiety, aggression, impulsivity, obsessive compulsive symptoms, and suicidality (Friedman, 1990).

## Antiadrenergic Agents

Those medications affecting the catecholamine system were the earliest investigated as treatments for PTSD in adolescents. Specifically, the antihypertensive medications (adrenergic agents) that were originally developed to treat high blood pressure have been used to remediate the physical symptoms of anxiety that are commonly part of PTSD. These medications include clonidine, guanfacine, propranolol, and prazosin. Several OT (i.e., Famularo, Kinscherff, & Fenton, 1988; Harmon & Riggs, 1996; Perry, 1994) and case studies (Horrigan, 1996; Strawn & Keeslin, 2001) have suggested their efficacy with children and adolescents.

## Anti-depressants

There have been two placebo/control, one RCT for the treatment of PTSD (Cohen, Mannarino, Perel, & Staron, 2007; Robb, Cueva, Sporn, Yang, & Vanderburg, 2010; Stoddard et al., 2011) and two OT studies of selective serotonin

reuptake inhibitors (SSRIs) (Seedat, Lockhat, Kaminer, Zungu-Dirwayi, & Stein, 2001; Seedat et al., 2002). The SSRIs include fluoxetine, sertraline, paroxetine, fluvoxamine, and citalopram. In two OT studies Seedat et al. (2001, 2002) found that PTSD symptoms decreased in children and adolescents treated with citalopram at a level comparable to adults. However, the three control group studies of sertraline did not support reduced PTSD symptoms when compared to placebo. Although this class of medications originally was seen as having a low risk of adverse side effects in the child, the possibility of an increased risk of suicide attempts and completed suicides in adolescents treated with SSRIs is a concern. The Food and Drug Administration (2003) issued a public health advisory urging caution when using these medications with at risk adolescents. Similarly, the United Kingdom's Medicines and Healthcare Products Regulatory Agency (MHRA) (2003) issued a precautionary statement about this class of medications and specifically banned the use of paroxetine with youth because of the greater risk for self-harm and potentially suicidal behavior.

Two other classes of anti-depressant medication, monoamine oxidase inhibitor (MAOI) and tricyclic anti-depressants (TCAs), act on both the adrenergic and seratonergic systems. There have been two RCT of the efficacy of one of the TCAs, imipramine. Robert, Blackeney, Villareal, Rosenbert, and Meyer (1999) investigated the development of PTSD symptoms in acutely burned children who were treated with imipramine versus chloral hydrate and in a follow up study Robert et al. (2008) compared imipramine vs. fluoxetine or placebo. Those children treated with imipramine vs. chloral hydrate were significantly less likely to develop PTSD symptoms. However, there was no difference in the imipramine vs. fluoxetine or placebo study. It is unclear how generalizable these findings are to adolescents who have experienced other types of trauma. Further, the side effects of these two classes of medication can be life threatening and so they are not typically recommended as a first line medication when treating PTSD in children and adolescents (Drury & Henry, 2012).

## Second Generation Antipsychotics

Antipsychotics (DA agents) also affect the catecholamine system and have been regularly used in the treatment of adult PTSD (Donnelly et al., 1999). The second generation antipsychotics (i.e., risperidone, olanzapine, clozapine, and quetiapine) are currently used because they have a lower risk of adverse side effects than their earlier counterparts (Friedman, 1998). To date there have been only chart reviews (Kant, Chalansani, Chengappa, & Dieringer, 2004) and case series investigations (Meighen, Hines, & Lagges, 2007; Stathis, Martin, & McKenna, 2005) of these medications. There is insufficient evidence at present to support use of these medications to treat PTSD symptoms alone; however, they may be useful in treating PTSD that is comorbid with psychosis, bipolar, or conduct disorder (Cohen, 2010). Further, caution should be exercised given the potential for significant weight gain (Kant et al., 2004) and increased risk of developing diabetes (Koller, Malozowski, & Doraiswamy, 2001).

## Mood Stabilizers

The mood stabilizers affect GABA receptors, another component of the fear and anxiety circuitry. One OT study has been conducted with carbamazepine (Loof, Grimley, Kuller, Martin, & Schonfield, 1995) and another chart review was conducted on divalproex sodium (Steiner et al., 2007) in the treatment of PTSD in youth. While the OT suggested positive response, the methodological rigor of these two studies is questionable and these medications are not currently recommended as first line treatments (Drury & Henry, 2012).

## The Prevention of PTSD

The best way to prevent PTSD is to prevent adolescents' exposure to traumatic life events. However, research suggests many children and adolescents are likely to experience trauma

(Margolin & Vickerman, 2011; Shaw, 2000; Yule, 2001). When adolescents are exposed to trauma, Klingman's (2001) five-level approach provides a useful conceptual framework to guide our work with these youth. The first three levels (the universal and selective efforts) typically occur as community-based interventions. The fourth level of intervention, with indicated groups, may be provided at community or residential treatment facilities, depending on the level of symptom severity displayed by the adolescent. The fifth level, again with an indicated group, is most likely to be provided in the community. It is important to note that progression through these levels of prevention and intervention does not always occur in a linear fashion. Adolescents with more severe PTSD may progress up and down through the levels as they encounter developmental and life experiences that precipitate a relapse of PTSD symptoms.

## What Works

There is very little empirical data to identify what works across all levels of prevention. However, there exists an emerging credible body of evidence to guide selective efforts with the general population of adolescents exposed to single incident trauma and those youth displaying early signs of PTSD (Kramer & Landolt, 2011). Kramer and Landolt's (2011) meta-analysis of seven outcome studies (4 RCT) suggested small effects on reduction of posttraumatic symptoms. This review recommended early prevention efforts should include components, of psychoeducation, individual coping skills, and possibly PE. Additional literature supports a course of psychoeducation and cognitive-behavioral therapy shortly after exposure (a few weeks to a month) (Briere & Scott, 2013; LaGreca & Silverman, 2009; McNally, Bryant, & Ehlers, 2003). Further, it may be possible to reduce posttraumatic symptoms by providing immediate assessment followed by referral and treatment of those individuals demonstrating acute stress disorder symptoms (Briere & Scott, 2013; Kramer & Landolt, 2011; McNally et al., 2003). More

intensive indicated interventions and follow-up services can be provided to those adolescents identified as meeting criteria for acute stress disorder and/or as displaying early symptoms of PTSD following trauma exposure.

## What Might Work

Another evidence informed (LaGreca & Silverman, 2009) form of potential prevention and support, called "*psychological first aid*" (PFA) (Amaya-Jackson & March, 1995) can be provided in an individual, family, or group context near or on the site that trauma occurred. PFA involves screening youth at risk, establishing teacher and parental support systems through psychoeducation for family members, and providing basic support such as safety and containment for youth. Youth with severe symptoms are then referred for more extensive treatment. Extensive PFA protocols have been developed by the National Child Traumatic a Stress Network (http://www.nctsn.org/) and recommended as an empirically informed approach for working with individuals across the life span (Vernberg et al., 2008). PFA is a supportive approach focused on making sure an individual's basic needs are met, insuring they feel supported and listened to, but not necessarily discussing the traumatic or distressing event (Bisson & Lewis, 2012; LaGreca & Silverman, 2009; McNally et al., 2003). The American Red Cross, the American Counseling Association, and the American Psychological Association promote the exclusive use of PFA versus CISD in disaster response and recovery efforts. Similarly, "defusing" is another brief (i.e., typically 20–30 min) intervention in which the focus is on empathic responding, support, and information/education (Briere & Scott, 2013); however, specific research is needed to determine the efficacy of defusing.

Finally, adjunctive, supportive *family therapy* has been recommended to provide support for caregivers by allowing them to develop the resources needed to remain calm and stable in order to minimize adolescent's posttraumatic stress responses (Eksi et al., 2007). Specific

recommendations include providing psychoeducation and skills training for parent's of traumatized youth in order to help these parents foster recovery and coping post-disaster/distressing events in all family members (Eksi et al., 2007; Polusny et al., 2011).

## What Does Not Work

Psychological debriefing was initially developed in response to military trauma (McNally et al., 2003) to alleviate potential psychological distress or development of posttraumatic symptoms related to exposure to distressing events as a result of their occupation (Choe, 2005). Jeffrey Mitchell developed Critical Incident Stress Debriefing (CISD) in 1983 as an intervention that would allow first responders, such as emergency medical personnel, to discuss their experiences without the assistance of a mental health professional (McNally et al., 2003). Currently, crises response and prevention, especially with regard to disaster or terrorism, is moving away from CISD because outcome studies have not demonstrated that CISD prevents PTSD in adults (Briere & Scott, 2013; McNally et al., 2003). For children and adolescents, the only outcome study to date was conducted with children and adolescents (ages 7–18) involved in traffic accidents and like their adult counterparts, CISD did not prevent the development of PTSD (Stallard et al., 2006). While Stallard et al. (2006) did not report any specific negative impact for the children and adolescents receiving this prevention strategy, concerns remain about the potential for "retraumatization" with CISD (Briere & Scott, 2013; LaGreca & Silverman, 2009). While most CISD participants report believing it has been helpful (Carlier, Voerman, & Gersons, 2000; Wethington et al., 2008), research conducted over the past five years has consistently demonstrated that these interventions do not prevent development of PTSD and may even exacerbate the individual's PTSD symptoms (Bryant & Harvey, 2000; LaGreca & Silverman, 2009; McNally et al., 2003).

## Conclusion: Recommendations for Best Practice

Even though continued research is needed to further validate specific methods of prevention programming and treatment of PTSD in adolescents, the current review suggests recommendations for best practice. In community settings, interventions offered in a group format are recommended as they allow clinicians to intervene with a large number of adolescents both at risk for development of PTSD and those with emerging or existing symptoms of PTSD. Group therapy can help combat the sense of isolation that often accompanies trauma recovery. Psychoeducational and support groups designed to help parents and teachers facilitate adaptive coping may also help prevent these youth from developing posttraumatic stress symptoms. Currently, psychoeducation and psychological first aid are considered empirically informed approaches to primary prevention of PTSD in adolescents with trauma exposure. CBT can also be used as a prevention aid in those adolescents demonstrating acute stress reactions. TF-CBT is the most extensively researched treatment for adolescents who have developed PTSD and who are being treated in community settings. TF-CBT is most often recommended as the treatment of choice for containing and managing symptoms of posttraumatic stress (Silverman et al., 2008); however, current evidence does not allow the authors to make suggestions regarding the "dosage" or "frequency" of individual CBT techniques such as exposure, relaxation, or cognitive restructuring. Again, there seems to be good support for providing CBT in either individual or group formats, and school-based CBT programs are effective. There is limited empirical evidence to support any specific interventions in residential settings. Therefore, it is difficult to derive conclusions for best practice in these settings. However, there is a theoretical consensus that interventions for these youth should combine cognitive behavioral, group, and family therapies, within the context of a safe and supportive milieu. Finally, while there is not support for medication interventions as a

first line of treatment for PTSD symptoms, some adolescents with comorbid symptoms of depression, anxiety, psychosis, or significant impulse control may need psychopharmacological treatment. Medication choice should be guided by comorbid psychiatric issues.

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# Attention-Deficit Hyperactivity Disorder

<div style="text-align:right">**9**</div>

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## Introduction

Attention-Deficit Hyperactivity Disorder (ADHD) is one of the most common disorders of childhood. It is characterized by two dimensions of behavior: inattention and hyperactivity–impulsivity. The presence of significant elevations on one dimension or both determine the subtype of ADHD. Individuals with six or more symptoms of hyperactivity–impulsivity and fewer than six symptoms of inattention meet partial criteria for ADHD, Hyperactive–Impulsive Type. Individuals with six or more symptoms of inattention but fewer than six symptoms of hyperactivity–impulsivity meet partial criteria for ADHD, Inattentive Type. Individuals with six or more symptoms of both dimensions meet criteria for

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ADHD, Combined Type (American Psychiatric Association, 2000). In order to meet criteria for ADHD, it is also necessary to demonstrate that symptoms contribute to significant impairment in one or more domains, including social and academic or occupational and that there are impairments in multiple settings (home, school or work, and peer-related activities).

ADHD typically begins in early childhood but often persists into adolescence and adulthood. Research has demonstrated that hyperactive symptoms generally decrease with age, and that inattentive symptoms persist, and may even increase, across age (DuPaul, Power, Anastopoulos, & Reid, 1998; Monuteaux, Mick, Faraone, & Biederman, 2010). In adolescence, impairments due to inattention and impulsivity are particularly salient. Although the combined subtype of ADHD is most prevalent in childhood, the inattentive type is most common in adolescence (Hurtig et al., 2007).

The majority of the treatments for ADHD have been developed for elementary school children, the age when ADHD is most often first diagnosed. Research in adolescence is much less developed than it is for younger children. Furthermore, fewer interventions have been developed to target the functional challenges adolescents with ADHD often face. Now that the evidence has clearly indicated that ADHD persists into adolescence and adulthood, researchers have begun to fill this gap, investigating ADHD

in adolescence and developing or adapting interventions to be used with teenagers with ADHD.

In this entry, we review the research on adolescents with ADHD. We evaluate the intervention research to differentiate effective, promising, and non-effective approaches. Further, we identify promising approaches to preventing the emergence of significant functional impairments among adolescents with ADHD.

## DSM-V and Incidence/Prevalence Rates

Changes in the diagnostic criteria for ADHD proposed by DSM-V are relatively subtle but significant, especially for the assessment of ADHD among adolescents and adults. First, the description of many of the ADHD symptoms has been modified to include examples that are relevant for adolescents and adults. For example, the symptom "often runs about or climbs in situations where it is inappropriate" has been modified to stipulate that for adolescents the behavior "may be limited to feeling restless." Second, the age of onset of the disorder has been proposed as 12 years, instead of 7 years, which had been stipulated in the DSM-IV. This change accounts for elevations in inattention and/or hyperactivity–impulsivity that sometimes occur later in childhood and may not become significant and impairing until the middle school years (Willcutt et al., 2012).

The prevalence of ADHD varies according to developmental level. Among elementary-age children, the prevalence is estimated to be about 8 % (American Academy of Pediatrics [AAP], 2011). The disorder is more prevalent among boys than girls with estimates of the gender ratio varying from 2:1 to 6:1 depending on whether estimates are based on community versus clinical samples. The disorder is chronic in nature, and it has been estimated that about 75 % of children with ADHD continue to have the disorder into their teenage years (Barkley, 2006), although a higher rate of youth continue to have some residual symptoms that could be somewhat problematic. ADHD often occurs along with other mental health conditions, the most common including oppositional defiant disorder, conduct disorder, anxiety disorders, and mood disorders. About 25 % of clinic-referred youth with ADHD demonstrate serious conduct problems, with somewhat higher rates for boys than girls. The risk of substance abuse among youth with ADHD is elevated among those who exhibit serious conduct problems by adolescence (Molina, 2011).

## Biological/Genetic Factors

ADHD is a neurodevelopmental, neurobehavioral disorder. These descriptors emphasize the neurological basis of ADHD. The former emphasizes the fact that the symptoms of ADHD are displayed differently across the course of development, whereas the latter term refers to the fact that the symptoms of ADHD are primarily manifested as variations from typical behavior. Research has repeatedly found brain differences associated with ADHD.

Following Barkley's (2006) theory that executive functioning deficits underlie ADHD, many researchers have looked at areas of the brain associated with executive functioning, which refers to a set of brain processes that enable individuals to organize thoughts and activities, prioritize tasks, manage time efficiently, and make decisions. Castellanos, Sonuga-Barke, Milham, and Tannock (2006) have proposed that both "cool" executive functioning and "hot" executive functioning deficits may be associated with ADHD. Cool executive functioning deficits refer to those that are evident when children are completing a quiet, perhaps boring, task; whereas hot executive functioning deficits are those that are evident during completion of an emotionally exciting task.

Studies of children with ADHD have also found differences in corticostriatal loops that are related to reward processing, motivation, and learning (Kohls, Herpertz-Dahlmann, & Konrad, 2009). Adolescents with ADHD have also been found to have significant reductions in white matter relative to typically developing controls (Castellanos et al., 2002). More recently, studies in adolescents have found that ADHD is associated with less efficient connections between parts of the brain (Konrad & Eickhoff, 2010). Some

researchers have hypothesized that decreased efficiency of connections in the brains of youth with ADHD may be associated with a loss of long-range connections between distant sections of the brain (Wang et al., 2009).

Research has also found evidence that brain differences are associated with greater persistence of ADHD symptoms into adolescence and adulthood. For example, Schulz, Newcorn, Fan, Tang, and Halperin (2005) found that persistence of ADHD into adolescence after initial diagnosis during early childhood was associated with greater activation of the ventrolateral prefrontal cortex, an area of the brain associated with executive function. One study (Hermens, Kohn, Clarke, Gordon, & Williams, 2005) found differences in brain activation between adolescent boys and girls with ADHD, suggesting that different brain mechanisms may underlie the expression of ADHD symptoms in girls than boys.

ADHD is increasingly understood to have a remarkably complex etiology. Genetics research has found that there is a genetic contribution to this disorder. Greater risk for ADHD has been reported among first and second degree family members of individuals with ADHD. Further, a higher risk for ADHD has been reported in biological parents, but not in adoptive parents, of individuals with ADHD (Sprich, Biederman, Crawford, Mundy, & Faraone, 2000). Twin studies have provided estimates of heritability, which is the proportion of a trait that can be accounted for by genetic factors. In younger cohorts (2 years of age or less) the heritability of ADHD has been estimated to be 76 %, whereas lower rates, around 30 %, have been reported in older cohorts (Ehringer, Rhee, Young, Corley, & Hewitt, 2006; Price et al., 2005; Schultz, Rabi, Faraone, Kremen, & Lyons, 2006).

Family studies suggest that genetic influences related to ADHD are less important in cases that remit before adolescence compared to persistent cases (Faraone, 2000). Twin studies also indicate that hyperactive symptoms are more stable in early and middle childhood, whereas attention problems are more stable in late childhood and adolescence (Larsson, Larsson, & Lichtenstein, 2004). These results highlight the importance of genetically influenced developmental changes in ADHD symptoms from childhood to adolescence.

Research to date has failed to identify a specific gene or set of genes associated with ADHD. Instead, the research evidence suggests that several distinct clusters of genes may underlie the development of ADHD, and clusters of genes may differ across families (Elia et al., 2010). Furthermore, research suggests that several identifiable environmental factors mediate the expression of these genes in such a way as to increase the severity of clinical symptoms among susceptible individuals (Seeger, Schloss, Schmidt, Rüter-Jungfleisch, & Henn, 2004).

## Individual Factors Influencing Risk and Resiliency

Various factors, including childhood severity of ADHD and psychiatric comorbidity have been found to predict persistence of ADHD into adolescence among clinic-referred children (Biederman & Faraone, 2002). Children in a community sample who had major depressive disorder or oppositional defiant disorder were more likely than children without these disorders to meet criteria for ADHD when they became adolescents. The presence of specific inattentive symptoms in childhood (e.g., being forgetful, losing things, difficulty following instructions, difficulty organizing tasks, avoiding tasks) was also associated with the persistence of ADHD into adolescence (Biederman et al., 1996). Although ADHD is more common in boys than in girls, findings regarding its persistence were similar for both boys and girls (Hurtig et al., 2007).

Research has shown that ADHD subtype often changes from childhood to adolescence (Hurtig et al., 2007). Children who met criteria for the combined subtype of ADHD in childhood most often meet criteria for the inattentive subtype in adolescence. Individuals who continue to meet criteria for the combined subtype in adolescence are more likely to have comorbid oppositional defiant disorder or conduct disorder than

adolescents with other subtypes of ADHD. Females with ADHD and anxiety in childhood appear to be more likely to have a comorbid anxiety disorder in adolescence, whereas the presence of a childhood anxiety disorder in boys with ADHD did not predict the presence of an anxiety disorder in adolescence.

A number of individual factors have been associated with impairments in adolescents with ADHD. Both male and female adolescents with a history of ADHD were more likely than their peers without ADHD to also have another psychiatric condition (Monuteaux et al., 2010). Adolescents with ADHD who also had a comorbid psychiatric condition showed significantly greater impairments in functioning than their peers who had ADHD without comorbidity.

ADHD is associated with an increased likelihood of unsafe driving behaviors, including receiving citations, being involved in motor vehicle crashes, and being involved in accidents resulting in injuries and fatalities (Barkley & Cox, 2007). Potential mechanisms of action have been proposed, including poor ability to anticipate driving hazards, willingness to engage in risky driving behaviors, inadequate self-assessment of skills in relation to challenging driving situations, and vulnerability to influence from peers (Pollatsek, Fisher, & Pradhan, 2006).

Research identifying protective factors has been limited. One study found that greater self-perceived sense of control and meaningfulness about life among youth with ADHD predicted higher reductions in ADHD symptoms from childhood to adolescence, especially for teens with severe symptoms (Edbom, Malmberg, Lichtenstein, Granlund, & Larsson, 2010).

## Family Factors Influencing Risk and Resiliency

ADHD has a significant effect on children and adolescents and their families. Youth with ADHD require greater supervision and encouragement than their peers without this disorder (Barkley, 2006). Parents of children with ADHD typically feel more frustrated and stressed and they are more likely to feel helpless than parents of children without ADHD (Deault, 2010).

Parent–child communication is essential to sustaining strong relationships and enabling parents to be involved in a useful way in their child's decision making regarding peers and community activities (Robin, 2009). Communication problems are common among families of teens with ADHD and are associated with negative outcomes. For example, when a child has ADHD, parent–child communication difficulties during childhood have been shown to predict tobacco use in early adolescence (Burke, Loeber, & Lahey, 2001). Resilience factors have been identified with novice drivers that likely have applicability to those with ADHD include strong parent–child communication, increased parental surveillance, and use of an accountability system based on parent–teen negotiation, contracting, and positive reinforcement for goal attainment (Fabiano et al., 2011).

Parental surveillance is essential for preventing youth from engaging in harmful activities in the community and promoting adaptive peer functioning. Working out the right level of parental supervision can be challenging in families in which there is a teen with ADHD. Once again, strong communication between parent and child lays the foundation for success in negotiating a system of accountability that acknowledges the teen's emerging need for greater autonomy and is effective in protecting the teen from harm (Barkley, Edwards, & Robin, 1999).

## Social and Community Factors Influencing Risk and Resiliency

The presence of ADHD poses serious risks to adolescents with ADHD in school and community contexts. This section describes the risks as well as factors that promote resilience and successful coping in school and community settings for these individuals.

*School factors*. Students with ADHD are at high risk for poor school performance, including more homework problems, lower rates of class work

completion, lower grades, poorer performance on standardized achievement tests, higher rates of classification in special education, and higher rates of grade retention (DuPaul & Stoner, 2003). A pattern of poor school performance often becomes established early in schooling, persists through the elementary and middle school years, and results in increased risk of dropout in high school. School dropout, in turn, has been shown to be a serious risk factor for poor outcomes later in life, including chronic health conditions, alcohol and substance abuse, serious mental illness, unemployment, and incarceration (National Research Council, 2001).

Research has identified student engagement as a key factor in preventing dropout and promoting successful school performance. Student engagement has multiple dimensions (Betts, Appleton, Reschly, Christenson, & Huebner, 2010). Behavioral engagement, the extent to which a student is in a position to participate in school, is measured by attendance, suspensions, and participation in extracurricular activities. Academic engagement, the extent to which students are involved in instruction and practice activities, is differentiated into active responding (asking questions, working on class work) and passive responding (looking at teacher during instruction). Cognitive engagement refers to internal factors related to learning, including self-regulation, academic motivation, goal directedness, and use of learning strategies. Finally, psychological engagement refers to a student's connectedness with school, including perceived support from teachers and classmates and a sense of belonging.

Research on student engagement has identified multiple factors that have relevance to promoting resilience for students with ADHD who are at risk for school failure (see National Research Council and Institute of Medicine, 2004). One factor is ensuring that instructional and practice activities include the appropriate ratios of familiar to unfamiliar material and are meaningful and interesting to students (Burns, 2004). A critical factor is to establish and maintain a strong relationship between student and teacher, which has been related to academic and

social success in school (Pianta, 1999). Although the manner in which families are involved changes in secondary school in response to emerging student autonomy and changes in school structure, it is critical for parents to actively participate in their child's education and remain closely connected with the school (Grolnick, Kurowski, Dunlap, & Hevey, 2000). In addition, connecting students to a mentoring program promotes a sense of student belonging to the school, provides ongoing monitoring of academic performance and behavior, and coordinates the efforts of school personnel to assist the student (Sinclair, Christenson, & Thurlow, 2005).

*Community factors.* Adolescence is marked by a heightened desire for autonomy from parents and other adults, an increased interest in forming relationships with peers, greater involvement in activities outside of home and school, and increasing access to privileges (e.g., driving, intimate relationships). Adolescence poses substantial challenges and risks to youth and their families, but the presence of ADHD often confers additional risk, such as engaging in potentially harmful sexual behavior (Barkley & Gordon, 2002), using tobacco (Molina, 2011), and engaging in dangerous driving behavior (Barkley, 2004).

Psychosocial adversity, such as lower socioeconomic status, single parenting, and parental psychopathology, predicts the persistence of ADHD into adolescence (Biederman & Faraone, 2002). Several factors that promote resilience among adolescents have relevance for youth with ADHD. Involvement in meaningful community activities (e.g., afterschool programs) has been identified as a key factor in promoting positive youth development (Lerner & Benson, 2003). In these contexts, it is important for youth to have the opportunity to form meaningful relationships with adults outside the home, engage in supportive peer relationships, and pursue activities that have intrinsic value to them; however, youth with ADHD face unique challenges in becoming involved in meaningful extracurricular activities at school and in the community.

## Evidence-Based Treatment Interventions for ADHD

Unlike research regarding psychosocial interventions for children with ADHD, psychosocial treatment development for adolescents with ADHD is in its infancy. Nonetheless, there are many promising approaches to psychosocial intervention for youth with this disorder.

### What Works

A review of the literature to date indicates that no treatment has met the criteria of being tested in three randomized controlled trials and shown to be successful. As a result, a work group of the AAP concluded that there is not sufficient research support for the effectiveness of psychosocial treatments for adolescents with ADHD (American Academy of Pediatrics, 2011). A meta-analysis of behavior modification treatments for ADHD (parent behavioral therapy, classroom consultation, and summer treatment programs) found moderate to large effect sizes, but few of the reviewed studies examined the effectiveness of such treatments with adolescents (Fabiano, Pelham, Coles, Gnagy, & Chronis-Tuscano, 2009).

### What Might Work

Researchers have begun to address the need for effective psychosocial treatments for adolescents with ADHD that address teenagers' functioning at home, school, and elsewhere.

*Family-based interventions*. Table 9.1 lists the six studies investigating the effectiveness of a family-based intervention for adolescents with ADHD. Two large-scale studies conducted by Barkley, Guevremont, Anastopoulos, and Fletcher (1992), Barkley, Edwards, Laneri, Fletcher, and Metevia (2001) found significant improvements as a result of Behavior Management Training (BMT) and Problem-Solving Communication Training (PSCT). BMT provided in this study was an adapted version of the program devel-

oped by Barkley to train parents in behavioral management techniques. It was found effective in reducing parent–child conflict and child non-compliance in children with ADHD and disruptive behavior disorders. PSCT teaches family members behavioral skills (e.g., problem solving, communication strategies, contingency management), uses family therapy approaches to address family structure and communication patterns, and uses cognitive therapy approaches to reframe irrational beliefs. These studies found that adolescents in both treatment groups improved significantly from pre-treatment to post-treatment, although neither study included a treatment as usual group to control for non-treatment effects. However, less than one third of teenagers showed significant improvements and less than one fifth of teenagers improved to the point of being in the normal range, suggesting that the effectiveness of these treatments was somewhat limited.

Additional studies have found improvements in response to structural family therapy (Barkley et al., 1992) and a summer treatment program with parent training intervention (Sibley et al., 2011, 2012, Sibley, Smith, Evans, Pelham, & Gnagy, 2012) suggesting that these interventions also show promise in treating adolescents with ADHD. For two studies, parent involvement was limited to parent psychoeducation and did not include behavioral parent training. One of these studies found positive improvements (McCleary & Ridley, 1999), whereas the other study (Antshel, Faraone, & Gordon, 2012), which combined parent education with adolescent cognitive-behavioral therapy, failed to find positive results. These mixed results suggest that further research is needed to determine the effectiveness of parent education.

Similarities among the interventions that appear promising consist of elements of behavior therapy, goal setting, contingency management, and frequent use of positive reinforcement. In addition, these interventions include components to make the treatment developmentally appropriate for adolescents, such as communication and negotiation training. Each of these treatments needs additional randomized controlled trials in order to conclusively determine that they are effective for teenagers with ADHD. Furthermore,

**Table 9.1** Family interventions for adolescents with ADHD adapted by authors

| Tx | Study authors (N, age range) | Design | (Gender) ethnicity | Outcome measures | Findings |
|---|---|---|---|---|---|
| CBT + Family Ed | Antshel et al. (2012) (N=68, 14–18) | Within-subjects | (66 % Male) 81 % Caucasian 13 % Af. Am. 3 % Latino | GPA, attendance, BASC-2 (P&T), IRS, ADHD-RS (P&T), med adherence, med dose | • No statistically significant findings<br>• Larger *ES* for school absences/tardiness, parent and teacher ratings of inattention, and parent ratings of externalizing problems |
| PSCT, BMT, SFT | Barkley et al. (1992) (N=61, 12–17) | Randomized control trial | (Gender NR) 100 % Caucasian | CBCL (P&Y), Conflict Behavior Questionnaire, Issues Checklist, Locke-Wallace Marital Adjustment Test, Family Beliefs Inventory, BDI, PAICS-R | • Statistically significant improvements for all three Tx groups on parent- and youth-report of communication, # conflicts, anger intensity; and parent ratings of school adjustment, internalizing and externalizing problems<br>• Only 5–30 % reliably improved from treatment, only 5–20 % recovered following treatment |
| PSCT, BMT | Barkley et al. (2001) (N=97, 12–18) | Pre-/Post- | (90 % Male) 86 % Caucasian 9 % Latino 3 % Asian 2 % Af. Am. | Conflict Behavior Questionnaire, Issues Checklist, Parent–Teen Conflict Tactics Scale, Conflict Rating System, DBD | • Statistically significant improvements for both Tx groups (PSCT, BMT+PSCT) on parent, teacher, adolescent, and direct observation ratings |
| STP-A + Parent Train. | Sibley et al. (2011) (N=19, 11–16) | Within-subjects + Single Case Ex. | (68 % Male) 58 % Caucasian 21 % Latino 11 % Af. Am. 11 % Other | Program-specific ratings of target behaviors | • Parent, youth, and counselor reported improvements in target behaviors<br>• Moderate treatment effects for case study |
| STP-A + Parent Train. | Sibley et al. (2012) (N=34, M=13.9) | Within-subjects | (88 % Male) 82 % Caucasian | Improvement Rating Scale | • Parent ratings show some improvement across target behavior from baseline |
| Parent education and skills training | McCleary and Ridley (1999) (N=103, 12–17) | Pre-/Post- | (77 % Male) Ethnicity NR | Conflict Behavior Questionnaire, Issues Checklist | • Statistically significant improvements in parent–youth conflict and child problem behavior |

*Abbreviations: BMT* Behavior Management Training, *CBT* Cognitive-Behavioral Therapy, *PSCT* Problem-Solving Communication Training, *SFT* Structured Family Therapy; *STP-A* Summer Treatment Program for Adolescents

the relatively low response rate to intervention in the Barkley studies suggests that modifications may be needed to increase the effectiveness of family treatments for adolescents.

It is important to note that each of the previously mentioned interventions has been designed for and applied in an outpatient setting. When adolescents experience significant impairment, requiring more intensive intervention than can be provided in an outpatient setting, similar family interventions can be applied in an inpatient, residential, or day treatment setting, although additional research is needed in these settings.

*School interventions*. Table 9.2 lists the 28 studies that have investigated the effectiveness of school-based intervention for adolescents with ADHD. Six studies investigated the *Challenging Horizons Program* (CHP; Evans, Schultz, DeMars, & Davis, 2011). CHP is an afterschool program developed for middle school students with ADHD, which was adapted and is currently being evaluated for use with high school students with ADHD. This program addresses students' academic, behavioral, and social functioning through a variety of after-school intervention, parent education, and teacher consultation activities that include elements of behavioral parent training and teacher consultation, as well as the application of behavioral interventions to teach organization and social skills. The middle school version of CHP has been found to have medium to large effect sizes on a variety of outcome measures and to move 38–60 % of middle school students with ADHD into the average range on a measure of impairment. CHP has been evaluated in multiple studies and could be considered an efficacious treatment for middle school students with ADHD. However, it is classified as a program that "might work" for adolescents given that there have not been any outcome studies determining the effectiveness of this program with high school students.

Five studies investigated interventions to address academic skill deficits in adolescents with ADHD. Each found significant treatment effects on measures of academic performance and/or on-task behavior. Two interventions were

examined in two separate studies, the *Thinking Before Reading*, *While Reading*, *After Reading* intervention (TWA) and the *Self-Regulated Strategy Development* intervention (SRSD). The other interventions were only evaluated in one study. An additional five studies investigated the effectiveness of interventions targeting disruptive behavior. Similar behavioral techniques were used in each of these studies, but approaches were not standardized across studies. Improvements were found in all five studies, although each study used a single case design and therefore the results are limited with regard to generalizability to adolescents with ADHD.

Nine studies have investigated interventions addressing organizational skills and homework problems. The sample sizes for all of these studies were small, with four of them including fewer than five participants. All of these studies found positive improvements in response to intervention, although only one study assessed the statistical significance of results. All of the studies used behaviorally based techniques but differed in their specific interventions, with the exception of two studies that used self-monitoring of class preparation behavior. An additional three studies examined social skills interventions applied in the school setting and found positive improvements on some measures of social behavior.

Overall, a review of these studies reveals that the effective interventions shared some common elements, specifically the application of behavioral principles to address school problems and the involvement of both students and teachers in the implementation of interventions. Interventions differed in the extent to which students were the primary treatment agent (e.g., self-monitoring interventions) versus teachers or other school personnel (e.g., group contingency management). With the exception of the CHP, the generalizability of study results is limited by the failure of studies to standardize their interventions so that results can be compared across studies.

It is important to note that each of the previously mentioned interventions have been designed for and applied in a regular education classroom placement setting. When adolescents

**Table 9.2** School interventions for adolescents with ADHD adapted by authors

| Tx | Authors (N, age range) | Design | (Gender) Ethnicity | Outcome measures | Findings |
|---|---|---|---|---|---|
| *Multimodal Interventions* | | | | | |
| CHP | Evans et al. (2004) (N = 7, 6–8) | Within subjects | (71 % Male) Ethnicity NR | Grades, GPA slope, ADHD-RS, CIS | • Large effect sizes for parent- and teacher-rated inattention, academics, teacher-rated hyperactivity and classroom behavior |
| CHP | Evans et al. (2005) (N = 27, 11–14 ) | Pre-/Post- | (78 % Male) 100 % Cauc. | GPA, IRS | • Maintenance of GPA in Tx group *vs.* decline in comparison group<br>• Improvement to "normal range" on IRS for 38–60 % of Tx group |
| CHP | Evans et al. (2005) (N = 35, 11–14) | Within subjects | (83 % Male) 100 % Cauc. | IRS, ADHD-RS | • Average effect size across raters indicates overall improvement<br>• Raters agreed on only 27 % of kids |
| CHP-C | Evans et al. (2007) (N = 79, 10–14) | Between group | (77 % Male) 94 % Cauc. | BASC, DBD, IRS, SSRS, Grades | • Improvements in parent ratings of ADHD symptoms and social functioning<br>• Trends suggested benefits for Tx group grades |
| CHP | Evans et al. (2011) (N = 49, 10–13) | | (71 % Male) 70 % Cauc. 14 % Af. Am. 12 % Hisp. 4 % Asian | DBD, IRS, CPS, Grades | • Improved teacher ratings of academic impairment for Tx group<br>• Improved teacher-reported language arts and social studies progress for Tx group<br>• Better grades in math for Tx group<br>• Unspecified site-specific contextual factors may have contributed to differences for some outcome measures |
| CHP | Molina et al. (2008) (N = 20, 6–8) | | (Gender NR) Ethnicity NR | BASC, IRS, Grades, Aggression and Conduct Problems Scale | • Medium *ES* for parent ratings of internalizing, and adolescent-reported school adjustment<br>• Prevention effect on grades and conduct problems<br>• Small *ES* for parent-reported externalizing problems |
| *Academic Skills Interventions* | | | | | |
| SSIC | Diliberto et al. (2008) (N = 83 [7 ADHD], 6–8 grade) | Pre-/Post- | (65 % Male) 61 % Cauc. 27 % Af. Am. 12 % Hisp. | WJ-III Reading Subtests, Reading Fluency | • Statistically significant effects on WJ-III subtests, favoring Tx group<br>• Interaction effect for reading fluency approached significance ($p = .06$) |
| Planning strategy instruction | Iseman and Naglieri (2011) (N = 29, 10–15) | Pre-/Post- | (72 % Male) 89.7 % Cauc. | WJ-III Math Fluency, WIAT-II Numerical Operations, Math scores | • Gains for Tx group on all three measures<br>• Maintained at 1-year follow-up |
| TWA & SRSD | Johnson et al. (2012) (N = 3, 14–15) | Mult. BL | (100 % Male) 100 % Cauc. | Recall of main ideas and details | • PND main ideas >80 %<br>• PND details >60 % |

(continued)

**Table 9.2** (continued)

| Tx | Authors (N, age range) | Design | (Gender) Ethnicity | Outcome measures | Findings |
|---|---|---|---|---|---|
| TWA-WS & SRSD | Rogevich and Perin (2008) (N=63, [31 ADHD], 13–16) | Pre-/Post- | (100 % Male) 35 % Cauc. 41 % Af. Am. 24 % Hisp. | Summarization of main ideas | • Improvements on post-test, near and far transfer tasks, and follow-up |
| Self-monitor+reward | Shimabukuro et al. (1999) (N=3, 12–13) | Mult. BL | (100 % Male) Ethnicity NR | Academic accuracy, Productivity, On-task behavior | • Stronger improvements for productivity and accuracy in reading and math classes vs. writing class • On-task behavior showed similar pattern across subject areas |
| *Behavioral Interventions* | | | | | |
| Func. Assess. & Int. | Ervin et al. (1998) (N=2, 13–14) | Single subj. | (100 % Male) 50 % Cauc. 50 % Hisp. | On-task behavior | • % intervals of on-task behavior increased to >88 % for both participants |
| Self-monitor | Graham-Day et al. (2010) (N=3, 16) | . | (67 % Male) 100 % Cauc. | On-task behavior, Grades | • On-task behavior increased across all 3 participants to >90 % • Grades showed little change |
| Group contingency | Jones et al. (2008) (N=7, 6–8) | | (Gender NR) Ethnicity NR | Disrespectful verbal behavior | • Reductions in verbally disrespectful behavior across participants |
| Func. Assess. & Int. | Majeika et al (2011) (N=1, 17) | | (100 % Male) 100 % Cauc. | On-task behavior | • % intervals of on-task behavior increased to roughly 80 % |
| Self-monitor+reward | Shapiro et al. (1998) (N=2, 12) | | (100 % Male) Ethnicity NR | ADHD-RS, CTRS-R, Classroom behavior ratings, On-task behavior | • Improved classroom behavior ratings • Improved levels of on-task behavior • Some improvements on CTRS-R and ADHD-RS |
| *Organizational Skills and Homework Interventions* | | | | | |
| Self-monitor | Creel et al. (2006) (N=4, 11–12) | Mult. BL | (75 % Male) 50 % Af. Am. 25 % Cauc. 25 % Hisp. | Class preparation behaviors | • Improvements in teacher ratings of classroom preparedness • PND of 0 % for all participants |
| PDAs for HW | Currie et al. (2005) (N=4, 12–14) | Mult. BL | (100 % Male) Ethnicity NR | Homework completion | • Average % of homework completed met or exceeded criterion of 80 % for 3 of 4 students |
| Org. Checklist | Evans et al., (2009) (N=28, 11–15) | With-in-subjects | (77 % Male) 70 % Cauc. 14 % Af. Am. 12 % Hisp. 4 % Asian | Mastery of organizational checklist, Grades | • 71 % of the sample met a mastery criterion of 90 % over three weeks • Performance on specific organizational skills correlated with student math and English grades |

| Intervention | Study | Design | Demographics | Class preparation behaviors | Outcomes |
|---|---|---|---|---|---|
| Self-monitor | Gureasko-Moore et al (2006) (N=3, 12) | Mult. BL | (100 % Male) Ethnicity NR | Class preparation behaviors | • Overall improvements across all three participants, with gains maintained |
| Org. Strategies | Langberg et al. (2008) (N=37, 4–7) | | (84 % Male) 70 % Cauc. 30 % Af. Am. | APRS, HPC, Grades, Organization Checklist, Homework Management Checklist | • Improvements to >90 % on Organization Checklist<br>• Improvements to 72 % on Homework Checklist<br>• Statistically significant improvements for Tx group on HPC<br>• Some improvement of GPA for Tx group |
| Goal setting and coaching | Merriman and Codding (2008) (N=3, 9–10) | Mult. BL | (67 % Male) Ethnicity NR | Homework completion and accuracy | • Stable improvements in both completion and accuracy for 2 of 3 students |
| Self- and parent-monitoring, SQ4R | Meyer and Kelley (2008) (N=42, 11–14) | | (86 % Male) 93 % Cauc. | HPC, CPS, Homework Grades | • Self- and parent-monitoring groups both increased % homework turned in and reduced homework problems on HPC |
| HIP | Raggi et al. (2009) (N=11, 11–13) | Mult. BL | (91 % Male) 36 % Cauc. 45 % Af. Am. 9 % Hisp. 9 % Bi-racial | APRS, BIRS, DBD, Grades, HPC, Homework Process Questionnaire | • 8 of 11 participants improved on HPC; 6 maintained improvements<br>• 7 of 8 students with grades showed improvement<br>• 7 of 11 kids improved on parent DBD ratings<br>• 6 of 10 students were rated improved on the Academic Productivity subscale of the APRS |
| Daily Planner & Org. Checklist | Sadler et al. (2011) (N=36, 13–17) STUDY 1 | Pre-/Post- | (86 % Male) 92 % Cauc. 6 % Biracial 3 % Hisp. | Mastery of planner and checklist | • 62 % of kids mastered checklist<br>• Mixed findings for planner<br>• Positive correlations found between adherence to checklist/planner and GPA |
| *Social Skills Interventions* | | | | | |
| Social rules and group prob. solving | Kuester and Zentall (2012) (N=34, 10–14) | | (47 % Male) 94 % Cauc. 6 % Af. Am. | % problems cooperatively solved Pro-social behavior | • Fewer problems solved in no-rule condition<br>• Some increases in pro-social behavior under rules condition |
| ISG | Sadler et al. (2011) (N=15, 13–17) STUDY 2 | Pre-/Post- | (Gender NR) Ethnicity NR | IRS, SSRS, ISG Cards | • 33 % of student mastered social goals<br>• Mastery was associated with greater decreases in IRS social impairment<br>• All students improved on SSRS ratings |
| Peer scaffolding | Watkins and Wentzel (2008) (N=24, 9–13) | Pre-/Post- | (100 % Male) Ethnicity NR | Behavioral observation of a problem-solving task | • Joint participation increased through scaffolding<br>• Solitary participation decreased<br>• Passive behaviors remained stable |

*Abbreviations: NR* Not Reported, *CHP* Challenging Horizons Program, *CHP-C* CHP with Consultation, *ADHD-RS* ADHD-Rating Scale, *BASC* Behavior Assessment System for Children, *CIS* Children's Impairment Scale, *CPS* Classroom Performance Survey, *DBD* Disruptive Behavior Disorders Rating Scale, *IRS* Impairment Rating Scale, *SSRS* Social Skills Rating Scale, *SSIC* Syllable Skills Instruction Curriculum, *TWA* Thinking Before Reading, While Reading, After Reading, *SRSD* Self-Regulated Strategy Development, *TWA-WS* TWA-with Written Summarization, *CTRS-R* Connors Teacher's Rating Scale-Revised, *SQ4R* Survey, Question, Read, Write, Recite study strategy, *HIP* Homework Intervention Program, *ISG* Interpersonal Skills Group, *APRS* Academic Performance Rating Scale, *BIRS* Behavior Intervention Rating Scale, *CPS* Classroom Performance Survey, *HPC* Homework Problems Checklist

**Table 9.3** Other interventions for adolescents with ADHD adapted by authors

| Tx | Study authors (N, age range) | (Gender) Ethnicity | Design | Outcome measures | Findings |
|---|---|---|---|---|---|
| STEER | Fabiano et al. (2011) (N=7, 16–17) | (43 % Male) 100 % Caucasian | Mixed Methods/ Multiple-baseline | Electronically monitored driving behaviors (CarChip Pro), Driving Behavior Questionnaire (P&Y), IRS | • Hard braking, top weekly speed improved • Ratings on DBQ and IRS suggestive of positive effects, though not tested for significance |

*Abbreviation*: *STEER* Supporting a Teen's Effective Entry to the Roadway

experience more significant impairment, so that they cannot be effectively and safely taught in a regular education classroom setting, they typically receive similar interventions at a greater intensity in a special education classroom placement. As such, there remains a need for additional research regarding the effectiveness of school interventions in more restrictive academic settings for students with ADHD.

*Other interventions*. The majority of interventions have been focused on improving youth functioning at home and/or school. However, the following intervention approaches also have promise and deserve mention.

*Driving*. Fabiano et al. (2011) have developed the STEER program as an intervention for adolescents with ADHD who are learning to drive. This program incorporates components of cognitive-behavior therapy (CBT) that have been shown to be promising in the treatment of teens with ADHD, including negotiating, goal setting, contracting, monitoring of behavior, and contingency management. In a pilot study, Fabiano and colleagues demonstrated that STEER is feasible to implement and promising for improving driving performance.

*Working memory*. Studies of working memory training have included both children and adolescents, so it is not possible to pinpoint the effects of such programs on adolescents with ADHD. Working memory training programs have found some intriguing initial results, primarily demonstrating that they can improve performance on working memory tasks in the lab.

However, studies that have investigated their effect on ADHD symptoms via blind parent and teacher reports have failed to demonstrate treatment effects (Shipstead, Redick, & Engle, 2012).

*Biofeedback*. Some initial studies of biofeedback as a treatment for ADHD have found promising results for children. One study found that biofeedback had positive results compared to controls on independent clinician ratings of diagnostic status (e.g., Bakhshayesh, Esser, & Wyschkon, 2010), suggesting that this treatment shows promise. However, studies with adolescents that look specifically at the beneficial effects of this treatment on behavior at home and school are needed to determine whether biofeedback "works" as a treatment strategy for ADHD in adolescence.

## What Doesn't Work

Although no intervention has been sufficiently studied with adolescents with ADHD to conclude that it does not work for certain, ADHD treatment research with younger children suggests approaches that are not likely to work. Specifically, treatments targeting youth that do not include behavioral management strategies applied by parents and teachers have not been found to be effective for children with ADHD. Consistent with this, Antshel et al. (2012) studied the effectiveness of cognitive-behavioral therapy combined with parental education (rather than behavioral parent training) for adolescents with ADHD and failed to find any significant improvements as a result of the treatment (see Table 9.1 for further information). Numerous

alternative treatments have been developed and have proponents who claim that the approaches are effective for treating ADHD. However, in general, these alternative treatments either have not been researched sufficiently or research has failed to find beneficial results when the treatment was subjected to a double-blind study. For further information regarding alternative treatments for ADHD, see the review by Hurt, Lofthouse, and Arhold (2011).

## Psychopharmacology and ADHD

There is strong evidence that pharmacological treatment is effective with adolescents and adults (Barkley, 2006; Wolraich, 2011) and equally effective with males and females. The most effective class of medications for treating ADHD is the stimulants (AAP, 2011). There are two broad classes of stimulants: methylphenidate and amphetamine compounds. Both classes of medication are essentially equally effective, although some individuals respond more favorably to one class as opposed to the other. Experts generally recommend that prescribing providers offer a trial of both types of stimulants before advancing to non-stimulant alternatives (Wolraich, 2011). Several additional medications have been approved by the Food and Drug Administration for the treatment of ADHD; these include atomoxetine, extended release guanfacine, and extended release clonidine. In general, effect sizes achieved by the stimulants are larger than those exhibited by these alternative drugs (AAP, 2011).

A major concern with the pharmacological treatment of ADHD is non-adherence (Molina et al., 2009). Non-adherence is often related to ambivalence on the part of adolescents about the benefits and usefulness of medication, as well as concerns about unwanted side effects (e.g., seriousness, lack of spontaneity). For this reason, approaches to treatment planning that involve full participation by adolescents as well as their parents and health providers are strongly recommended (Power, Soffer, Cassano, Tresco, & Mautone, 2011). Another concern when treating adolescents with medicine is the potential for diversion, that

is, unauthorized use of medication involving the giving, selling, or trading of prescribed medication by youth with ADHD to another youth (Wilens et al., 2008). This concern has led to recommendations that prescribing clinicians monitor carefully refill requests and use medications that have low abuse potential (AAP, 2011).

## Prevention for Youth with ADHD

Prevention for youth with ADHD refers to reducing educational and social impairments and minimizing risks associated with poor outcomes later in life. Research focused on the prevention of impairments and risk among adolescents with ADHD is limited, but public health models have been developed that have relevance and promise for youth with ADHD.

### What Works

Although research on adolescents with ADHD has increased substantially over the past several years, no prevention programs for these individuals have been demonstrated to be effective. However, many prevention approaches are promising and likely to be effective.

### What Might Work

Schools are a logical venue for the delivery of prevention services, given that the mission of schools is to promote youth development and given that they serve a very high percentage of youth. Since 2000, there has been a widespread effort to implement a public health, prevention framework in public schools throughout the USA. The most commonly used and most widely studied approach is School-wide Positive Behavior Support (SWPBS; Sugai & Horner, 2006). This approach is characterized by the use of multi-tier models of prevention and intervention. Applying a public health approach to programming for youth with ADHD has significant utility and potential effectiveness (Evans

et al., 2014). Most multi-tier models developed for schools have three or four levels. Recently, Tresco, Lefler, and Power (2010) have described a four-tier model that has applicability for youth with ADHD.

*Multi-tier models*. The first tier refers to universal strategies for all students that can be beneficial to the subset of youth with ADHD. These approaches include instructional strategies that maximize student attention and productivity. For example, research indicates that instruction incorporating novel material and teaching methods that provide students with frequent opportunities for active responding (e.g., participation in class, brief written assignments, opportunities to work on educational computer games) can promote concentration and work productivity (DuPaul & Power, 2009). Further, instruction in organizational strategies, such as note taking, organization of school work and homework, and time management, can be useful in promoting school success for all children, especially those with ADHD.

Universal strategies have also been developed to promote adaptive behavior and social interaction. For example, it is important for teachers to identify a limited number of critical rules for students to follow, to post these rules in a prominent location, and to provide frequent instruction and reminders about the rules. In addition, it is important for teachers to observe students on a continual basis with regard to how well they are following the rules and provide frequent positive reinforcement for rule-governed behavior. Corrective feedback can be offered to students in the class, but the ratio of positive reinforcement to corrective feedback to the class as a whole and to each student should be at least four to one (DuPaul & Stoner, 2010). Promoting family involvement in education is another important universal strategy, given the clear link between family involvement and student outcomes (Christenson & Sheridan, 2001). Teachers can provide parents and youth with clear guidelines about how to address common homework challenges and how to seek help when problems arise. In addition, teachers can educate parents about other ways to support students, such as

communicating high and realistic expectations to students and identifying useful websites.

The second tier refers to selective strategies for the subgroup of students who do not respond sufficiently to universal approaches. Peer tutoring is an approach that has received some research attention for students with ADHD (DuPaul, Ervin, Hook, & McGoey, 1998). Peer tutoring is typically provided by pairing students and requesting them to work in a reciprocal manner (i.e., exchange of tutor/tutee roles). This strategy provides opportunities for students to receive individualized instruction using a pace that matches the style of the learner. Also, peer tutoring typically includes frequent prompts for attention and frequent positive reinforcement for effort and accurate responding. In addition, peer coaching is a useful approach and has the potential to improve both academic and social performance (Dawson & Guare, 1998). Peer coaching typically incorporates goal-setting techniques and monitoring to evaluate goal attainment. The success of both peer tutoring and peer coaching requires careful planning with the teacher and ongoing adult supervision. Another Tier 2 strategy is identifying a school-based mentor, who could be a teacher, counselor, or coach. The role of the mentor is to provide support and guidance to the student, coordinate communications among teachers, and promote family–school collaboration. Various models of school mentoring have been developed. The Check and Connect program, developed to promote school engagement and prevent dropout, uses an approach to mentoring that is relatively intensive and more consistent with a Tier 3 intervention (Sinclair et al., 2005), but components of this program can be adapted for use at the Tier 2 level.

Multi-tier models for youth with ADHD typically include two additional tiers that involve intervention as opposed to prevention. Tier 3 includes interventions such as self-management, organizational skills training, and social skills programming, which are described in the treatment section. Tier 4 refers to highly intensive intervention that might include placement in special education for most of the school day or partial hospitalization programming.

*Progress monitoring*. A key component of prevention programming is monitoring of progress on critical outcome variables. There are two broad classes of outcome variables that are relevant for students with ADHD: academic and social-behavioral. A useful strategy for monitoring progress with regard to academic functioning is curriculum-based measurement (CBM), which involves the frequent, ongoing assessment of materials directly linked to the curriculum using brief (1- or 2-min) probes (Shapiro & Gebhardt, 2012). A noteworthy advantage of CBM methods is that they yield useful data about rate (slope) of progress in addition to level of functioning, which is highly useful in assessing whether rate of progress is adequate.

A highly useful strategy for monitoring social and behavioral functioning is direct behavior ratings (DBRs). This method involves frequent (daily or multiple times per day) ratings of student behavior by a teacher on one or more targeted behaviors (Gresham et al., 2010; Volpe & Gadow, 2010). These methods demonstrate adequate psychometric properties for progress monitoring and generally are sensitive to the effects of evidence-based interventions.

*Assessment of integrity and engagement*. Integrity refers to the extent to which interventions are delivered as intended, and engagement refers to the extent to which participants are actively involved in the process of intervention. The importance of assessing integrity and engagement is highlighted by the reality that lack of intervention (or prevention) effectiveness could be due to use inadequate clinician implementation and/or participant engagement (Glover & DiPerna, 2007).

Implementing intervention strategies with integrity means adhering to or following the steps of the intervention and doing so competently. Integrity is most accurately assessed by having external reviewers observe the intervention and code for adherence and competence. Engagement is a multi-dimensional construct that includes session attendance, active attending during sessions, and completion of between-session assignments to parents or youth to practice skills. Engagement can be measured by clinician ratings of intervention involvement, participant response to clinician attempts to contact, or permanent products generated by homework assigned to participants (Power et al., 2005).

*Response to intervention*. A key feature of multi-tier models of prevention is that movement up and down the tiers is based on response to intervention, which is determined by progress monitoring of targeted outcome variables and a consideration of integrity and engagement (Glover & DiPerna, 2007). For example, in the context of a public health or prevention framework, all students with ADHD will receive universal strategies of instruction and behavior management and their progress will be monitored based on empirical findings regarding the student's academic, behavioral, and social functioning. If the student is struggling based on progress monitoring data, then integrity and engagement data should be reviewed to determine whether adjustments in implementation by the teacher are needed. If outcomes are inadequate despite acceptable implementation, then transitioning to Tier 2 prevention strategies likely is needed. Subsequent applications of prevention strategies and collection of outcome, integrity, and engagement data are then used to determine whether movement to higher tiers (Tier 3 and 4) are required.

As a general rule, prevention programming for students begins with Tier 1 and proceeds in a gradual, step-by-step (one tier at time) manner. However, for some children with ADHD, data available at baseline may indicate that universal programming will not be adequate and more intensive strategies are needed. In these cases, starting treatment at Tier 2 or 3 may be warranted. Also, the use of medication may have an effect on the tier that is most appropriate for students. For example, use of medication may enable a student with ADHD to be treated effectively in the general education setting using Tier 3 strategies, thereby averting the needed for intensive special education or partial hospitalization (Tresco et al., 2010).

## What Doesn't Work

In general, elimination diets and vitamin and mineral supplementation are limited in their effectiveness. Elimination diets generally are not effective unless they target foods for which an individual has been shown to have heightened sensitivity. However, these approaches can have adverse effects, such as parent–child conflict related to efforts to maintain adherence and nutrition imbalance associated with unintended elimination of important vitamins and minerals. Further, the application of elimination diets may result in delayed use of treatments that are much more likely to be effective (Arnold et al., 2011).

Diets involving nutritional supplementation have been examined in numerous studies (e.g., Hirayama et al., 2004; Raz et al., 2009; Voigt et al., 2001) There is little support for amino acid supplementation but some evidence that essential fatty acid supplementation may be a safe and sensible approach for improving inattention (Arnold et al., 2011; Chalon, 2009). Also, administering recommended daily allowances of multivitamins may promote nutrition and general health, but there is essentially no evidence to support the use of megadoses of vitamins (Arnold et al., 2011). Research generally supports the practice of prescribing mineral supplements when there are identified deficiencies of these substances. Further, thyroid treatment may be indicated when there is evidence of thyroid dysfunction (Arnold et al., 2011).

## Recommended Best Practice

ADHD is a neurodevelopmental disorder that usually starts in early childhood and often continues through adolescence. Currently, there is no cure for the biopsychosocial underpinnings of ADHD. When working with adolescents with ADHD, the goal is to help them develop strategies to manage the symptoms and address associated functional challenges, as well as to prevent the emergence of additional problems. Research regarding the treatment and prevention of func-

tional impairments in teenagers with ADHD is in its infancy. As a result, no specific psychosocial treatment has been shown to work in at least three randomized controlled trials.

However, research conducted to date with adolescents who have ADHD supports the following practices:

- Interventions applied at home and school should be based on principles of behavioral psychology and include youth, their parents and teachers in goal setting and contingency management involving the frequent use of positive reinforcement.
- Training youth and their parents in communication and negotiation skills is critical in strengthening parent–child relationships and developing strategies that are developmentally appropriate and acceptable to youth.
- Organizational skills training and peer relations training that involve youth as well as their parents and teachers are promising approaches to improving academic and social functioning.
- Public health models incorporating multi-tier models of prevention, ongoing monitoring of integrity and outcomes, and adjustments in level of support based on response to intervention are promising in preventing the emergence of serious impairments among youth with ADHD.
- Pharmacological treatment, in particular the stimulants, is an evidence-based treatment for adolescents with ADHD. Medication can be effective when youth view this treatment as acceptable and consistently adhere to the regimen. Also, there is evidence to suggest that medication may facilitate response to psychosocial interventions.

Research suggests that the response rate to existing interventions is variable and lower than that for younger children. Therefore, additional treatment development research is needed to adapt current treatments to increase their effectiveness and to develop new methods of intervention. Working memory training and neurofeedback are promising approaches, but additional research is needed to demonstrate their effectiveness and determine the conditions under which they may

be beneficial in augmenting approaches that are more likely to be effective, that is, behavioral and cognitive-behavioral strategies applied at home and school and medication, when indicated.

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# Depression

# 10

Clare Roberts

## Introduction

Depression is one of the most common reasons for adolescents to seek psychological treatment. Depressed adolescents have problems with emotions, managing anxiety, solving problems, and engaging in enjoyable activities. Typically, they limit their social contacts and often view themselves negatively. They engage in fewer enjoyable and social activities and tend to ruminate and not seek out others to test out their thoughts. They are frequently poor problem solvers and have difficulty in resolving conflicts. This may make them feel unhappy about their social circumstances (Roberts, Bishop, & Rooney, 2008). Depressed adolescents often have poorer social relations and fewer friends leading to more isolation. The burden of depression for those adolescents suffering from the disorder includes their caretakers and family members. This often contributes to a substantial burden for families (Hammen, 2009). Adolescent depression affects moods, thoughts, and behaviors. Despite these deficits and challenges, many effective interventions have been documented and are available to adolescents and their families.

Depression is the fourth most significant disease for children and adolescents. Depression in young adolescents is at 8 %. Adolescent depression is a serious problem that affects more teenagers and young people every day. Depression is the most disabling disorder worldwide when measured in Years Lived with Disability (YLDs). It is the fourth leading cause of disease burden when measured by disability-adjusted life years (Horton, 2010). It creates a significant burden for young adolescents, their friends, families, and teachers. One in five Australians has a mood or anxiety disorder, such as depression (6 %), anxiety (14 %), or both disorders. In 2011, depressive disorders accounted for 40.5 % (31.7–49.2) of all mental health disorders. Anxiety and depression were the most prevalent disorders in the findings from the Global Burden of Disease Study, 2010 (cited in Horton, 2010). Despite the burdens associated with this disease, adolescent depression can be successfully prevented and treated if teenagers and parents are engaged in evidence-based interventions. Fortunately, there are now many evidence-based prevention and treatment interventions for adolescent depression.

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## DSM V Incidence and Prevalence Rates

Depression is prevalent in adolescence. Merry, McDowell, Hetrick, Bir, and Muller's (2009) Cochrane review estimated that 24 % of adolescents experience at least one clinically significant depressive episode before the age of 18. The National Institute of Mental Health in America reported 11.2 % of 13–17 year olds reported depression leading to social problems, interruptions in academic areas, and interference with cognitive functioning (Keller et al., 1992). Costello, Mustillo, Erkanli, Keeler, and Angold (2003) reported that the 3-month prevalence of any disorder among adolescents is 13.3 % (95 % confidence interval, 11.7–15.0 %). Adolescents with a history of psychological symptoms are three times more likely than those with no previous disorders to experience depression. By 16 years the likelihood of any depressive disorder is 9.5 %, with 11.7 % for girls and 7.3 % for boys. By 18 years, the lifetime prevalence of depression is close to 20 % in community samples, and 17.4 % at 19 years and older. While 90 % of adolescent depressions resolve between 1.5 and 2 years, there is a 70 % rate of relapse within 5 years (Brent & Birmaher, 2002). Munoz, Beardslee, and Leykin (2012) report that 22–38 % of major depression episodes can be reduced if adolescents receive evidence-based interventions.

Adolescents with depression tend to sleep more and have more appetite problems, while some develop delusions plus suicidal ideation and suicide attempts. Depressed youth are at risk for the co-occurrence of other disorders, such as anxiety disorders, conduct disorders, personality disorders, substance abuse, obesity, interpersonal conflict, unfulfilling social relationships, and educational and occupational problems. Depressed youth also tend to have negative moods and increased risks for under achievement, uptake of substance abuse, and suicide (Waslick, Kandel, & Kakouros, 2002). Parents often report additional externalizing symptoms such as irritability, mood swings, low self-esteem, and sadness. In a clinical sample, Fernando et al. (2011) found that teenage onset of depression was associated with a greater likelihood of alcohol dependence, social phobia, and agoraphobia compared to adult onset depression; clinical implications are associated with a greater likelihood for comorbid Axis I and II diagnoses, plus a higher likeliness of attempted suicide.

*Biological/Genetic Factors*: Three quarters of young adults with psychological and psychiatric disorders developed their symptoms in childhood or early adolescence. Adolescent depression affects moods, thoughts, and behaviors, and adolescents who are depressed are not as effective in regulating their emotions and behaviors (Roberts & Bishop, 2003). Adolescents with a history of psychological symptoms are three times more likely than those with no previous disorders, to have a diagnosis at subsequent follow-ups. The move into adolescence marks a rise in rates of depression and social phobia in girls, but not boys. By 16 years the total of any depression disorder is 9.5 %, with 11.7 % for girls and 7.3 % for boys. This represents about one adolescent in five with a psychological disorder. Adolescent mental illness is an important risk factor for adult psychiatric problems.

Twice as many female adolescents are depressed compared to young men (Hyde, Mezulis, & Abramson, 2008). Explanations for this significant gender gap include differences in temperament and emotional regulation, negative cognitive style and ruminative coping, relationship dependence and affiliation, biological/hormonal changes in puberty, and genetic depressive vulnerability. The ABC model (Hyde et al., 2008) is a vulnerability-stress model of the emergence of gender difference in depression. The model suggests that gender effects affective, biological, and cognitive vulnerability in early adolescence forming a depressive vulnerability in the presence of stress.

Adolescents with psychological disorders such as depression have generally had childhood risk factors for psychiatric problems. For example, childhood depression predicts adolescent and adult depression (Lewinsohn, Rohde, Klein, & Seeley, 1999).

## Individual Factors Influencing Risk and Resiliency

*Genetic Theories*: Twin studies show that 50 % of mood disorders are genetically based, particularly in adolescence. Female to male gender ratios are close to 2.0–1, and the World Health Organization indicates that major depression is a leading cause of disease and disability in women (Kessler et al., 2003). Girls are not more depressed than boys in childhood, but more girls than boys are depressed in adolescence. Between the ages of 13–15 more girls are depressed than boys, and by 15–24 female rates for depression are at 21 % compared to 11 % for males.

*Biological Theories*: Somatic and psychological symptoms of depression are believed to relate to biological dysfunctions in the hypothalamic–pituitary–adrenal axis (HPA) leading to sympathetic nervous system problems. Dysregulation in this area of the brain is believed to play a role in emotion regulation and feelings such as guilt and hopefulness (Sharpley, 2010). Psychomotor abnormality, weight loss, and sleep loss are related to activity in the thyroid axis, and REM sleep can be disrupted (Maletic et al., 2007). The amygdala is also implicated in altered emotional processing, related to major depression (Luking et al., 2011).

*Cognitive Theories*: Negative cognitive style is a risk factor for depression in adolescence, as it includes increased levels of anxiety, low self-esteem, high self-criticism, and cognitive distortions, which may lead to poor school performance and few social skills (Hamrin & Magorno, 2010). In adolescence, the ABC developmental model includes gender as a depressogenic vulnerability affecting female adolescents, as they encounter vulnerabilities earlier than male adolescents (Hyde et al., 2008).

*Stress Generation and Interpersonal Theories*: Adolescents with a history of depression are known to experience relatively high numbers of ongoing interpersonal and other stressors. This in turn predicts the recurrence of depression (Hammen, Brennan, & Keenan-Miller, 2008).

Adolescents who experience multiple stressful life events may become depressed. Hammen et al. (2008) identified that adolescents at risk for depression also create stressful life events that lead to depression. At-risk teenagers contribute to the generation of stress, but also have deficits in their ability to change conditions which lead to depression (Kercher, Rapee, & Schniering, 2009). Interpersonal dysfunction in early adolescence predicts re-occurrences of maladaptive functioning with peers, family, romantic partners, and associated with parenting behaviors. Being the child of a depressed parent is associated with a two- to fourfold increased risk of becoming depressed in adolescence.

Cognitive deficits in self-monitoring, self-evaluation, memory impairments related to recall of success, setting harsh standards, and negative self-cognitions are common in depressed children, but positive self-evaluations can help compensate for these tendencies (Roberts et al., 2008). Negative cognitive processes, like worry and rumination, occur in response to repeated environmental stressors (Topper, Emmelkamp, & Ehring, 2010). These habits of thought can become habitual by early adolescence, hence the importance of targeting repetitive negative thinking and worry. Cognitive and interpersonal strategies in adolescent depression prevention programs should target cognitive errors, pessimistic attributions, self-esteem and self-perceptions, social and friendship skills, interpersonal problem solving, personal competencies, and coping skills.

## Family Theories

Perspectives on family influences on adolescent development range from the negative impact of "storm and stress" to the buffering effects of positive adaptiveness and parental support of skills of independent living. Most adolescents are still heavily under the influence of their family environment and depend on their family for the fulfilment of basic physical and psychological needs. Socialization in the family is impacted by parental styles, and modeling of behaviors, as parents shape adolescents entry into the social

world. Social learning occurs via the day-to-day parent-adolescent interactions (Rapee, Wignall, Spence, Cobham, & Lyneham, 2008). Both a lack of family support and the presence of family conflict have been shown to impact rates of adolescent depression (Sheeber, Hops, Alpert, Davis, & Andrews, 1997). Treating post-natal depression in mothers has been found to be important for childhood, adolescent, and parental depression in general (Porter & Hsu, 2003; Rishel, 2012). Regardless of the role of family factors in the onset of depression in adolescence, the family can be a significant factor in supporting treatment. Family models that emphasize attachment, and parent-adolescent interaction, are also important as a strong base in adolescence. Family group cognitive-behavioral interventions have found significant efficacy for preventing internalizing and externalizing symptoms (Compas et al., 2011).

## Evidence-Based Treatments for Adolescent Depression

Stice, Shaw, Bohon, Nathan Marti, and Rohde (2009) identified 32 prevention programs and 47 research trials in their meta-analytic review. Their review evaluated effect sizes from pre to post-intervention, and follow-up. The average effect size was small ($r = 0.15$) particularly from pre-, to post-test, and to follow-up ($r = 0.11$). High-risk individuals and samples, with more females and older adolescents, showed larger effects. However, programs with shorter duration and with homework assignments delivered by professional interventionists worked better.

*What Works*: Both cognitive-behavioral therapy (CBT; Lewinsohn, Clarke, Hops, & Andrews, 1990) and interpersonal therapy (IPT-A: Mufson, Gallagher, Dorta, & Young, 2004) have been found to decrease the rate of depression in adolescents. The usual improvement in adolescents is around 50–60 % under controlled conditions. Effect sizes are modest (0.34) for youth depression and lower than other adolescent disorders. Antidepressant medications, including serotonin reuptake inhibitors, are effective but there is some concern about

the use of antidepressant medication on younger adolescent populations (Hammad, Laughren, & Racoosin, 2006). Bridge et al. (2007) suggest that the benefits of antidepressants out-weigh the risks from suicidal ideation.

The best targeted program (Clarke et al., 2001) has an initial effect size of −0.46, which has an initial risk difference of −0.22, a 95 % confidence level. There were no effects on educational interventions.

Stice conducted two randomized controlled trials, Stice, Burton, Bearman, and Rohde (2007) and Stice, Rohde, Seeley, and Gau (2008). The 2006 efficacy trial found a significant effect for depressive symptoms at post-test and 3-months follow-up. Stice et al. (2008) used an efficacy trial comparing brief selective CBT, compared to an active control and assessment-only control group. A significant effect for depression was found on the K-SADS, and a significant reduced risk for depression onset occurred up to 6-months follow-up.

## What Is Promising

Christensen, Griffiths, and Jorm (2004) developed an internet program, Mood GYM which provides knowledge and information about depression and interventions that use CBT. A relatively new internet intervention, Mood Gym, has reported an "intention to treat" randomized control trial with 1,375 adolescents aged 12–17 years ($M = 14.34$). For the CBT intervention there was a reduction in depression score on the Center for Epidemiologic Studies of 3.2 (95 % confidence interval 0.6–5.2). CBT reduced dysfunctional thinking and increased knowledge of CBT therapy. Adolescents with depression often feel stigmatized. Mood Gym provides a private interaction with a computer and the possibility to take up a range of interventions and assessments to investigate moods and depression. Mood Gym Mark III is a training program for learning CBT skills for preventing and coping with depression.

The internet is a very important delivery mode because of its reach and low cost (Christensen & Griffiths, 2002). Rural and remote participants can easily access interventions from anywhere

via the internet. There is some suggestion that teenagers and people with suicidal ideation and depression prefer computer-based interventions. Christensen, Griffiths, MacKinnon, and Brittliffe (2006) completed an online randomized control trial (RCT). The participants were 2,794 adolescents with elevated scores on the Goldberg Depression Scale. A total of 22.4 % of those identified on the Goldberg Scale participated. The effect of the treatment was significant ($F(13),131 = 2.20$). A brief introductory CBT module was not effective; however an extended CBT intervention with behavioral strategies did reduce depression.

## What Does Not Work

Nondirective supportive counseling is not effective for adolescent depression (Brent & Birmaher, 2002). Treatments received as part of usual care in outpatients treatments may not work. Weersing and Weisz (2002) found that outcomes for depressed adolescents in Mental Health Clinics (MHCs) may not work, because the MHCs have similar outcomes to control conditions in standard randomized controlled interventions.

## Evidence-Based Treatment Interventions in Residential Settings

There are few reports of effective residential or inpatient treatments. However, these treatments are regularly used to treat adolescents (Lyman & Wilson, 1992 ). Residential and inpatient services include medication, somatic treatments, electroconvulsive therapy (ECT) and psychosocial groups, plus individual and family interventions (Lyman & Wilson, 2001). Few reports of the effectiveness of residential/inpatient treatments could be found in the literature, despite the fact that such treatments are regularly used to treat adolescent problems (Lyman & Wilson, 2001). Rey, Sawyer, Raphael, Patton, and Lynskey (2002) found that around 3 % of Australians teenagers with clinical problems received inpatient services. Sawyer

et al. (2000) indicated that approximately 3 % of Australian adolescents with clinical scores on the Child Behavior Checklist received inpatient psychiatry services, while 2 % of children and adolescents with clinical disorders attended such services. Residential and inpatient services may include combinations of treatments, such as medication, other somatic treatments, e.g., ECT, and psychosocial group, individual, and/or family interventions (Lyman & Wilson, 2001).

## What Works

No published studies that have been subjected to any sort of methodological rigor could be found relating to residential treatments for adolescent depression.

## What Might Work

Given that group CBT has been found to work and individual CBT and IPT treatments show promise for adolescent depression, there is every chance that these interventions may work in a residential setting either with medication or independently. However, the outcomes have not been documented. Lyman and Wilson (2001) indicate that residential treatments based on behavioral, psycho-educational, and wilderness therapy have shown effectiveness in enhancing competencies, but specific application to adolescent depression outcomes has not been investigated.

ECT is always carried out in inpatient residential settings. However, it is not commonly used to treat children or adolescents (Duffett, Hill, & Lelliott, 1999). Findling, Feeny, Stansbrey, DelPorto-Bedoya, and Demeter (2002) found no controlled trials of this treatment. Uncontrolled trials and retrospective case reports indicate that when administered to children or adolescents with very severe symptoms or drug-resistant depression, the rate of symptom improvement across studies is 63 % in the short term (Rey & Walter, 1997). A retrospective case report study found that 58 % of adolescents, four with MDD, achieved acute remission from depression (as rated

by their treating physicians) with ECT, while 33 % were re-hospitalized within 1 year (Bloch, Levcovitch, Bloch, Mendlovic, & Ratzoni, 2001). Concerns relate to the acute and long-term side effects of this treatment, particularly with regard to cognition, verbal fluency, and memory, at least in the short term (Cohen et al., 2000). ECT may be effective for adolescents with very severe depression or treatment-resistant depression. However, it is not recommended as a first-line treatment (Rose, Wykes, Leese, Bindman, & Freishmann, 2003).

## What Does Not Work

No published studies could be found relating to residential treatments for adolescent depression that do not work. Supportive counseling is unlikely to work in a residential setting, given its lack of outpatient efficacy (Brent et al., 1997).

## Psychopharmacology

Skaer, Robinson, Sclar, and Galin's (2000) study found that 48.2 % of physician office visits for depressed children or adolescents resulted in the prescription of an antidepressant medication—50.1 % of these were for serotonin-selective reuptake inhibitors (SSRIs) and 41.9 % for tricyclic antidepressants (TCAs). Other drugs used include monoamine oxidase inhibitors (MAOIs) and other nontricyclic antidepressants, such as trazodone, bupropion, and nefazodone, and lithium (Findling et al., 2002). A review of pharmacotherapy in the treatment of adolescent depression (Masi, Liboni, & Brovedani, 2010) and three major studies examining the role of psychopharmacology and psychotherapy in the treatment of adolescent depression (Brent et al., 2008; Goodyer et al., 2007; March et al., 2004) note an increase (1992–2001) and then decline (2003–2004) in the rates of prescribing of SSRIs, the latter due to increased concern about their potential role in suicidal behavior. Throughout the ups and downs of rates of prescribing, the relative efficacy of antidepressant treatment in

general, and in combination with various psychotherapies, but particularly cognitive-behavioral therapy, has been debated. The quality of the research design, nature of the clinical populations studied, length of follow-up, etc. have produced a variety of findings that generally indicate that psychopharmcotherapy is one of, if not the most effective intervention in treating depression in adolescence.

## What Works

Reviews and meta-analyses have been conducted into the effectiveness of psychopharmacological treatments (Brent et al., 2008; Emslie & Mayes, 2001; Emslie, Walkup, Pliszka, & Ernst, 1999; Findling et al., 2002; Geller, Reising, Leonard, Riddle, & Walsh, 1999; Goodyer et al., 2007; Hazell, O'Connell, Heathcote, Robertson, & Henry, 1995; March et al., 2004; Michael & Crowley, 2002; Varley, 2003). These reviews and the Consensus Conference Panel on Medication Treatment of Childhood Major Depressive Disorder (Hughes et al., 1999) concluded that the SSRI drugs, in particular, fluoxetine (Prozac), paroxetine (Paxil), and sertraline (Zoloft) should be the first-line pharmacological treatment for child and adolescent depression. The Subsequent TADS (March et al., 2004), ADAPT (Goodyer et al., 2007), and TORDIA (Brent et al., 2008) studies provide further information regarding the efficacy of psychopharmacological treatments. At present, the only antidepressant for which there are three or more randomized controlled trials demonstrating effectiveness with adolescents is fluoxetine (Masi et al., 2010).

Fluoxetine is a *SSRI*. SSRIs are antidepressant compounds that act specifically and selectively to inhibit the reuptake of seretonin at the synapse (Findling et al., 2002). Drugs in this class include fluoxetine (Prozac), sertraline (Zoloft), paroxetine (Paxil), fluvoxamine (Luxov), and citalopram. More research has been completed on fluoxetine than any other SSRI, including multiple randomized, double-blind, placebo-controlled trials (RCPTs) (Emslie et al., 1997, 2002; Goodyer et al., 2007; March et al., 2004;

Simeon, Dinicola, Ferguson, & Copping, 1990). Fluoxetine has received US Food and Drug Administration (FDA) labeling as safe and effective for the treatment of MDD in children and adolescents (Varley, 2003).

A small study by Simeon et al. (1990) using 60 mg of fluoxetine daily found no differences in response rates between adolescents receiving placebo or the active treatment. Using larger samples, Emslie et al. found that 56 % (1997) and 65 % (2002) of children and adolescents treated with fluoxetine (20 mg daily) reported symptom reduction, compared to 33 % (1997) and 30 % (2002) of the placebo group. There were no significant group differences in aversive side effects in either study. In a 12-month follow-up of the 1997 study, Emslie et al. (1998) found that 85 % of those who received acute treatment were recovered. However 39 % of these had experienced a recurrence of MDD in the follow-up period, a rate higher than that found in adults. The TADS Team, in one of the largest investigations of pharmacological and psychotherapeutic interventions with adolescents, found a positive response to fluoxetine with CBT of 71.0 %, fluoxetine alone of 60.6 %, compared to placebo of, 34.8 %. Based on the criterion of three RCTs as well as current clinical consensus, fluoxetine is a successful treatment for adolescent depression.

## What Might Work

In open-label trials with children and adolescents sertraline (an SSRI) was effective in more than 65 % of cases (Findling et al., 2002). The pooled results of two multicenter double-blind RCPTs indicated that flexible daily doses of sertraline (50–200 mg) resulted in significantly greater symptom reduction than placebo in 6- to 17-year-old outpatients (Wagner et al., 2003). A total of 69 % of treated patients responded compared to 59 % given a placebo. Adolescents showed slightly greater symptom reduction than children. However, 9 % of treated and 3 % of placebo patients discontinued due to aversive side effects such as diarrhea, vomiting, anorexia, and agitation.

Similarly, in open-label trials paroxetine is effective and well tolerated by children and adolescents (Findling et al., 2002). Keller et al. (2001) have conducted a large double-blind RCPT of paroxetine (20–40 mg daily) compared to the TCA imipramine. Adolescents who received paroxetine showed significant reductions in depressive symptoms (63 %), compared to imipramine (50 %) and placebo (40 %). However, discontinuation due to aversive events occurred in 9.7 % of the paroxetine, 31.5 % of imipramine, and 6.9 % of the placebo groups. Eleven paroxetine patients experienced serious adverse events, including headaches, emotional lability, suicidal ideation and gestures, worsening depression, conduct problems or hostility, and euphoria, compared to two placebo group patients. Hence, the US Food and Drug Administration (2003) has recommended that paroxetine not be used for children or adolescents.

Reports of trials with other SSRIs are limited. Two small open-label trials of fluvoxamine with depressed adolescents have reported significant reductions in depressive symptomology and good tolerance of the drug (Findling et al., 2002). Citalopram treatment for adolescents with MDD, DD, or bipolar disorder was effective in 76 % of cases investigated in a retrospective case review study from a community mental health center (Bostic, Prince, Brown, & Place, 2001). Fluoxetine, sertraline, and paroxetine currently may be effective treatments for acute adolescent depression. However, in the case of sertraline and paroxetine, further investigation is required into adverse side effects.

*Monoamine Oxidase Inhibitors*: MAOIs inhibit the oxidative degradation of monoamine neurotransmitters. Older MAOIs such as phenelzine and tranylcypromine are not recommended for adolescents because strict dietary restrictions in foods that are rich in tyramine (e.g., ripe cheese) are necessary to reduce the risk of hypertensive crises. Ryan et al. (1988) completed a chart review study of 23 depressed adolescents unresponsive to TCAs who were subsequently treated with either phenelzine or tranylcypromine, alone or adjunctively. Fair to good results were achieved in 70 % of all cases, but 30 % did not comply

with the dietary restrictions. Two case reports identified phenelzine as effective for adolescents with severe, melancholic depression with psychotic features, unresponsive to TCAs or SSRIs (Strober, Pataki, & DeAntonio, 1998). Although the more recently developed MAOIs, such as moclobemide and brofaromine, are not associated with hypertensive risks or dietary restrictions, there have been no published studies of their effects with adolescents (Emslie et al., 1999; Findling et al., 2002).

*Other Nontricylic Antidepressants*: Bupropion (Wellbutrin) inhibits the reuptake of norepinephrine and dopamine. The sustained-release form of this drug has been effective in treating adults with depression (Findling et al., 2002). One open-label study by Daviss et al. (2001) showed that bupropion was associated with reductions in depressive symptomology in 16 adolescents with comorbid attention-deficit/hyperactivity disorder (ADHD) and MDD/DD. Controlled trials have indicated the effectiveness of this drug in reducing inattentitive and hyperactive symptoms (Emslie et al., 1999). Hence, it may be a useful treatment for comorbid depression and ADHD.

Nefazodone (Serzone) blocks postsynaptic serotonin and inhibits the reuptake of both serotonin and norepinephrine. It had been effective in treating adult depression (Findling et al., 2002). A retrospective case review study found that four out of seven children and adolescents with treatment-resistant depression were "much" or "very much" improved with this treatment (Wilens, Spencer, Biederman, & Schleifer, 1997). An open-label study of adolescents showed significant improvements in depressive symptomology after an 8-week treatment period (Findling et al., 2002).

Lithium is most commonly used in the treatment of bipolar disorder (Emslie & Mayes, 2001). However, it has been used in adults to prevent recurrence of MDD episodes and to augment other drugs in treatment-resistant cases. There is some evidence for a similar role in adolescence. Two retrospective case reports found lithium to enhance treatment responsiveness in adolescents who did not respond to TCAs or venlafaxine, and one open-label trial found that lithium was a helpful adjunctive treatment (Findling et al., 2002). However, no RCPTs have been completed.

*Conclusions*: The SSRIs have the strongest empirical support, and of these drugs, fluoxetine is the only one that can be considered evidence-based. Pharmacological treatments may work directly or as adjuncts to other interventions.

## What Does Not Work

The TCAs are a group of drugs that impact on the noradrenergic system by blocking the reuptake of monamine neurotransmitters. Depending on the particular compound, they also have effects on other neurotransmitter systems. TCAs that are commonly used for adolescents include imipramine (Tofranil), amitriptyline (Elavil), nortriptyline (Pamelor, Aventyl), desipramine (Norpramin, Pertofrane), and clomipramine (Anafranil). TCAs such as trazodone, bupropion and nefazodone, and lithium do not work over placebo conditions (Findling et al., 2002). Reviews have concluded that no RCPTs of TCAs with child and adolescent samples find superiority of TCAs over placebo conditions (Findling et al., 2002; Geller et al., 1999). Effect sizes were non-significant, and use of TCAs in adolescents is associated with side effects, such as dry mouth and heart problems, including reports of sudden unexplained deaths. Side effects indicate that they are not suitable for adolescents. The lack of significant treatment effects and the presence of problematic side effects indicate that TCAs do not work with adolescents.

## The Prevention of Depression

In general psychological prevention programs are effective in preventing depression, with some showing a decrease in depressive episodes of illness. Research supports both indicated interventions and universal programs. This is important as universal programs are easier to implement. There mixed findings regarding the efficacy of

prevention programs at 24 months but some efficacy at 36 months. There was evidence that targeted and universal prevention programs may prevent the onset of depression. Adolescent depression prevention programs include interventions that target adolescents with known risk factors as well as universal interventions, usually implemented in school settings (Gillham, Shatte, & Freres, 2000; Greenberg, Domitrovich, & Bumbarger, 2001; Roberts & Bishop, 2003). Michael and Crowley's (2002) meta-analysis indicated a small effect size of 0.17 based on three controlled trials published up to 1999. In a meta-analysis conducted by Stice et al. (2009), among the 32 prevention programs reviewed, 13 programs produced significant reductions in depressive symptoms, and 4 prevention programs significantly reduced the risk for the future onset of major depression. These programs included Clarke et al. (1995, 2001), Young, Mufson, and Davies (2006), Garber (2008), and Stice et al. (2008, 2009). Psychological depression prevention programs are effective in preventing depression but they appear most effective in the short term and there is little evidence of lasting effects.

Stice conducted two randomized controlled trials, Stice et al. (2007, 2008). The 2006 efficacy trial found a significant effect for depressive symptoms at post-test and 3-months follow-up. Stice et al. (2008) used an efficacy trial comparing brief selective CBT, compared to an active control and assessment-only control group. A significant effect for depression was found on the K-SADS, and a significant reduced risk for depression onset occurred up to 6-months follow-up. However 13 prevention programs made significant reductions in depressive symptoms and 4 produced significant reductions in the risk for future disorder onset compared to the control group. Other studies have found larger effects with targeted high-risk individuals. The intervention content is focused on reducing negative cognitions and problem solving. Depression outcomes and prevention efforts would be enhanced if they incorporate factors with large intervention effects. This would result in programs that are selective and targeted as compared to universal programs.

Merry et al. (2009) Cochrane Database for depression has expanded to 268 pages compared to the Merry et al. (2009) review of 21 pages and her previous review, Merry and Spence (2007), reporting 16 pages. Fifty-three studies and 14,406 participants participated in a range of trials. Only six studies included allocation concealment, hence most trials were not blind. Sixteen studies with 3,240 participants reported depressive diagnosis. The risk of a post-test depressive disorder was reduced immediately compared to no intervention. The risk of depression post-test was reduced compared with no intervention (3,115 participants had a risk $-0.09$; 95 % CI $-0.14$ to $-0.05$; $P<0.0003$) at 3–9 months (14 studies; 1,842 participants RD $-0.11$; 95 % CI $-0.16$ to $-0.06$) and at 12 months (10 studies; 1,750 participants; RD $-0.06$; 95 % CI $-0.11$ to $-0.01$). There was no evidence for efficacy at 12-months, and only limited evidence at 24 months post-test.

Across programs this review suggested that in terms of participation risk status, high-risk participants such as selective and indicated samples have produced stronger effects, particularly with high-risk youth who are motivated to complete the prevention programs (Stice & Shaw, 2004). Other moderators include the number of females. Girls have more significant symptoms than adolescent boys and intervention effects for depression are larger than those for boys. There is also evidence that stronger effects are observed with older teenagers.

In the area of school interventions, Corrieri et al. (2013) provided an overview of school-based interventions for depression and anxiety disorders, using only randomized controlled trials, with at least 100 participants. Twenty-four studies of depression were identified. These included immediate post-intervention, 6-months post-test, and long-term follow-up around 18 months. Sixteen effectiveness studies reported lower depression outcomes (67 %) compared to the control group after post-test and/or follow-up. However, eight evaluations (33 %) did not report lower depression scores. The majority of interventions were effective for depression (65 %) and the highest effectiveness was at post-test.

The long-term follow-up found that the indicated program did better for depression than the universal program. However effect size was very small.

## What Works

The Coping with Depression Course (CWD) (Lewinsohn et al., 1990) works for the prevention of depression in adolescents (Clarke et al., 1995, 2001; Garber et al., 2009). The CWD includes enhancing self-efficacy for mood management, increasing pleasant events, and decreasing unpleasant interactions. A meta-analysis of the effects of CWD on the incidence of adolescent depressive disorders found six studies aimed at prevention of new cases. These resulted in a lower risk of developing depression of 38 %, with an incidence ratio of 0.62.

Interpersonal therapy for depression prevention is a structured manualized program that addresses interpersonal issues in adolescence. Young et al. (2006) found that Interpersonal Psychotherapy for depression has very strong effects on the incidence of depression in adolescents. There are four possible treatments to be considered and include complicated grief, interpersonal conflict, role transition, and interpersonal deficits (Beekman et al., 2006; Markowitz & Weissman, 2004). Oliver, Collin, Burns, and Nicholas (2006) used a resilience building program to promote skills that enhance mental health. This included youth participation and young people's rights to be involved in decisions that affect youth and enhance connectedness, belonging, and meaningful participation.

The "FRIENDS Program" works. There have been four randomized control trials of the FRIENDS intervention (Barrett & Turner, 2001)—Universal trial (Barrett, Farrell, Ollendick, & Dadds, 2006; Barrett, Lock, & Farrell, 2005)—Universal Trial with selective stratification; Barrett et al. (2006)—Universal Trial with selective stratification; Lowry-Webster, Barrett, & Lock (2003)—Universal and selective. The Child Depression Inventory was used for assessment. The FRIENDS Program includes an adolescent program, for youth in Grade 9, providing CBT,

coping strategies, and homework activities, over a 10 weekly period of 60-min sessions. Parents attend two booster sessions and four 60-min sessions for parents by mental health professionals.

*Penn Optimism Program*: The PENN Optimism Program (POP) is a 12-session school-based intervention program based on CBT, teaching skills to reduce cognitive errors, promote optimistic attribution styles, and enhance social problem-solving and coping skills (Jaycox, Reivich, Gillham, & Seligman, 1994). The program has been implemented with groups of 10- to 13-year-olds with elevated levels of depressive symptoms and parental conflict (Jaycox et al., 1994), children of divorce (Zubernis, Cassidy, Gillham, Reivich, & Jaycox, 1999), low-income minority group children (Cardemil, Reivich, & Seligman, 2002), Chinese children (Yu & Seligman, 2002), Australian rural children (Roberts, Kane, Thomson, Bishop, & Hart, 2003), as well as universally (Patterson & Lynd-Stevenson, 2001; Quayle, Dziurawiec, Roberts, Kane, & Ebsworthy, 2001).

In a targeted controlled trial of the POP, significant intervention group differences in depressive symptoms were found at post-intervention, 6-month follow-up (Jaycox et al., 1994), and 2-year follow-up (Gillham, Reivich, Jaycox, & Seligman, 1995), but were no longer significant at a 3-year follow-up (Gillham & Reivich, 1999). The intervention group made fewer pessimistic attributions compared to the control group at all follow-ups. Analysis of effects for children of divorce from this study found that the program was effective with this at-risk sample, but that the effects diminished over time (Zubernis et al., 1999). Four targeted RCTs of this program and two small RCTs of universal applications of this prevention program have been published. Cardemil et al. (2002) showed that significant intervention effects for depressive symptoms, negative automatic thoughts, and hopelessness occurred immediately after treatment, and at 3- and 6-month follow-ups, compared to a no-intervention control group, for low-income Latino children, but not for African American children. A RCT of a Chinese version of the POP

with children with elevated depressive symptoms and parental conflict found that the program was effective in reducing depressive symptoms and enhancing optimistic explanatory styles at post-intervention and 3- and 6-month follow-ups (Yu & Seligman, 2002). Conversely, an effectiveness trial of POP with Australian rural school children with elevated levels of depression, showed no immediate or 6-month follow-up effects on depressive symptoms (Roberts et al., 2003). Instead, an effect on anxiety symptoms was apparent. Two small RCTs of universal applications of POP have been conducted in Australia. Patterson and Lynd-Stevenson (2001) found no immediate or follow-up effect of POP compared to an attention control condition. However, Quayle et al. (2001), using a shorter eight-session adaptation of POP, showed 6-month follow-up effects for depression and self-esteem in girls after their high school transition.

The POP works to prevent adolescent depressive symptoms when run in small groups in schools with pre-adolescents targeted because of increased risk factors. It has not been shown to work for African Americans or when used with non-selected groups of Australian children, and is only effective for anxiety symptoms when implemented under regular service delivery conditions. Effects on MDD and DD are unknown.

The "Penn Resiliency Program" is a CBT and social problem-solving program. Its aim is to reduce and prevent depression. The program is designed for young adolescents. It involves 12 weekly 90-min sessions that are facilitated by trained school staff. Seligman, Schulman, and Tryon (2007) used a sample of 231 college men and women in an efficacy trial of CBT targeted to negative attributions. There were significant effects for depression symptoms at 1, 2, and 3 years follow-up, compared to a control group. Seligman et al. (2007) intervened with 240 college men and women. This efficacy trial included web-based materials and email coaching was not significant. The Child Depression Inventory was used for the evaluation. Chaplin et al. (2006) also used the "Penn Resiliency Program", as did Cardemil et al. (2002) in the USA. This program has three successful trials and is hence evidence-based.

Roberts et al. (2010) implemented a universal intervention, "Aussie Optimism" including social life skills and optimistic thinking skills. Twenty weekly 1 h lessons were provided universally to primary school students. Trained staff implemented the programs and made sure that training was adhered to. A younger version of "Aussie Optimism", "Positive Thinking" (Rooney et al., 2006) was used for grades 4 and 5. Eight weekly one (1) hour per week sessions were implemented by a mental health professional.

Pössel, Horn, Groen, and Hautzinger (2004) conducted a German intervention called LISA-T. The intervention uses CBT, and the relationship between cognition, emotion, behavior, and social competence training. It uses 10, 90-min sessions presented by a mental health professional. It can be used for universal or indicated groups. Pössel, Seemann, and Hautzinger (2008) has also developed revised version called "LARS and LISA" for both girls and boys. This German program used 10 weekly sessions of 1.5 h of cognitive and social interventions, plus a motivational component. Merry et al. Cochrane's Collaboration (2009) found that psychological interventions were effective compared to no intervention immediately after post-test. This outcome related only to targeted programs where adolescents have some symptoms. Universal interventions were not significant immediately after the program, but targeted interventions were. Small effects were associated with significant reductions in depressive episodes. The overall risk, "numbers needed to treat" was 10 participants, in order to cure one teenager.

## What Might Work

*Coping With Stress Course*: In an RCT of prevention of MDD and DD in high-risk adolescents, Clarke et al. (1995) identified adolescents with depressed mood. The *Coping with Stress Course* (CWSA) consisted of 15, 45-min group sessions and involved techniques to identify and challenge negative thoughts, social skills training, activity scheduling, problem solving, and education about feelings and interpersonal behavior. Survival analysis revealed that those in

the intervention group were less likely to develop a depressive disorder (14.5 %) compared to the control group (25.7 %) at a 12-month follow-up. More recently, Clarke et al. (2001) reported on an RCT of the CWSA intervention with the adolescent offspring of adults treated for depression in a health maintenance organization. All adolescents had elevated levels of depressive symptoms and different levels of intervention were offered to adolescents with different symptoms severity. The intervention group experienced an incidence of 9.3 % at 12-month follow-up compared to 28.8 % for the usual-care control condition. The risk of depression in the control group was five times that of the intervention group. Hence, this CBT-based prevention program holds significant promise as a targeted prevention program for both adolescent depressive symptoms and disorder.

*Family-Based Prevention*: Gladstone and Beardslee (2000) review a program of research that targets youngsters whose parents have affective disorders. They compared two interventions, a family-based therapy that uses CBT and a psycho-educational approach. The six- to ten-session individual family intervention helped families to develop a shared perspective of the depressive illness, to change parents' behavior toward their children, and to promote resilience in children by providing information about the parent's illness and ways of coping and encouraging supportive relationships outside the home. The psycho-educational approach involved two short group lectures. Post-intervention and at 18-month follow-up, family intervention parents reported significantly more changes in behavior and attitudes about their illness than did families that received the psycho-educational intervention only (Beardslee et al., 1993; Beardslee, Salt et al., 1997). Children of families in the family intervention group experienced better understanding of their parent's disorder, improved communication with parents, and enhanced global functioning at 18-month follow-up (Beardslee, Wright et al., 1997). Depressive disorders occurred in 9 % of the children and adolescents in the family-based intervention, compared to 25 % in the lecture-based

condition at follow-up. Thus, family-based intervention may work.

*The Resourceful Adolescent Program*: Shochet et al. (2001) developed a universal school-based program for young adolescents, the *Resourceful Adolescent Program* (RAP-A) plus an adjunctive parent component (RAP-P). RAP-A is an 11-session program based on cognitive-behavioral, interpersonal, and family theories. The program content includes cognitive and interpersonal strategies. In a controlled trail of RAP-A versus RAP-A plus RAP-P and a monitored control group with 12–15 year-olds, Shochet et al. found that depression and hopelessness symptoms were lower in both RAP groups than the controls at post-intervention and 10-month follow-up. Rates of clinically significant symptom levels were significantly lower in the intervention groups compared to the control condition. This program was easily integrated into the school and may be the first universal intervention program to work.

*Friends*: *The Friends Program* (Lowry-Webster, Barrett, & Dadds, 2001) is an anxiety prevention program that has been used universally with children and young adolescents in schools. The program involves ten sessions run in school time and an adjunctive three-session parent program. Given that anxiety frequently coexists or predates depression, anxiety prevention may act as a prevention strategy for depression (Cole, Peeke, Martin, Truglio, & Seroczynski, 1998). Lowry-Webster et al. (2003) showed that children and adolescents with elevated anxiety scores at pre-intervention reported improvements in depression symptoms at post-interventions and 12-month follow-up (Lowry-Webster et al., 2003). Hence, anxiety prevention programs that are implemented in late childhood period may work to prevent adolescent depression.

*Conclusions*: Targeted CBT-based depression prevention programs may work to prevent depressive symptoms and disorders in adolescents with elevated levels of depressive symptoms, as well as in the offspring of depressed adults. Of the

targeted interventions Clarke et al.'s (1995) CWSA program shows the most promise. Universal school-based depression and anxiety prevention programs may also be effective in preventing depressive symptoms.

## What Does Not Work

Information on depression prevention strategies for adolescents that do not work comes mostly from trials of universal applications of depression prevention programs. Clarke, Hawkins, Murphy, and Sheeber (1993) studied two short, low-intensity interventions incorporated into mandatory health classes for ninth- or tenth-grade students based on a behavioral theory of depression, and designed to encourage adolescents to increase their rates of pleasant activities. The results of an RCT indicated no effect on depression for girls, a short-term effect for boys at post-test, but no effects at 12-week follow-up. A second study involved a five-session skills development program targeting pleasant events and irrational thinking styles. The results indicated that the program was ineffective in the short term and at 12-week follow-up. The programs may have been too brief to impact on symptomology. Spence, Sheffield, and Donovan (2005) and Sheffield et al. (2006) implemented universal effectiveness interventions but no effects for depression were significant.

Petersen, Leffert, Graham, Alwin, and Ding (1997) report on a universal 16-session psycho-educational program, based on stress and coping skills models of adolescent depression. The intervention resulted in better coping in both girls and boys and reductions in depressive symptoms in girls in the short term, compared to the control group. However, depressive symptoms were increased among boys in the intervention and intervention effects did not persist over time. The authors suggested that the intervention was too brief. A recent RCT of the *Problem-Solving for Life Program*, conducted by Spence, Sheffield, and Donovan (2003) found no effects at 12-month follow-up on depressive symptoms or depressive disorders in 12- to 14-year-olds, after teachers implemented the 8-week universal depression prevention program. Finally, Hains and Ellmann (1994) reported a trial of a targeted school-based stress inoculation program for adolescents with high levels of arousal. The 13-session group and individual program involved a variety of CBT strategies. No effects on depression or anxiety symptoms at post-intervention or follow-up were identified in a RCT.

*Conclusions*: Strategies that involve brief interventions, whether targeted or universal, are unlikely to have lasting preventive effects. Further, brief interventions that are based on stress and coping models have not demonstrated maintenance.

## Recommendations

Adolescent depression is a serious problem that is affecting more youngsters than ever before. It creates a significant burden for adolescents, their families, and teachers. In addition, it leaves adolescents vulnerable to a lifetime of poor mental health. Treatment and prevention programs have been developed with an emphasis on individual risk and resilience factors. However, family and community risk and resilience variables are also important in the development and maintenance of adolescent depression treatment.

The research literature indicates that psychosocial treatments, in particular CBT-based treatments, for adolescent depression, work, for example, the CWDA group program (Clarke, DeBar, & Lewinsohn, 2003). However, there is still some way to go to ensure that such interventions are implemented effectively as part of regular healthcare systems. Both CBT and IPT administered individually may be effective in treating adolescent depressive disorders and symptoms, and CBT administered by way of bibliotherapy may be effective for reducing symptoms. The evidence for FT is less promising, but it may work in some cases. The current research base suggests that the variety of treatments received as part of usual care in outpatient MHCs in the USA may not work (Weersing & Weisz, 2002).

Group and individual CBT and IPT treatments may work in a residential setting either with medication or independently. Other effective residential treatments have not been specifically applied to adolescent depression (Lyman & Wilson, 2001). ECT carried out in residential settings may be an effective treatment for adolescents with very severe depression or treatment-resistant depression, but there remain concerns about aversive effects and it is not recommended as a first-line treatment (Rose et al., 2003).

As a class of drugs, SSRIs may work to treat depression in adolescents. Of the SSRIs fluoxetine works, with or without accompanying CBT. Other pharmacological treatments may work directly or as adjuncts to other interventions. Lack of treatment effects and associated side effects indicate that TCAs do not work in adolescents (Findling et al., 2002).

Psychosocial CBT-based interventions, for example, the POP program (Jaycox et al., 1994), work to prevent adolescent depressive symptoms when run in small groups in schools with pre-adolescents targeted because of increased risk factors. Targeted CBT-based depression prevention programs, for example, the CWSA program (Clarke et al., 1995), may work to prevent depressive disorders in adolescents in school-based settings, as well as in the offspring of depressed adults. Universal school-based depression and anxiety prevention programs may be effective in preventing depressive symptoms. However, their effects on the incidence of depressive disorders are as yet unknown. Strategies that involve brief interventions, whether targeted or universal, are unlikely to have lasting preventive effects.

The evidence base for the effectiveness of treatments and preventions for adolescent depression is promising. Psychosocial treatments, in particular CBT and IPT approaches, currently hold the most promise. The SSRI fluoxetine has the most evidence of effectiveness of all pharmacological treatments. Further research is needed in the area of family-based interventions and interventions for treatment-resistant adolescent depression. More RCTs of promising interventions will be important in the future.

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# Bipolar Disorder

Jacklynn Fitzgerald and Mani Pavuluri

## Introduction

Pediatric Bipolar Disorder (PBD) is a complex disorder with dysfunction across both affective and cognitive domains and distinguishable by the presence of manic episodes. These episodes are identifiable as abnormally high mood that presents in children as excessive excitability with uncharacteristically elated and activated temperament. Often times this state is mixed with irritability, hyperactivity, hypersexuality, and grandiosity or an aura of inflated self. In conjunction, academic difficulties and a high risk for substance abuse (Wilens et al., 1999) are prevalent. The classification of bipolar disorder is divided into three categories that can be also applied to PBD: Types I and II and Not Otherwise Specified (NOS). When differentiating PBD from adult onset bipolar disorder, it is commonly understood that pediatric onset is marked by a shorter duration and less

clearly defined manic episodes (Washburn, West, & Heil, 2011) yet is still identifiable as a fluctuation of mood marked by highs and lows. Termed "rapid", or "ultra-radian cycling", this presentation appears as chronic affect dysregulation that may be rooted within the disorder and underlying DSM-defined manic or mixed episodes. In this way, PBD may be distinguishable from chronic irritability due to waves of mania and depression despite such underlying residual chronic morbidity. Given these unique presentations, it is important to note that the rate of switching from NOS to Type II is higher in PBD than adult onset bipolar disorder (Birmaher & Axelson, 2006). Adding to the complexity, PBD can present with a host of comorbid diagnoses, most commonly ADHD. Impulsivity and hyperactivity that are trademarks of ADHD can often cloud or hide the true episodic nature of PBD, making it difficult to accurately characterize the disorder. The treatment of PBD is also difficult, considering potential overlap in symptom presentation with traits of typically developing adolescents.

Despite obstacles given the diversity in comorbidity and domain dysfunction, there exist criteria for assessing common symptomatology. Seventy percent or more of PBD cases share common symptoms of mania (Kowatch, Youngstrom, Danielyan, & Findling, 2005) and the cluster of elated mood or irritability along with three or more associated manic symptoms defines this illness rather than any single symptom by itself

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(McClellan, Kowatch, Findling, & Work Group on Quality Issues, 2007). Understanding the nuances of this disorder in relation to the overlap between symptom presentation and brain functioning will help in identifying sound treatment approaches.

## DSM-V and Incidence/Prevalence Rates of Pediatric Bipolar Disorder

The prevalence of BD—Type I is estimated to be 1 % of the adolescent population when considering self-report measures (Goldstein & Birmaher, 2012; Lewinsohn, Klein, & Seeley, 1995). When considering subtypes of the disorder (Type II, NOS), the prevalence rate grows to just over 6 % (Kessler et al., 2009). DSM-V criteria remain largely unchanged for the assessment of PBD and, as the primary focus, takes into account episodes of mood fluctuation with impairment in functioning, markedly distinct from normal developmental trajectory. Three or more associated symptoms such as grandiosity, decreased need for sleep, pressured speech, flight of ideas, distractibility, increased goal-directed activity, psychomotor agitation, and hypersexuality, must also be present during episodic hypomania/mania. A new diagnostic category emerged in DSM-V with Disruptive Mood Dysregulation Disorder (DMDD), a disorder that includes chronic irritability and temper tantrums with no episodicity and therefore differs qualitatively from BD-NOS. Even though the PBD and DMDD share common symptoms of affect dysregulation, and while BD-NOS episodes may not always meet duration or symptom criteria, the unique mood fluctuation inherent in PBD and the critical mass of manic symptoms sets bipolar spectrum disorders apart.

## Biological and Genetic Factors

### Biological Factors

While the brain is highly complex in its organization, a cohesive picture of neural biological markers of the disorder is emerging with the support of structural and functional neuroimaging findings. The neural architecture of PBD includes fronto-limbic dysfunction with a hyperactive limbic system and underactive prefrontal cortex (PFC). Decreased activity in PFC regions such as dorsolateral prefrontal cortex (DLPFC) and ventrolateral prefrontal cortex (VLPFC) implicate deficits in cognitive processing (e.g., attention, memory) and emotion processing and the hyperactive and dysregulated limbic system also suggests further affect instability in the affective circuitry (Wegbreit & Pavuluri, 2012).

*Limbic dysfunction*. First, in addressing limbic system dysfunction, smaller amygdala size has been shown to be a neural correlate of the disorder (Frazier et al., 2005; Pfeifer, Welge, Strakowski, Adler, & DelBello, 2008) and may correlate with increased activation in the area in response to an emotional trigger. Findings such as these hypothesize that smaller volumetric size may actually account for dysfunction. Neuroimaging findings from PBD studies demonstrate the extent to which patients over-engage the amygdala during illicit emotion processing in comparison to healthy controls (HC) (Pavuluri, O'Connor, Harral, & Sweeney, 2008). Over-engagement of this region remains in spite of reducing manic symptoms (Passarotti, Sweeney, & Pavuluri, 2011) and the recruitment of the region occurs while passively viewing emotional stimuli (Wegbreit et al., 2011). During a face processing task in which patients were shown emotional faces and prompted to either indicate the age of the face (incidental emotional processing) or the valence of the emotion (directed emotional processing), euthymic PBD patients recruited the amygdala more than HC during incidental processing. These findings further suggest that a possible biomarker of PBD is associated with dysfunction in this region and automatic emotional reactivity (Pavuluri, Passarotti, Harral, & Sweeney, 2009).

We do not yet know, however, if abnormalities in this region predate symptom presentation. A recent study found no differences in amygdalar size between those at risk for PBD (i.e., offspring of bipolar disorder patients) vs. HC peers, suggesting that it may be the presence of mania itself that accounts for structural anomalies.

Until follow-up studies are completed that track structural changes in the brain pre- and post-manic episodes, no definitive understanding of the relationship between amygdala size and the effects of mania can be deduced (Karchemskiy et al., 2011).

*Prefrontal dysfunction*. Dysfunction of PFC further characterizes the biological mechanisms of this disorder. Certainly, while the study of cognitive control within PBD is largely shaped by interest in the PFC's ability to regulate emotional reactivity, prefrontal dysfunction exists concurrently outside the realm of emotional control. Consistent neuroimaging findings have demonstrated the over-recruitment of this region, in particular the DLPFC, during completion of successful response inhibition (Nelson et al., 2007; Singh et al., 2010). In contrast and during unsuccessful motor control, PBD patients in comparison to HC have shown a decreased recruitment of ventral PFC (Leibenluft et al., 2007). In the appraisal of punishment during incorrect reversal learning trials, it has further been revealed that PBD patients over-engage the dorsomedial prefrontal cortex (DMPFC) (Dickstein et al., 2010). Compensatory over-recruitment of prefrontal regions appears necessary during reappraisal of a situation and in order to successfully meet cognitive demand. Conversely, prefrontal underengagement may hinder executive functioning. Linking structural abnormalities with measures of behavior, reduced grey matter volume in the prefrontal regions of the DLPFC and orbital frontal cortex (OFC) have been linked to poor problem solving and executive functioning capabilities (Frazier et al., 2005).

Factoring in the task of affective processing further enhances our understanding of prefrontal dysfunction within PBD. Here, studies similarly demonstrate the over-recruitment of the VLPFC and DLPFC during explicit and active emotional appraisal of negatively valenced stimuli (Chang et al., 2004; Passarotti, Sweeney, & Pavuluri, 2010). In contrast, the appraisal of positively valenced stimuli for PBD in comparison to HC results in over-activation of the left anterior cingulate cortex (ACC).

In investigating the role of the OFC and dorsal ACC (dACC) as biological correlates of emotional appraisal, it has been demonstrated that both PBD patients and their at-risk siblings showed decreased OFC and increased dACC during a sad mood induction task (Kruger et al., 2006). These brain regions, working in tandem, help emotional evaluation processes. Considering at-risk subjects showed similar patterns of brain engagement as their affected siblings, dysfunction within these regions may signify a trait of the disorder (Kruger et al., 2006). Switching into unconscious and passive emotional appraisal, it has been shown that PBD under-recruit VLPFC while simultaneously over-engaging the amygdala (Pavuluri, O'Connor, Harral, & Sweeney, 2007). This last finding appropriately demonstrates the unique, interdependent connections between both limbic and prefrontal regions and helps explain differences of either over- or under-engagement of the PFC. Over-engagement of the amygdala during an emotional trigger may, in turn, be directly related to an inability to recruit the prefrontal areas during appraisal and regulation.

*Connectivity*. Diffusion tensor imaging (DTI) studies help shape our understanding of abnormalities within the fiber tracts that connect prefrontal and limbic regions. DTI studies involve characterizing the movement of water molecules across the white matter neural fibers that reveal the integrity of the direction of the flow along the fibers longitudinally as well as across the diameter of the fibers. The DTI structural parameters signal the viability of white matter fibers in transmitting the synaptic messages. The DTI studies in patients with PBD patients implicate a compromised integrity of white matter tracts, particularly involving the fronto-striatal and fronto-limbic regions (Pavuluri, Yang, et al., 2009). Building on these findings, a recent study on white matter tract abnormalities in PBD vs. adult bipolar disorder revealed greater deviations in white-matter microstructure in the left anterior limb of the internal capsule in PBD relative to adults (Lu et al., 2012). In encompassing limbic and thalamo-cortical projections to the frontal

lobe, this region is believed to be involved in the top-down processes from the PFC during affect regulation. While deficiencies in the circuit persist throughout the lifespan, these abnormalities are principally impaired within childhood. Treatment options that target the predominant neural biological features, at regions both within the limbic and prefrontal areas as well as at the circuit interface, may be most promising in addressing dual cognitive and affective dysfunction.

## Genetic Factors

There is a high genetic load to the prevalence of PBD. When comparing against PBD prevalence rate of 0.5–1.5 % for the general population, the rate of diagnosis for a first-degree relative jumps to 5–10 %. Further, data derived from twin and family studies suggest an even higher prevalence rate of 59–87 % (Craddock & Sklar, 2009; Miklowitz & Chang, 2008). In demonstrating the heritability of the broader bipolar disorder phenotype, offspring of adults with bipolar disorder are 2.7 times more likely to develop a psychiatric disorder in general, with a fourfold increase in risk for the development of a mood disorder in particular (LaPalme, Hodgins, & LaRoche, 1997).

Given this relationship, there is considerable effort to understand the genetic factors that predispose PBD, however no identification of a single gene can yet account for the majority of PBD cases (Craddock & Sklar, 2009). While many investigations employ meta-analytic methods in order to detect potentially shared loci within genetic data summaries, a recent collaborative analysis of 11 bipolar linkage scans identified two regions in particular that demonstrate genome wide significance: 6q21–q25 and 8q24 (Craddock & Sklar, 2009). Schizophrenia research has identified three candidate genes that may also be implicated in bipolar disorder: *DISC1*, *DAOA*, and *NRG1*. Several independent datasets have recognized *DAOA* as increasing susceptibility of bipolar disorder. While not a direct link, *NRG1* has been identified in schizoaffective disorder, a shared phenotype between schizophrenia and bipolar disorder. This last

finding attempts to trace specific disease traits, moving beyond the diagnosis, and brings to light an important consideration in the genetic link for bipolar disorder given various subtypes and the diversity of symptomatology (Craddock & Sklar, 2009). Towards this, the identification of a genetic link to faulty neurocognitive processing may assist in identifying the pathogenesis of PBD given the predominance of this trait in the disinhibition of emotional reactivity. A recent genetic review on precursors to neurocognitive dysfunction in particular identified both COMT and TPH2 genetic variants as linked to neurocognitive deficits via abnormal prefrontal functioning. This link is theorized to clarify further the genetic precursors for emotional dysregulation (Van Reenen & Rossell, 2013).

## Individual Factors Influencing Risk and Resiliency

### Risk

Identifiable risk factors influencing onset of PBD include (1) emotion processing abnormalities, (2) heightened emotional reactivity, and (3) deficits in neurocognitive functioning and academic performance (Pavuluri et al., 2007; Rich et al., 2010; Vonk et al., 2012). These behavioral manifestations of the disorder coincide with what we know to be true in terms of dysfunction at the level of neural substrates yet are visibly identifiable. In turn, their identification may assist in proper diagnosis and subsequent treatment. To provide evidence in the predictive nature of each trait, the study of shared symptom presentation across disease states offers optimal insight into possible inherent attributes of the disorder.

*Emotion processing abnormalities*. When making appraisals on the emotional valence of a stimuli, both manic and mixed patients have a tendency to rate neutral stimuli as affective in nature (Kim et al., 2011; M'Bailara et al., 2012) although the mis-rating of stimuli as either positive or negative in nature differs between studies. Regardless, the capacity to attribute emotional meaning to non-emotional situations is a clear

defining characteristic not dependent on illness state. Furthering this notion, in comparing acutely ill and euthymic patients, PBD have also consistently demonstrated deficits in ability to correctly identify both happy and sad facial expressions (Schenkel, Pavuluri, Herbener, Harral, & Sweeney, 2007). A comparison study between severe mood dysregulation (SMD) and PBD offers insight into abnormal processes of selective emotional attention and helps clarify the unique nature of this process in PBD. SMD is a disorder marked by chronic irritability, arousal, and hyperreactivity, but which lacks the episodicity and mania that define PBD. In terms of shared affect dysregulation, the two disorders lend themselves to comparison where findings may elucidate individual differences. On a task testing response time to non-emotional stimuli in light of sporadic emotional distractors, SMD patients sustained focus across both non-emotional and emotional trials while PBD patients exhibited increased reaction time when an emotional distracter was used. This finding proposes that while both patients share common emotional dysregulation symptoms, PBD patients possess an inherent emotion-influenced cognitive response that may be dependent on selective emotional attention (Rich et al., 2010).

*Heightened emotional reactivity*. Manic and mixed patients further share symptoms of heightened emotional reactivity (Henry et al., 2012), a symptom complex in nature given integral procedures of reappraisal and regulation. Euthymic patients have been found to exhibit hypersensitivity to emotional stimuli and enhanced arousability, suggesting that some elements of emotional reactivity exist even in the absence of episodic mood lability (Henry et al., 2012). Neuroimaging findings support that euthymic patients exhibit abnormal prefrontal activation during disinhibition of a response during emotional face stimuli. While preliminary, these findings uncover dysfunctional mechanisms for the control of emotional reactivity and are evident even in asymptomatic patients (Hummer et al., 2013). Temperamental disinhibition, as a measure of emotional dysregulation, may additionally be a unique feature of the disorder as difficult temperament during infancy and toddlerhood has been

predictive in the later diagnosis of PBD (West, Schenkel, & Pavuluri, 2008). Additionally, identification of ebb and flow of temperament disinhibition early in life may help predict switch from Major Depression Disorder (MDD) to PBD (Kochman et al., 2005).

*Neurocognitive and academic deficits*. In comparison to HC, both euthymic/medicated and manic/unmedicated PBD experience reduced neurocognitive capabilities across the domains of executive functioning, attention, verbal memory, visuospatial memory, motor skills memory, and working memory (Pavuluri, O'Connor, Harral, Moss, & Sweeney, 2006). While PBD may improve in all domains while undergoing a medication algorithm, as a group they continually underperform compared to their healthy peers as is evidenced during a 3 year follow-up study tracking both symptom and neurocognitive improvement (Pavuluri, West, Hill, Jindal, & Sweeney, 2009). Adding to our understanding of how persistent neurocognitive deficits such as these may present inside the classroom, a study of PBD-specific deficits in the realms attention, working memory, verbal memory, and executive function were found to predict reading and writing difficulties in school. In this same study, PBD attentional difficulties predicted math difficulty (Pavuluri, O'Connor, et al., 2006). Adding to our understanding of academic difficulty as a specific risk factor, a recent twin study confirmed that PBD underperformance within school in comparison to HC peers persisted for several years before the onset of the first manic episode (Vonk et al., 2012). Such underperformance in school, as measured in special education needs or grade repetition, was also prevalent for the PBD's unaffected twin pairs and supports the notion that genetic risk may be associated with early and persistent academic difficulty (Vonk et al., 2012).

*Substance abuse*. While the risk for the development of a substance abuse disorder is high for many mental illnesses (Salvo et al., 2012), the correlation to PBD is of real concern given a range of prevalence between 3.7 and 39 % (Jolin, Weller, & Weller, 2007). In a study investigating the temporal relationship between development

of bipolar disorder and substance abuse, 45 % of comorbid patients were found to develop substance abuse problems before the onset of mania (Strakowski et al., 2005). This suggests that substance abuse patterns within an affected child may act as a risk factor for the diagnosis of PBD.

*Gender differences*. Many studies have confirmed no gender differences in terms of the prevalence of PBD (Biederman et al., 2004; Duax, Youngstrom, Calabrese, & Findling, 2007; Scott et al., 2013); however a recent study identified differences as they relate to illness state. A review of nearly 800 bipolar youth participants during the onset of outpatient treatment revealed that boys presented with higher rates of mania while girls presented with higher rates of depression (Duax et al., 2007). These findings have not been replicated, however, and research on the topic of gender differences within PBD is scarce. Inconsistencies in findings within adult bipolar clinical presentation and response to treatment make it difficult to predict with any certainty whether true gender differences exist.

## Resiliency

The management of sleep, meal, and exercise routines via the use of social rhythm stabilization, simply put, a routine that is organized around sleep–wake cycles has been found beneficial in protecting individuals against relapse (Jolin et al., 2007; Pavuluri, Graczyk, et al., 2004). Due to the fact that sleep disturbances precede the onset of manic and depressive symptoms, sleep hygiene has potential to act as a resiliency factor (Boland & Alloy, 2013). The development of self-esteem may be important in the treatment of PBD as well, as has been demonstrated during a 9-month follow-up study tracking depression symptom recovery. While self-esteem correlated with decreasing relapse rates for depressive symptoms, it was not correlated with impacting relapse rates for manic symptoms (Johnson, Meyer, Winett, & Small, 2000). Although it is common for psychosocial treatments to address issues of self-esteem and

even though these approaches remain critical in the treatment of PBD, results such as these demonstrate that therapies often times have differential outcomes on the impact of both mania and depression.

## Family Factors Influencing Risk and Resiliency

### Risk

Affect dysregulation in non-PBD affected family members may signal or precede PBD, as has been established with heritability studies (Scott et al., 2013). In a comparative study investigating family history differences between PBD and unipolar depression, PBDs reported a higher prevalence rate of mental illness in general within their family history (Scott et al., 2013). Parental diagnosis in particular strongly predicts child mood dysregulation with evidence to suggest that familial transference from female probands is nearly double than that of males (Currier, Mann, Oquendo, Galfavy, & Mann, 2006). While the evidence is strong for a genetic heritability, familial factors within the environment may also influence the disease trajectory as has been demonstrated in a recent analysis derived from the Longitudinal Adolescent Manic Symptoms (LAMS) clinical sample. In this investigation, the heritability of manic symptoms was studied in a large sample of parents of children with elevated symptoms of mania. Here, heritability of mania was not replicated for children subsequently diagnosed with PBD and ADHD comorbidity, yet was true in the transference of pure PBD from parent to child. In evaluating how familial factors may influence this link between parental and child mania, it was hypothesized that the complexity of an ADHD comorbid diagnosis may cloud the need for treatment and delay diagnosis. In contrast, families with a familiarity with bipolar symptoms may easily identify the disorder in their own children, thus resulting in a referral for treatment and subsequent diagnosis (Arnold et al., 2012). Family interactions also play a role in functioning, especially in terms of family

cohesion and feelings of support. In a study examining social and familial functioning for PBD Type I and Type II patients, reported levels of parent-related aggression were strongly correlated with the quality of relationships within the home. This, in turn, was correlated with mood symptoms for the affected child (Keenan-Miller, Peris, Axelson, Kowatch, & Miklowitz, 2012). Acts of aggression are not necessarily directed at the affected child yet nevertheless have significant impact on their affective functioning. Further, it has been proposed that PBD experience less maternal warmth and greater maternal and paternal tension in comparison to HC and youth with ADHD (Alloy et al., 2005). High emotional reactivity or expression within the home may also predict greater risk of disease relapse (Alloy et al., 2005). Furthering an understanding of the link between PBD and substance abuse, there is research to suggest that alcoholism within the family, either at the level of parent or grandparent, is associated with increased risk for the development of an affective disorder in the child (Jolin et al., 2007).

## Resiliency

Alongside treatments that address mania and depression, addressing parental-aggression within the family context may promote symptom recovery. While aggression centered on the affected child is rare, episodes more typically trigger aggression between parents during the attempt to address and cope with a manic episode. Families that are educated on the topic of PBD within the family context may discover more positive and beneficial coping skills that replace aggressive tendencies and improve quality of life for the affected child (Keenan-Miller et al., 2012). In this way, psychoeducation has been shown to be efficacious in positively influencing disease trajectory (Beardslee et al., 1998; Fristad, Gavazzi, & Mackinaw-Koons, 2003; Miklowitz et al., 2000) via its ability to directly influence parental disagreements over treatment practice and increase concordance (Fristad et al., 2003).

## Social and Community Factors Influencing Risk and Resiliency

### Risk

It has been found that youth at high-risk for the development of PBD show deficits across domains of social reciprocity, including social awareness, social cognition, social communication, social motivation, and autistic mannerisms. Although no longitudinal follow-up assessment was completed to relate these findings with switch into mania, it is hypothesized that for children of affected parents who themselves possess clinically significant symptoms of affect instability, psychosocial impairments may predate the development of PBD (Whitney et al., 2013). Determining whether psychosocial deficits are a consequence of the potentially socially isolating nature of mental illness or, rather, represent neural substrates of the disease is currently unknown (Whitney et al., 2013). In the translation of these deficits into measures of global functioning, there is evidence to suggest that PBD females experience more pronounced recreational-related deficits related to psychosocial impairment and are less satisfied with their overall level of functioning. Overall, PBD are found to experience mild to moderate impairment in work-related functioning across genders and illness states (Goldstein et al., 2009), perhaps due to persistent symptom presentation throughout recovery (DelBello, Hanseman, Adler, Fleck, & Stakowski, 2007). Impact from stressful life events has been demonstrated to increase the risk for onset of episodes for bipolar disorder in general and is suggested to operate via the disruption of the circadian rhythm (Alloy et al., 2005). Evaluating the type of specific life events that may affect a child with PBD in particular may be helpful in identifying more specific risk factors. Towards this aim, in an evaluation of potential triggers for students with bipolar spectrum (Type II, Cyclothymia), it was found that goal-attainment related stressors just prior to final exams predicted hypomanic episodes. These pre-exam stressors, however,

did not predict changes in depressive episodes (Alloy et al., 2005). The effect of decreased social support has been well researched with findings demonstrating that PBD report less support systems than control groups (Alloy et al., 2005). In evaluating the effect of this on disease trajectory, some research suggests that fewer attachments and decreased social integration is associated with prevalence of mania, but not prevalence of depressive episodes (Alloy et al., 2005). This finding, however, is not consistent across the literature as a prospective follow-up study demonstrated that levels of social support were equivalent for manic and depressive relapse rates (Johnson, Lundström, Aberg-Wistedt, & Mathé, 2003). Across the bipolar spectrum, it is evidenced that perceived poor social support negatively impacts recovery time and predicts greater relapse rate (Johnson et al., 2003).

## Resiliency

High self-report of social support has been correlated with reduction of depressive symptoms but, as has been demonstrated in the review of self-esteem, it has not been shown to have an effect on reducing manic symptoms in particular (Johnson et al., 2000).

## Evidence-Based Treatment Interventions for PBD

Pharmacotherapy, combined with psychotherapy, together offers the best chance for symptom recovery. In this way, we first explore evidence from treatment trials and the mechanisms by which medications have a direct impact on the brain. A survey of best practices for the augmentation of these efforts with the addition of therapy strategies is provided.

*Pharmacotherapy Intervention.* Efficacy of particular pharmacotherapy agents can be derived by reviewing treatment outcomes from both open-label and double-blind placebo-controlled trials. First, traditional mood stabilizers (lithium carbonate, divalproex sodium, and carbamazepine) demonstrate moderate efficacy although randomized trials produce mixed results. The use of adjunctive psychotropics may also mask symptom recovery produced by the primary drug of study (Liu et al., 2011). Topiramate and oxcarbazepine are not reported as efficacious in the treatment of PBD, which is consistent also with findings from adult studies. Conversely, lamotrigine appears as a promising treatment through open-label trials (Liu et al., 2011; Pavuluri, Henry, et al., 2009) and as an add-on, during which it reduced manic, depressive and aggressive symptoms (Chang, Saxena, & Howe, 2006). The efficacy of second generation antipsychotics (SGA's) has been studied in both open-label and randomized trials, where it was found to reduce manic symptoms (Pavuluri et al., 2010). Associated side effects with this pharmacotherapy option included significant weight gain.

The use of pre- and post-neuroimaging assessment offers insight into the functional changes occurring in the brain during intervention. In particular, studies during the past several years have correlated efficacy of certain pharmacological treatments with either increased or decreased activity within brain regions that also map onto improvements in behavioral performance. With the use of lamotrigine for depressed PBD, treatment was found to decrease right amygdala activity during an emotional evaluation task, which in turn was correlated with a reduction in depressive symptoms (Chang, Wagner, Garrett, Howe, & Reiss, 2008). In demonstrating combination of mood stabilizer and SGA's, a study that employed lamotrigine with SGA's demonstrated increased VLPFC during a task that evoked cognitive challenge in light of emotional distraction. This increase in VLPFC activity related to improvement of manic symptoms (Passarotti et al., 2011). The comparative effects of risperidone and divalproex were evaluated using this same task and findings demonstrated that while both agents improved manic symptoms over 6 weeks of treatment, the mechanisms by which this was accomplished differed. While divalproex increased activation in left VLPFC, risperidone increased activation in left ventral striatum. Both medications correlated symptom improvement with reduced activation in amygdala (Pavuluri, Passarotti, Lu, Carbray, & Sweeney, 2011).

Finally, a study of the functional connectivity between brain regions was also used to assess responsivity to medication treatment and demonstrated that responders to pharmacotherapy (either mood stabilizer or SGA) exhibited greater connectivity of the amygdala into a fronto-limbic network in comparison to nonresponders (Wegbreit et al., 2011).

## Psychotherapy Intervention

*Cognitive Behavioral Therapy* (CBT). While the administration of modules may be flexible, CBT targets negative thought patterns and, in particular, offers strategies for managing mood and cognitive restructuring (Reilly-Harrington & Knauz, 2005). During a 12-session open-trial and in combination with mood-stabilizing medication, CBT was found to reduce both manic and depressive symptoms (Feeny, Danielson, Schwartz, Youngstrom, & Findling, 2006). Assessing long-term symptom recovery over a 5-month period, CBT was efficacious in treating depressive symptoms, however did not reduce signs of mania. This finding alludes to the reality that while CBT may initially address mania, treatment effects may not be sustainable (Reilly-Harrington et al., 2007). Over a 72-week period, CBT did alleviate symptom burden and reduced relapse however was not found to be superior in comparison to psychoeducation alone (Parikh et al., 2012).

*Dialectical Behavior Therapy* (DBT). The target of DBT is affect dysregulation and in this way shows promise in the treatment of PBD. Through a 1-year open trial of DBT that incorporated skills training in a multifamily group format as well as psychoeducation, symptoms of emotional dysregulation within the affected child normalized. Further, ratings of suicidal behavior decreased considerably (Goldstein, Axelson, Birmaher, & Brent, 2007).

*Family-based treatment strategies*. Family-Focused Treatment (FFT) for adolescents has been found beneficial in its ability to use the family as a vehicle to strengthen communica-tion and problem solving skills while also promoting psychoeducation. FFT success hinges on the development of coping mechanisms to address mood dysregulation at home that in turn translate into better quality of life within other environments, such as school. FFT may be most beneficial when combining with medication treatment. In a 1-year open trial of FFT in conjunction with mood stabilizing mediation, an improvement in both mania and depression symptoms (46 % and 38 % improvement, respectively) was found (Miklowitz et al., 2004). In assessing the long-term implications, a 2-year combined FFT trial with pharmacotherapy vs. treatment as usual resulted in a recovery from depression symptoms with no impact on residual mania (Miklowitz et al., 2008). Multifamily Psychoeducation Groups (MFPG) aim to strengthen parental understanding of diagnostic criteria and symptom presentation with a concerted focus towards identifying the cyclical nature of the disorder. In a group-therapy setting that also included parents of children with major depressive disorder, MFPG was found to successfully complete three main treatment objectives: increase feelings of support, foster the development of skill-sets, and increase positive attitudinal change (Fristad, Goldberg-Arnold, & Gavazzi, 2002). Interpersonal and Social Rhythm Therapy (IPSRT) targets interpersonal problems as a way to alleviate stressors that may disrupt neurotransmitter release and circadian rhythm. As this neuronal unit functions as a capable "psychotherapy unit" at the mind body interaction, a collection of a thorough history of interpersonal relations may modify and impact physiology at a minute level of human reactivity. The mechanism by which this treatment may be truly impactful relies in the regulation of the sleep cycle (Hlastala & Frank, 2006). The use of IPSRT for the PBD population has been demonstrated by Hlastala and her colleagues during an open 20-week trial in which global functioning increased while mania and depression scores reducing by 67.0 % and 53.2 %, respectively (Hlastala, Kotler, McClellan, & McCauley, 2010). To date, there are no double-blind randomized controlled trials that can control for possible psychopharmacology confounds.

*Combination treatment options*. A recommended best practice in terms of choosing an appropriate psychotherapy treatment may hinge on combining methods that have shown promise in alleviating PBD symptomatology on their own. In this respect, a Child and Family-Focused CBT (CFF-CBT) approach first centers on improving the confidence of parents in becoming effective agents in the treatment program by integrating psychoeducation, interpersonal therapy, mindfulness and positive psychology. In conjunction, CBT is employed to target behavioral difficulties while systematically engaging in cognitive problem-solving strategies. The structure of CFF-CBT takes advantage of building self-efficacy for both the child and family by fostering an understanding of the disorder as a neurobiological reality and a result of affect dysregulation. The implementation of RAINBOW therapy is an example of CFF-CBT that operates via therapy sessions to both parents and children while spanning individual, family, peer and school domains: R = the importance of a routine (includes sleep hygiene), A = affect regulation/anger control (includes knowledge about the disorder, medication, life charts), I = "I can do it" (positive self-statements), N = no negative thoughts (restructuring negative thinking/living in the "now"), B = be a good friend/balanced lifestyle (also used for parents), O = "Oh, how can we solve it?" (interpersonal and situational problem-solving), W = ways to ask and get support (building a support system). The reliability of the RAINBOW program has been demonstrated during both a short- and long-term efficacy trial. A short-term open trial of 12 weeks of RAINBOW treatment, completed in a group setting, resulted in a reduction in mania scores (West et al., 2009). When exploring the feasibility of a maintenance model for RAINBOW, the positive effects following initial 12-week period were sustained long-term. Global functioning scores across domains of mania, depression, ADHD, psychosis, aggression, and sleep disturbances were significantly reduced following the initial 12 weeks and were subsequently sustained for 3 years (West, Henry, & Pavuluri, 2007).

## What Works

Combination therapy that involves psychoeducation, positive reinforcement, empathy, and family-focused strategies with measured feedback, are potentially useful (West et al., 2007, 2009).

## What Might Work

Family-focused CBT and DBT therapy strategies, while promising, do not yet offer dual improvement for both depressive and manic symptoms. The absence of randomized controlled trials of each treatment option does not allow for unequivocal support for any given approach (Fristad et al., 2002; Goldstein et al., 2009; Miklowitz et al., 2008; Pavuluri, Graczyk, et al., 2004).

## What Does Not Work

Negative reinforcement without collaboration with the patients can be disruptive to the parent–child relationship and recovery.

## Psychopharmacology and Pediatric Bipolar Disorder

Medications act as the cornerstone for mood stabilization, the primary focus in the treatment of PBD. Algorithms that avoid inappropriate medication (e.g., antidepressants or stimulants as a primary strategy), high doses, and the use of an excessive number of medications do prove to be feasible and efficacious. Given the complexity of PBD, the selection of a medication treatment plan must be careful and customized to the domain-specific needs. Further, given high rates of comorbidity, it must address more than one problem simultaneously. In this respect, monotherapy may lead to only partial response as multiple domains of cognitive and affective functioning may be impacted. The following guidelines aim to maximize treatment effects while taking into consideration the complexities of the disorder. Towards optimizing recovery, it is recommended to use FDA-approved medications as the first-line choice in mood stabilization with the use of psychotherapy adjunctives to assist in maintaining symptom recovery (Kowatch & DelBello, 2006; Pavuluri, Henry et al., 2004).

(a) *Prescription Hygiene*: Assessing current medications does not necessarily entail washing out of all treatment. Instead, eliminating destabilizing agents such as stimulants and antidepressants that may worsen mania or stopping medications that have not been effective is advised. (b) *Mood Stabilization*: Stabilizing primary mood with monotherapy using lithium or divalproex sodium is the first treatment choice. Lithium is FDA approved for mania for 12–18 year olds and has a slow onset of action with around 50 % response rate. While it has not been proven effective in the treatment of psychosis, combination therapy is advised should this symptom exist. (c) *Augmentation*: In the event that irritability is prominent and a faster response rate demanded or when monotherapy with a first-line choice does not fully stabilize mood, the use of SGA's may be an option either as a monotherapy or in combination with a mood stabilizer. (d) *Addressing Breakthrough Symptoms*: Beyond acute mood stabilization, PBD does present with associated symptomatology such as depression, psychosis, aggression, and sleep difficulties. In terms of depression, lamotrigine has been established to be effective either as a monotherapy or in combination with another agent. If psychotic or aggressive symptoms are problematic, the use of SGA's is recommended if not already implemented. In the case of aggression, there is some evidence to support that clonidine has been useful to suppress rage attacks, however, through persistent use children may become disinhibited or even more aroused and this treatment for long-term use should be implemented with caution. As a first-line option in addressing sleep difficulties, physicians are advised to take advantage of existing mood stabilizer regimens to increase evening dose. If persistent, the use of melatonin or trazodone may assist in establishing a sleep routine. (e) *Addressing Comorbid Symptoms*: Treatment algorithms recommend first addressing mood stabilization prior to treating comorbid conditions, in particular cognitive and attentional deficits that may arise with ADHD. If needed, long-acting stimulant medication following mood stabilization may assist with symptoms of inattention and executive functioning deficits. As comorbid anxiety disorders are common with PBD, psychotherapy adjunctives may be found most beneficial in addressing these symptoms. If medication is employed, small doses of SSRI's may be found effective but only after mania is stabilized. As always, close monitoring of symptoms precipitating a switch into mania is essential and SSRI's safely discontinued should this be the case.

## The Prevention of Pediatric Bipolar Disorder

Early identification of symptoms helps in the prevention and treatment of PBD. As the disorder is highly heritable, parents with bipolar disorder may be advised to pay particular attention to affect dysregulation symptoms in their own children (Chang, Steiner, & Ketter, 2000). It is demonstrated that high-risk offspring of bipolar parents exhibit significant differences in severity of symptom presentation in terms of marked irritability, depression, rejection sensitivity, and lack of mood reactivity (Chang et al., 2000). In the identification of symptoms such as these, early screening measures may help. Catching the illness early and providing targeted treatment plans prior to the onset of a fully syndromal manic episode may help restore prefrontal functioning, given prolonged bipolar illness negatively impacts this region (Chang, Howe, Gallelli, & Miklowitz, 2006; Miklowitz & Chang 2008). There is research to suggest that exposure to mood stabilizer treatment for high-risk children prior to a PBD diagnosis actually delays age of onset (Chang, Saxena, Howe, & Simeonova, 2010). Specifically, treatment with divalproex, with very careful dose titration, was found to improve mood symptoms in 78 % of at-risk children at the end of 12 weeks for those with non-PBD diagnoses yet with mild affect dysregulation symptoms (Chang et al., 2003). As a mechanism, it is hypothesized that ameliorating mood instability early-on reduces stressors which, in turn, increases functioning and delays diagnosis (Chang et al., 2010). Pharmacotherapy as a preventive approach has also been demonstrated in the use of quetiapine with affectively instable at-risk children (i.e.,

children with at least one bipolar first-degree relative without DSM-IV criteria for PBD—Type I themselves). During a 12-week treatment, 87 % of subjects saw reductions in both manic and depressive symptoms (DelBello, Adler, Whitsel, Stanford, & Strakowski, 2007). Contrary to these findings, however, Findling et al. did not demonstrate improvement in mood symptoms following long-term treatment for up to 5 years for BD-NOS or cyclothymic patients (Findling et al., 2005). When employing pharmacotherapy as a prevention strategy, physicians must exercise caution as there are potentially many causes to affect dysregulation that may not be PBD related. This last study suggests that subsyndromal symptoms may stabilize over time without the need for intervention. Given that psychotherapy generally does not possess the risks associated with medication treatment, it is a recommended step to begin this treatment early. As a preventive measure, establishing psychoeducation within the family unit can help mediate stressors that have the potential to deteriorate disease trajectory (Miklowitz et al., 2008).

## What Works

Early screening procedures may mitigate the potential harmful effects of long-term illness on prefrontal functioning. Increasing psychoeducation on the topic of bipolar disorder, especially within at-risk individuals, may help in the identification of early signs and symptoms (Pavuluri, Henry, Devineni, Carbray, & Birmaher, 2006).

## What Might Work

Use of mood stabilizers for affect dysregulation may help prevent the development of a full-blown mood disorder (Pavuluri, Henry, et al., 2004).

## What Does Not Work

No data is available on either harmful or ineffective strategies in the prevention of PBD.

## Recommended Best Practice

- When employing pharmacotherapy, mood stabilization is the first priority and should be addressed before the addition of stimulants to treat attentional difficulties. Through the use of a medication algorithm, the addition of subsequent medications to treat residual symptoms or comorbid conditions is a recommended best practice but only after primary affect dysregulation has been addressed.
- Psychotherapy as an adjunctive to medication treatment is recommended to strengthen and sustain symptom recovery. Therapy that incorporates both individualized and family-focused strategies, while employing psychoeducation, works to develop positive coping skills.
- Addressing sleep hygiene issues and the balance of circadian rhythms may help decrease response to emotional triggers and subsequent mood lability and should be an essential component to any treatment plan.

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# Suicide

Daniel J. Reidenberg

## Introduction

### Theoretical Perspectives

Suicide among youth and young adults remains a serious public health issue. Approaches to the prevention and treatment of adolescent mental health problems and problem behaviors include categorical diagnosis-related approaches and interventions that focus on a wide range of risk and protective factors that transcend any single diagnosis. Suicide is no different and can be understood in relation to particular diagnoses as well as a broad range of risk and protective factors. Suicide can be characterized as multiply determined (Goldsmith, Pellmar, Kleinman, & Bunney, 2002; Gould, Greenberg, Velting, & Shaffer, 2003; Rudd & Joiner, 1998) resulting from multiple rather than single events or causes. This perspective has substantial implications for prevention programming and has led to the development of programs that have been variously described as comprehensive and multilevel (Silverman & Felner, 1995), ecological (Felner

& Felner, 1989), and systemic (Kalafat, 2001; Sanddal, Sanddal, Berman, & Silverman, 2003) and are described in subsequent sections of this chapter.

While adolescent dysfunctional behaviors share many risk and protective factors and appear to be most effectively addressed by broad, multilevel prevention programs and integrated services, there are risk and protective factors and concomitant prevention and treatment approaches that are unique to given dysfunctions. For example, at the societal level, suicidal behavior does not arise in a context that encourages such behavior as is the case with interpersonal violence and substance abuse. In addition, there are individual risk factors that appear to be particularly, if not uniquely, associated with suicide as described in the next section.

For suicide, the framework outlined above yields a formulation of prevention and treatment that addresses the unfolding process or developmental trajectory of youth suicide that leads to the emergence of suicidal behavior (Silverman & Felner, 1995). As one moves along that trajectory, the risk and protective factors targeted initially are distal, broad-based, and shared with other dysfunctional behaviors (e.g., problem-solving, social bonding) and are addressed in universal approaches (e.g., Positive Youth Development Programs, Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002). Then, moving closer to the emerging phenomenon of the suicidal state, the

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risk and protective targets become progressively more proximal, severe, and specific to suicide (e.g., help negation) and are addressed by selective and indicated approaches (e.g., cognitive-behavioral therapy for suicidal depression). The prevention and treatment approaches reviewed in this chapter reflect this formulation.

## Definitional Issues

Progress in the field of suicide (awareness, prevention, treatment/intervention, evaluation) has been negatively impacted by a lack of universally accepted definitions of suicide and suicidal behavior. Research-based definitions, described next, have been developed (O'Carroll, Berman, Maris, & Moscicki, 1996) and accepted by the Institute of Medicine (Centers for Disease Control, cited in Crosby, Ortega, & Melanson, 2011; Goldsmith et al., 2002). However there is not universal acceptance of this terminology leading to challenges in better understanding and describing suicide among the public, researchers, and communication experts. According to Crosby et al. (2011), suicide is defined as death caused by self-directed injurious behavior with any intent to die as a result of the behavior. They define self-directed violence (SDV) (analogous to self-injurious behavior) as behavior that is self-directed and deliberately results in injury or the potential for injury to oneself. This does not include behaviors such as parachuting, gambling, substance abuse, tobacco use or other risk taking activities, such as excessive speeding in motor vehicles. These are complex behaviors some of which are risk factors for SDV but are defined as behavior that while likely to be life-threatening is not recognized by the individual as behavior intended to destroy or injure the self (Farberow, 1980). These behaviors may have a high probability of injury or death as an outcome but the injury or death is usually considered unintentional (Hanzlick, Hunsaker, & Davis, 2002). SDV is categorized into non-suicidal and suicidal. Non-suicidal SDV is behavior that is self-directed and deliberately results in injury or the potential for injury to oneself.

For SDV, there is no evidence, whether implicit or explicit, of suicidal intent. Suicidal SDV is behavior that is self-directed and deliberately results in injury or the potential for injury to oneself. There is evidence, whether implicit or explicit, of suicidal intent. Some other relevant terminology from Posner, Oquendo, Guold, Stanley, and Davies (2007) are: (1) undetermined SDV (behavior that is self-directed and deliberately results in injury or the potential for injury to oneself where suicidal intent is unclear based on the available evidence), (2) suicide attempt (a non-fatal self-directed potentially injurious behavior with any intent to die as a result of the behavior which may or may not result in injury), (3) interrupted SDV—by self or by other (by other—a person takes steps to injure self but is stopped by another person prior to fatal injury. The interruption can occur at any point during the act such as after the initial thought or after onset of behavior. By self (in other documents may be termed "aborted" suicidal behavior)—a person takes steps to injure self but is stopped by self prior to fatal injury (4) other suicidal behavior including preparatory acts (acts or preparation towards making a suicide attempt, but before potential for harm has begun which can include anything beyond a verbalization or thought, such as assembling a method (e.g., buying a gun, collecting pills) or preparing for one's death by suicide (e.g., writing a suicide note, giving things away).

## DSM V and Incidence/ Prevalence Rates

According to the Centers for Disease Control (CDC, 2010), the rate of suicide for youth aged 15–24 was 10.45 per 100,000. Rates of suicide are highest for older youth. For youth aged 20–24, the rate was 13.62 per 100,000, for youth aged 15–19, 7.53 per 100,000, for youth aged 10–14, 1.29 per 100,000. Males died by suicide four times more frequently than females. Despite some advances in the understanding and prevention of youth suicides, it remains and ranks

as the third leading cause of death among adolescents, after accidents and homicides (although, across all age groups, more people die in the United States by suicide than homicide). Rates for 15–19-year-olds increased by 11 % between 1980 and 1987 and 99 % for those between the ages of 10 and 14. Both age groups have shown small declines in rates in the years 2000–2010. Native American/Alaska Native youth have the highest rate with 20.89 suicides per 100,000. White youth are the next highest with 11.30 deaths per 100,000. Black youth had 6.59 deaths by suicide per 100,000. Firearms remain the most common suicide method among youth, regardless of race or gender, accounting for 44.5 % of completed suicides (http://www.cdc.gov; Centers for Disease Control & Prevention, 2010).

Suffocation was the second most commonly used method (39.7 % of deaths).

Since 1993, the CDC has conducted the Youth Risk Behavior Survey (YRBS) with a representative sample of high school students in grades 9–12 every two years. Within this survey there is information on suicide attempts and ideation. The 2011 YRBS found that among high school students: 7.8 % self-reported having attempted suicide one or more times in the previous 12 months. Attempts were reported more frequently by female students (9.8 % vs. 5.8 % for males) and Hispanic females reported attempts more than other racial and ethnic groups (13.5 %). 2.4 % reported having made a suicide attempt in the previous 12 months that resulted in an injury, poisoning, or overdoes that had to be treated by a doctor or nurse. Females reported suicide attempts more often than did males (2.9 % versus 1.9 %). In 2012, a total of 12.8 % reported having made a plan for a suicide attempt in the previous 12 months and 15.8 % reported having seriously considered attempting suicide in the previous 12 months (CDC, 2011). High school students reports of suicide attempts decreased from 2001 to 2009, and reports of serious suicide attempts decreased from 2003 to 2009; however both were reported at increased levels in 2011.

For every completed suicide among adolescents it is estimated that there may be 100–200 attempts by young people. While the rates of suicide death are similar among both adolescents and seniors, adolescents are 50 times more likely to attempt suicide (McIntosh, 2009). As stated previously while more males complete suicide, females attempt suicide 3–4 times more often than males. Within a typical high school classroom, it is likely that three students (one boy and two girls) have made a suicide attempt in the past year. In regard to suicide rates among gay, lesbian, and bisexual or transgendered youth (LGBT), most studies document an elevation of risk for attempts among males with mixed findings for females. More recently, a panel of leading researchers, clinicians, educators, and policy experts released a comprehensive report on the prevalence and underlying causes of suicidal behavior in LGBT adolescents and adults (http://www.cdc.gov; Centers for Disease Control & Prevention, 2010).

The report confirms prior research on the subject of LGBT suicide and cites strong research evidence of significantly elevated rates of lifetime reported suicide attempts among LGBT adolescents and adults, compared to comparably aged heterosexual persons. However, the authors found limited empirical evidence of higher rates of suicide deaths in LGBT people, mostly because sexual orientation and gender identity are not indicated on death records in the United States and most other countries. Finally, a comprehensive report by the Institute of Medicine (Goldsmith et al., 2002) pointed out that official suicide statistics are fraught with inaccuracies due to regional differences in definitions of suicide, classifications of deaths, training and background of coroners and medical examiners, the extent to which cases are examined, and the quality of data management. Most of these problems result in underreporting of suicide in general (youth, adults, seniors, etc.). There has been an increased awareness of suicide in our society over the last decade, however suicide still remains stigmatized and, there are pressures from families, schools, colleges, and businesses to have medical examiners report the deaths as accidental deaths rather than a suicide.

## Individual Factors Influencing Risk and Resiliency

### Risk Factors

Risk factors for suicide include vulnerabilities such as psychopathology and psychological variables, and characteristics specific to the suicidal state, including help negation, prior attempts, and characteristics of current suicidal ideation. Risk factors do not establish a "cause" of suicidal behavior; however they do describe an association.

### Psychopathology

Mental illness and substance abuse are the predominant underlying factors in youth suicide (Brent, Baugher, Bridge, Chen, & Chappetta, 1999; Fleischmann, Bertolote, Belfer, & Beautrais, 2005). Among those, mood disorders are the most prevalent disorders among adolescent suicide completions, and female victims are more likely than males to have affective disorders, in particular depression. Substance abuse is also a significant risk factor, particularly among older adolescent males. There is also a high prevalence of comorbidity between affective and substance abuse disorders. Conduct disorder is a risk factor for males, often comorbid with depression and substance abuse. Bipolar disorders among youth contribute to risk for suicide, and these are often (mis)diagnosed as conduct disorders. Studies have also found a 40–50 % prevalence rate of personality disorders, mainly borderline disorders for females, among youth suicide victims. Recent research also implicates anxiety and panic disorders as risk factors for suicide. Recent genetic studies have also found there is a shared link between suicidal ideation, depression, and conduct disorder (Linker, Gillespie, Maes, Eaves, & Silberg, 2012).

There appear to be some differences in determinants of risk for black and white youths. For whites, antisocial behavior is positively associated with suicide. For blacks, this association is curvilinear in that low levels of antisocial behavior are associated with greater risk than no antisocial behavior, but those with high antisocial behavior were not at greater risk. This pattern requires further investigation, as it may be an artifact of the phenomenon of suicide by black male youths through risky antisocial behavior that prompts lethal responses from peers or police. Also, problem drinking appears to be less associated with suicide in blacks than whites (Castle, Duberstein, Meldrum et al., 2002; Castle, Duberstein, Nelson, & Conwell, 2002).

### Psychological Variables

Characteristics such as cognitive rigidity, ineffective problem-solving/coping styles, negative attributional style, and hopelessness have been found in various combinations among youth who attempt or complete suicide. Cognitive rigidity refers to inability to generate alternate views of or solutions to problems. Poor problem-solving is characterized by less active and more avoidant (e.g., suppressive, blame) approaches, and impulsive problem-solving, which includes unrealistic expectations as to the effort or amount of time needed to arrive at a resolution. Explanatory style in depressed and suicidal individuals has been characterized as hapless and helpless in that negative events are attributed to internal, stable, global causes, while positive events are attributed to unstable, external causes. Hopelessness can arise independently from mood disorders and occurs across diagnostic categories.

These characteristics may be trait-like, perhaps mediated by family characteristics and chronic negative life events. Or, they may interact or mediate each other. Thus, hopelessness may arise within the context of depression or negative attributions interacting with negative life events; and, in turn, such hopelessness predicts suicide in adults and adolescents. Likewise, cognitive rigidity may be mediated by depression or anxiety, which may be reactive to acute stressors. Two trait-like variables that have a degree of heritability have been associated with suicidality. These are impulsive/aggressive (which includes risk taking) and depressive/withdrawn temperament.

### Impulsivity

Kasen, Cohen, and Chen (2011) looked at the developmental course of impulsivity and

capability in relation to suicide attempts among 770 youth ages 10–25. They found that in a community sample, compared to non-attempters, attempters reported significantly higher impulsivity levels. This was particularly true in the younger years and matched with lower capability levels. Mathias et al. (2011) found that girls with multiple suicide attempts performed more impulsively on measures of delayed reward and had higher self-ratings of depression and aggression than girls with either one or no suicide attempts. Related to impulsivity is research on conduct problems in youth which have also shown a relationship to suicidal ideation and attempts (Stoep et al., 2011).

### Help Negation

This is a refusal or unwillingness to accept or access available resources that can help someone as a way of dealing with one's pathology or problems. Research has shown significant positive correlations between help negation and suicidal ideation and behavior (Carlton & Deane, 2000; Rudd, Joiner, & Rajab, 1995). Few adolescents experiencing stress or personal problems consider seeking help, particularly from adults or mental health services; and troubled or at-risk adolescents prefer peers to adults if they seek help at all (Lindsey & Kalafat, 1998).

### Prior Attempts

A history of a prior suicide attempt is one of the strongest predictors of completed suicide. Older research (Joiner, Walker, Rudd, & Jobes, 1999) indicates that any more than one attempt significantly increases the risk over a single attempt and recent research confirms that prior attempts increase the risk of subsequent attempts or death by suicide and with more attempts lethality tends to increase (in particular for females). Nonsuicidal self injury is also a risk factor for youth.

### Substance Abuse

Another factor impacting suicide attempts is substance use/abuse-related behaviors. McManama, O'Brien, and Berzin (2012) looked at the impact of a psychiatric diagnosis and comorbidity on the medical lethality of adolescent suicide attempts and found that substance abuse disorder was associated with higher suicide attempt lethality. Effinger and Stewart (2012) looked at trying to predict suicide attempts among adolescents with depression and substance abuse symptoms and found that youth with both co-occurring issues had higher rates of attempts than those with no, or a single risk factor.

### Characteristics of Current Suicidal Ideation

The frequency, intensity, and duration of suicidal thoughts, as well as the subjective sense of control over the thoughts, contribute to the level of risk. The presence of plans, as well as the lethality and specificity of the planning, availability of means, increases the level of risk. Also, specific preparatory behaviors, such as looking for a way to die, researching suicide methods online, and acquiring means suggest an increased risk of suicide. There appears to be a continuum of increased risk from thoughts, plans, and preparation to attempts. However, during assessments, individuals, in particular youth and those youth with prior attempts, often deny their suicidal thoughts, or do not acknowledge plans or preparation. Thus, each of these must be inquired about through a complete and comprehensive suicide risk assessment.

### Sexual Orientation and Sexual Behavior

Recent epidemiological studies found a significant two-to six-fold increased risk for suicide attempts, but not completions, for LGBT youth. The association between same-sex sexual orientation and suicidal behavior appears to be substantially mediated by depression, anxiety, alcohol abuse, family history of attempts, and victimization (bullying). However, it appears that stigma and discrimination play a stronger role in suicidal behavior for youth than even for the other risk factors. There is some research on youth experiences of earlier sexual intercourse that suggests increases in the odds ratio for depressive symptoms and suicidality (Heidmets et al., 2010) and sexual/dating violence increases the likelihood of suicidal ideation (Ely, Nugent, Cerel, & Vimbba, 2011).

## Resilience or Protective Factors

Even more so than risk factors, a common set of protective factors seems to moderate the risk for many youth problem behaviors. Moreover, protective factors appear to be more powerful predictors of outcomes with youth than risk factors (Jessor, Van Den Bos, Vanderryn, Costa, & Turbin, 1995). Many protective factors at all ecological levels are the converse of risk factors. Thus, at the individual level, positive outlook or hopefulness and the related sense of self-efficacy and internal locus of control can attenuate the risk for suicide. Likewise, effective problem-solving, characterized as proactive and flexible, is a protective factor.

## Family Factors Influencing Risk and Resiliency

### Risk Factors

#### Suicide
A family history of suicidal behavior greatly increases the risk for suicide attempts and completions. Exposure to friends' or family members' suicidal behavior increases suicidal behavior (Borowsky & Resnick, 2001). Research has also shown that parents provide both a risk and protective factor when it comes to parental suicide. Garssen, Deerenberg, Mackenbach, Kerkhof, and Kunst (2011) found that the younger the parent was at the time of their death (by suicide) tended to increase the risk of familial risk of suicide for offspring. While suicide and psychopathology almost always co-occur, suicide in families appears to confer risk independent of pathology. Learning or imitation of poor problem-solving may play a role, but adoption and twin studies indicate heritability plays a role independent of learning.

#### Psychopathology
High rates of parental psychopathology, particularly substance abuse and depression, have been found to be associated with ideation, attempts, and completed suicide in adolescents. King

(2009) found that the risk of child and adolescent suicide and attempted suicides increases when family psychopathology is involved.

### Family Discord and Parent–Child Relationships
Discord among family members, including between parents, appears to be more prevalent in families of suicide victims. Related to discord, witnessing violence contributes to the risk of suicide. Impaired parent–child relationships are associated with increased risk of suicide. However, this may not be independent of the impact of youths' psychological problems on these relationships. Some research offers clues for predicting suicidal risk among depressed youth. Hetrick, Parker, Robinson, Hall, and Vance (2012) found that strong predictors of suicide-related behaviors among youth deemed at-risk (66 %) were hopelessness and family dysfunction. More research is needed to disentangle these variables.

### Childhood Trauma
Physical and sexual abuse are both associated with suicide in adolescents. Sexual abuse appears to impact boys differently than girls; and the relationship between childhood trauma and suicide is stronger when the trauma has been of long duration, the perpetrator is known to the victim, and force and penetration have taken place. The effects of trauma are cumulative, as the risk for suicide increases with additional trauma. Longitudinal studies depict a pathway from trauma to suicide such that childhood trauma induces a range of effects that, over time, coalesce into mental disorders and suicidal ideation and attempts by adolescence and young adulthood. Several studies indicate the adverse effects of child maltreatment, especially sexual abuse, over the lifespan (Brodsky & Stanley, 2008; Gershon, Minor, & Hayward, 2008).

### Protective Factors

Cohesive families and adolescents' sense of connection to family and parents are associated with

less risk for suicide in white and minority youth (Castle, Duberstein, Meldrum et al., 2002). Among Latina youth, there also seems to be some measure of protective factors against suicide. Pena et al. (2011) found that familism may protect against suicide behavior among Latinas via its influence on the family environment.

## Social and Community Factors Influencing Risk and Resiliency

### Risk Factors

#### Common Risk Factors

Several community risk factors have demonstrated relationships with multiple problem outcomes in youth such as substance abuse, problem pregnancy, delinquency, and interpersonal violence (Durlak, 1998), however there is limited data to support a strong relationship between any one of these community risk factors and suicide directly or in isolation. However, given that other problem behaviors often co-occur with suicide, it is likely that these characteristics contribute to suicide risk in vulnerable populations characterized by other suicide risk factors.

#### Inaccessible Services

Services for youth have been described as fragmented and inaccessible. Studies of barriers to adolescent help-seeking reveal that adolescents consider psychological services in schools and communities to be psychologically (because of a perceived stigma associated with psychotherapy), culturally (not responsive to or knowledgeable about adolescent culture and concerns), or geographically inaccessible to them (Lindsey & Kalafat, 1998). This is supported by adolescents' low compliance and high dropout from psychotherapy (Piacentini, Rotherham-Borus, & Gellis, 1995; Trautman, Steart, & Morishima, 1993).

#### Access to Firearms

Firearms are the most common method of committing suicide in the United States, among youth of both genders. Over half of the almost 2,000 youth under 19 who died by suicide in 2000 used firearms (National Center for Injury Prevention & Control (NCIPC), 2003). The dramatic increase in youth suicide since 1960, including the recent increase in the black male suicide rate, is primarily attributable to increase in the use of firearms. The presence of firearms in the home is a significant risk factor for suicide in youths (Brent & Bridge, 2003), and there is strong evidence that firearms used for both suicides and unintentional injuries by adolescents are disproportionately obtained from the home environment (Shah, Hoffman, Wake, & Marine, 2000). Of note, youth who use firearms for suicide reportedly have fewer identifiable risk factors, such as expressing suicidal thoughts, suicidal intent, psychopathology, and substance abuse, compared to those using other means; and suicides by firearms appear to be more impulsive and spontaneous (Miller, Azrael, & Hemenway, 2001). Thus, to at least some extent, means availability appears to function as a contributing factor to youth suicide, independent of other factors.

#### Contagion/Imitation

There is considerable evidence for increases in youth suicidal behavior after media coverage of suicides that includes graphic descriptions and pictorial coverage. The magnitude of the suicide increase is proportional to the amount, duration, and prominence of media coverage (Gould, 2001) and the particular vulnerability of some young people (Gould, Jamieson, & Romer, 2003). This has prompted the development of recommendations for responsible media coverage developed by national and international experts (www.reportingonsuicide.org; released by Reidenberg, April, 2011). Recent events in local school districts indicate that news of youth suicides is now being rapidly and widely spread among adolescents through text messaging and social media platforms. These messages often include unfounded speculation about the reasons for and circumstances of the death which can lead to copycat behavior among some youth.

In addition to media exposure, imitative suicidal behavior among adolescents can follow

exposure to suicide among peers (Brent et al., 1992). Brent and colleagues' research indicates that the effects are greater for those who were less acquainted with the suicidal adolescent. This may be because they were not exposed to the severe impact of the loss, and this raises concerns about the possible impact of exposure through instant messaging. Even more menacing, there are websites that youth can access that depict suicide, provide instructions for suicide, and offer opportunities for group suicide. There has been little done to study the effect of postvention efforts following the suicide of a youth, and in particular the evidence for the effectiveness of postvention strategies. However, Cox et al. (2012) noted both the importance of these efforts to reduce suicide clusters and to improve communication efforts in communities. An emerging concern relative to contagion and suicide clusters has surfaced with advancing and increasing use of technology/electronic communication. To date little has been formally studied on this topic; however Robertson, Skegg, Pooer, Willaims, and Taylo (2012) looked at the possible role of electronic communication and its impact in an adolescent suicide cluster. Robertson et al. studied a suicide cluster in New Zealand and found that it was likely that electronic communications were increasing the risk of suicide contagion among the young people and thus increased the suicide cluster in the community.

### Stressful Events

Life stressors, including interpersonal losses, legal or disciplinary problems, setbacks such as rejection from the military or college choice, and school dropout are associated with suicide attempts and completions in vulnerable youth (Gould et al., 2003; Kalafat, 1997).

## Protective Factors

Two major community level factors attenuate the risk for suicide among adolescents and young adults. These are contact with a caring adult and bonding or connection with school and/or community, which is mediated by opportunities to participate and contribute (Castle, Duberstein, Nelson et al., 2002; Evans, Smith, Hill, Albers, & Nuefeld, 1996; Kaminski et al., 2010; McBride et al., 1995).

Safe schools, as perceived by youth (Eisenberg, Ackard, & Resnick, 2007), and academic achievement (Borowsky & Resnick, 2001) are also two protective factors for youth suicide.

## Evidence-Based Treatment Interventions for Suicide

## Evidence-Based Treatment Interventions in Community and Treatment Settings

### What Works

The following brief descriptions and outcomes are evidence-based programs that have been shown to work effectively on a variety of suicide-related behaviors for youth by the NREPP. First is the Emergency Department Means Restriction Education program which is an intervention for the adult caregivers of youth (aged 6–19 years) who are seen in an emergency department (ED) and determined through a mental health assessment to be at risk for committing suicide. Studies show that the presence of a gun in the household increases suicide risk, yet parents who take their adolescent to an ED for a suicide attempt are often not warned about restricting their child's access to firearms and other lethal means. ED Means Restriction Education is designed to help parents and adult caregivers of at-risk youth recognize the importance of taking immediate, new action to restrict access to firearms, alcohol, and prescription and over-the-counter drugs in the home. By encouraging reduced access to these means, the intervention also aims to lessen the risk of violence directed at others, including homicide. Outcomes for this program are: (1) Access to medications that can be used in an overdose suicide attempt and (2) access to firearms.

### Adolescent Coping with Depression

The Adolescent Coping with Depression (CWD-A) course is a cognitive-behavioral group intervention

that targets specific problems typically experienced by depressed adolescents (Substance Abuse & Mental Health Services Administration, 2013). These problems include discomfort and anxiety, irrational/negative thoughts, poor social skills, and limited experiences of pleasant activities. CWD-A consists of 16 2-h sessions conducted over an 8-week period for mixed-gender groups of up to ten adolescents. Each participant receives a workbook that provides structured learning tasks, short quizzes, and homework forms. This program has four outcomes: recovery from depression, self-reported symptoms of depression, interviewer rated symptoms of depression, and psychosocial level of functioning (SAMHSA, 2013).

## Model Adolescent Suicide Prevention Program

Model Adolescent Suicide Prevention Program (MASPP) is a public health-oriented suicidal-behavior prevention and intervention program originally developed for a small American Indian tribe in rural New Mexico to target high rates of suicide among its adolescents and young adults (SAMHSA, 2013). The goals of the program are to reduce the incidence of adolescent suicides and suicide attempts through community education about suicide and related behavioral issues, such as child abuse and neglect, family violence, trauma, and alcohol and substance abuse. As a community-wide initiative, the MASPP incorporates universal, selective, and indicated interventions and emphasizes community involvement, ownership, and culturally framed public health approaches appropriate for an American Indian population. Central features of the program include formalized surveillance of suicide-related behaviors; a school-based suicide prevention curriculum; community education; enhanced screening and clinical services; and extensive outreach provided through health clinics, social services programs, schools, and community gatherings and events. Several evaluations of MASPP have demonstrated outcomes including suicide attempts and suicide gestures (SAMHSA, 2013).

## Interpersonal Psychotherapy for Depressed Adolescents

Interpersonal Psychotherapy for Depressed Adolescents (IPT-A) is a short-term, manual-driven outpatient treatment intervention that focuses on the current interpersonal problems of adolescents (aged 12–18 years) with mild to moderate depression severity (SAMHSA, 2013). Adapted from the original IPT program developed for adults, IPT-A addresses the developmental and interpersonal needs of adolescents and their families. IPT-A attempts to improve the adolescents' communication and social problem-solving skills to increase their personal effectiveness and satisfaction with current relationships, ultimately resulting in the relief of depression symptoms. IPT-A links the onset and perpetuation of depression symptoms to problems or conflicts in interpersonal relationships while acknowledging the contributions of other factors. IPT-A helps adolescents understand the effects of interpersonal events and situations on their mood, and each adolescent chooses the focus of treatment by identifying one of four interpersonal problem areas—grief, role disputes, role transitions, or interpersonal deficits.

IPT-A is delivered by a therapist in hospital-based, school-based, and community outpatient clinics over 12 weeks through weekly 35- to 50-min treatment sessions. Parental involvement is strongly encouraged (but not mandatory) in IPT-A.

Peer Assistance and Leadership (PAL) is a peer helping program that seeks to build resiliency in youth by pairing youth with peer helpers who receive training and support from teachers participating in the program (SAMHSA, 2013). The peer-based assistance provided through PAL is designed to help youth avoid risk factors for substance use as well as other problems, such as low achievement in school, dropout, absenteeism, violence, teen pregnancy, and suicide. PAL peer helpers act as guides, tutors, mentors, and mediators to peers or younger students (PAL mentees) by utilizing skills learned through PAL, including cultural competency, effective communication, decision making, higher order thinking,

and resiliency building. PAL peer helpers are placed in helping roles with younger students from feeder campuses and peers from their own campus. Through a combination of leadership and assistance, they offer individual and group peer support, tutoring, welcoming and orientation of new students, assistance to students with special needs, classroom presentations, and school/community outreach projects. There are three outcomes for PAL: (1) academic performance and classroom attendance, (2) classroom behavior, and (3) relationship with family, peers, and school.

## What Might Work

The field of evidence-based treatment interventions for suicidal adolescents consists of a small amount of good news and a preponderance of bad news. The good news primarily involves research on psychotherapy for children and adolescents. In his comprehensive review, Kazdin (2003) reported that there is firm evidence that therapy for children and adolescents is effective, and that the magnitude of this effect, when treatment is compared to no treatment, is rather large (effect sizes 0.70). In addition, he described effective evidence-based treatments for anxiety, depression, and conduct disorders. However, it has not been established why treatment works, for whom, or what the key conditions that optimize change are. Moreover, the research established the efficacy, not effectiveness, of these treatments. That is, treatment in practice departs in many respects from treatment in research studies. This will be explicated below through a description of the current context for therapy with adolescents.

There is considerably less research on treatment of suicidal individuals, as several reviews have identified fewer than two dozen studies that approach sound research criteria (Berman, Jobes, & Silverman, 2006; Links, Bergmans, & Cook, 2003; Rudd, Joiner, Jobes, & King, 1999; Zemetkin, Alter, & Yemini, 2001). Most of these studies exclude patients at high risk for suicide, and only a handful of studies specifically address adolescents. Thus, as Berman et al. (2006) point

out that clinicians who are treating suicidal patients in ongoing therapy are often forced to rely on literature that is principally case-based and largely anecdotal. Due to the paucity of research in this area, studies involving adults will be reviewed and their potential applicability to adolescents will be considered. Following this, treatment research on suicidal adolescents will be reviewed.

In a review focusing on randomized controlled studies in which outcome was suicidal behavior and interventions were targeted to adults at risk, Links et al. (2003) reported the following promising results. Problem-solving interventions improve problem-solving skills, depression, and loneliness, but may not prevent repeated suicidal behavior. Interventions can effectively decrease hopelessness, but these may not prevent subsequent suicidal behavior. Dialectical behavior therapy (DBT) appears to reduce suicidal behavior in individuals with borderline personality disorders, but this is a complex approach that requires considerable training and needs dismantling studies to identify its active ingredients (Linehan, Armstrong, Suarez, Allmon, & Heard, 1991). A multifaceted approach that is organized around partial hospitalization has reduced suicidal behavior and subsequent hospitalization of borderline personality disordered patients (Bateman & Fonagy, 1999). In a well-designed study involving regression analyses, Joiner et al. (2001) found that higher positive emotions such as joy, interest, and contentment-mediated gains in problem-solving attitudes, which in turn led to fewer suicidal symptoms in young adults. Rudd et al. (1999) identified six controlled studies that provided evidence that time-limited cognitive therapy that includes a core of problem-solving skills development yields reductions in ideation and related symptoms such as depression, hopelessness, and loneliness. They suggested that longer term treatment may be necessary to reduce attempts. Two controlled studies found that adjuncts to therapy reduced subsequent attempts. Van Heeringen et al. (1995) found that home visits by community nurses increased compliance with treatment and subsequent attempts by moderately suicidal outpatients. Morgan, Jones, and

Owen (1993) found that increasing ease of access to 24-h emergency services for 1 year following a suicide attempt significantly reduced subsequent suicide attempts in the experimental group relative to those receiving management as usual. Improved ease of access was accomplished by providing a green card with emergency numbers and encouraging the use of emergency room or telephone services in crises. Interestingly, service demand was also significantly reduced in this group. Finally, reports on DBT with borderline personality disorder (Linehan et al., 1991) and cognitive behavior therapy (CBT) with young adults (Rudd, Joiner, & Rajab, 1996) indicate that outpatient treatment of high-risk patients is safe and can be effective for reducing suicidality when acute hospitalization is also available.

In summary, the limited available evidence indicates that CBT and DBT show promise for treating suicidal patients. The specific change mechanisms of these approaches have not been identified. Additional interventions to increase compliance and access to emergency services may help to reduce subsequent attempts. Reasonable, conceptually grounded treatment models have been developed that incorporate rapport building strategies, appropriate crisis intervention, cognitive and problem-solving skills development, and appropriate risk management practices (Bongar, 2002; Rudd, Joiner, & Rajab, 2001).

The applicability of these approaches and findings to adolescents remains an open question. Rathus and Miller (2002) compared an adolescent adaptation of CBT to treatment as usual for suicidal adolescents with borderline personality features. They found that patients receiving DBT showed reductions in suicidal ideation, general psychiatric symptoms, and borderline personality symptomatology. Brent and Poling (1997) developed a CBT approach for adolescents that emphasized guided discovery to monitor cognitive distortions, encouraged more assertive and direct communication, and increased teens' ability to conceptualize alternate solutions to problems. The intervention was reported to be as effective as family therapy and nondirective supportive therapy in reducing suicidal ideation in depressed adolescents.

In sum, research on community-based treatment for suicidal adolescents remains in its infancy. Promising cognitive and DBT approaches, as well as reasonable treatment models (Berman et al., 2006), are available. School-based mental health services are spreading, though they are not firmly established; and communities have increased the accessibility of services for youth. Indicated suicide programs show promise for addressing at-risk youth. These indicated school-based suicide programs are best complemented by universal school programs, to be described below, and coordinated community emergency and mental health services.

## What Does Not Work

Not enough is known at the present time to identify ineffective practices other than doing nothing or simply contracting for safety.

## Evidence-Based Treatment Interventions in School Settings

### What Works

The following brief descriptions and outcomes are evidence-based programs that the NREPP has found to work effectively on a variety of suicide-related behaviors for youth in school settings.

### American Indian Life Skills Development (Former Zuni Life Skills Development Program)

American Indian Life Skills Development is a school-based suicide prevention curriculum designed to address the high rate of suicide among Native American Youth by reducing suicide risk and improving protective factors among American Indian adolescents 14–19 years old. The curriculum covers topics such as building self-esteem, identifying emotions and stress, increasing communication and problem-solving skills, recognizing and eliminating

self-destructive behavior, learning about suicide, role-playing around suicide prevention, and setting personal and community goals. The curriculum typically is delivered over 30 weeks during the school year, with students participating in lessons three times per week. Lessons are interactive and incorporate situations and experiences relevant to American Indian adolescent life, such as dating, rejection, divorce, separation, unemployment, and problems with health and the law. Most of the lessons include brief, scripted scenarios that provide a chance for students to employ problem-solving and apply the suicide-related knowledge they have learned. Lessons are delivered by teachers working with community resource leaders and representatives of local social services agencies. This team-teaching approach ensures that the lessons have a high degree of cultural and linguistic relevance even if the teachers are not Native American or not of the same tribe as the students.

## Coping and Support Training

Coping and Support Training (CAST) is a high school-based suicide prevention program targeting youth 14–19 years old (SAMHSA, 2013). CAST delivers life skills training and social support in a small-group format (6–8 students per group). The program consists of 12 55-min group sessions administered over 6 weeks by trained high school teachers, counselors, or nurses with considerable school-based experience. CAST serves as a follow-up program for youth who have been identified through screening as being at significant risk for suicide. In the original trials, identification of youth was done through a program known as CARE (Care, Assess, Respond, Empower), but other evidence-based suicide risk screening instruments can be used.

CAST's skills training sessions target three overall goals: increased mood management (depression and anger), improved school performance, and decreased drug involvement. Outcomes for this program are: suicide risk factors, severity of depression symptoms, feelings of

hopelessness, anxiety, anger, drug involvement, sense of personal control, and problem-solving/coping skills.

## Linking Education and Awareness of Depression and Suicide (LEADS: For Youth)

LEADS: For Youth is a curriculum for high school students in grades 9–12 that is designed to increase knowledge of depression and suicide, modify perceptions of depression and suicide, increase knowledge of suicide prevention resources, and improve intentions to engage in help-seeking behaviors (SAMHSA, 2013). The curriculum addresses such topics as depression and its symptoms, the link between depression and suicide, the risk and protective factors associated with suicide, the warning signs of suicide, seeking help and overcoming barriers to seeking help, and school and community suicide prevention resources. By educating students about seeking help and the resources available to them, the intervention aims to empower students to get help for themselves or others. Implementation of LEADS is intended to occur as part of a school suicide crisis management plan. Outcomes include: knowledge of depression and suicide, perceptions of depression and suicide, and knowledge of suicide prevention resources.

## Lifelines Curriculum

Lifelines is a comprehensive, schoolwide suicide prevention program for middle and high school students (SAMHSA, 2013). The goal of Lifelines is to promote a caring, competent school community in which help seeking is encouraged and modeled and suicidal behavior is recognized as an issue that cannot be kept secret. Lifelines seeks to increase the likelihood that school staff and students will know how to identify at-risk youth when they encounter them, provide an appropriate initial response, and obtain help, as well as be inclined to take such action. The Lifelines program includes multiple components

but the research reviewed for this summary assessed only the Lifelines Curriculum, the last component to be implemented in the larger Lifelines program. It consists of four 45-min or two 90-min lessons that incorporate elements of the social development model and employ interactive teaching techniques, including role-play. Health teachers and/or guidance counselors teach the lessons within the regular school health curriculum. Outcomes include: knowledge about suicide, attitudes about suicide and suicide intervention, attitudes about seeking adult help, and attitudes about keeping a friend's suicide thoughts a secret.

## Signs of Suicide

Signs of Suicide (SOS) is a 2-day secondary school-based intervention that includes screening and education (SAMHSA, 2013). Students are screened for depression and suicide risk and referred for professional help as indicated. Students also view a video that teaches them to recognize signs of depression and suicide in others. They are taught that the appropriate response to these signs is to acknowledge them, let the person know you care, and tell a responsible adult (either with the person or on that person's behalf). Students also participate in guided classroom discussions about suicide and depression. The intervention is designed to prevent suicide attempts, increases knowledge about suicide and depression, develops desirable attitudes toward suicide and depression, and increases help-seeking behavior. Outcomes include: suicide attempts, knowledge of depression and suicide, and attitudes toward depression and suicide.

## Sources of Strength

Sources of Strength, a universal suicide prevention program, is designed to build socioecological protective influences among youth to reduce the likelihood that vulnerable high school students will become suicidal (SAMHSA, 2013). The program trains students as peer leaders and connects them with adult advisors at school and in the community. With support from the advisors, the peer leaders conduct well-defined messaging activities intended to change peer group norms influencing coping practices and problem behaviors (e.g., self-harm, drug use, unhealthy sexual practices). Specifically, these activities are designed to reduce the acceptability of suicide as a response to distress, increase the acceptability of seeking help, improve communication between youth and adults, and develop healthy coping attitudes among youth. Sources of Strength is also designed to positively modify the knowledge, attitudes, and behaviors of the peer leaders themselves.

The program is often initiated as a 3- to 6-month project, but it is designed as a multiyear project with ongoing peer messaging and contacts growing over time. Adult advisors receive monthly teleconference support meetings with Sources of Strength staff. Outcomes include: attitudes about seeking adult help for distress, knowledge of adult help for suicidal youth, rejection of codes of silences, referrals for distressed peers, and maladaptive coping attitudes.

## Trauma Focused Coping

Trauma Focused Coping (TFC), sometimes called Multimodality Trauma Treatment, is a school-based group intervention for children and adolescents in grades 4–12 who have been exposed to a traumatic stressor (e.g., disaster, violence, murder, suicide, fire, accident). The intervention targets posttraumatic stress disorder (PTSD) symptoms and other trauma-related symptoms, including depression, anxiety, anger, and external locus of control. TFC uses a skills-oriented, peer- and counselor-mediated, cognitive-behavioral approach. The intervention is delivered in 14 weekly, 50-min sessions, providing youth with gradual exposure to stimuli that remind them of their trauma. The sessions move from psychoeducation, anxiety management skill building, and cognitive coping training to activities involving trauma narratives and cognitive restructuring. Implementation of TFC requires a master's-level

clinician and should include a cofacilitating school counselor when administered in a school setting. The study reviewed for this summary evaluated an 18-week version of TFC that was conducted with youth aged 10–15 in a school setting. Outcomes included: PTSD symptoms, symptoms of depression, anxiety, anger, locus of control, and general mental health functioning related to trauma and its treatment.

## Evidence-Based Treatment Interventions in Residential Settings

At the present time, interventions that meet the required standard could not be identified. There is no evidence-based data that hospitalization prevents immediate or eventual suicide (Zemetkin et al., 2001). However, this may be because hospitalization is best thought of as an adjunct to school or community outpatient treatment rather than as an independent treatment modality. The effectiveness of hospitalization for stabilizing acutely suicidal youth may be attenuated by briefer stays mandated by managed care (Berman et al., 2006) and lack of coordination with families and school systems during admission and discharge (Kalafat & Mackey, 1994). Not enough is known at the present time to identify ineffective practices.

## Psychopharmacology and Suicide

### What Works

At the present time, interventions that meet the required standard could not be identified. Further, there is currently no established evidence-based strategy that improves medication adherence in all cases Haynes et al. (2005). Yet, following the Treatment for Adults with Depression Study TADS study (below), the findings suggest that the importances of continuation and maintenance phase treatments, as the remission rates improve with time and continued treatment (Kennard,

Silva, & Tonev, 2009). However, Prozac (fluoxetine) is approved for use in children and adolescents for the treatment of major depressive disorder. Prozac (fluoxetine), Zoloft (sertraline), and fluvoxamine maleate are approved for use in children and adolescents for the treatment of obsessive-compulsive disorder.

According to the National Institute of Health (2013) (this section found at) http://www.nimh.nih.gov/health/topics/child-and-adolescent-mental-health/antidepressant-medications-for-children-and-adolescents-information-for-parents-and-caregivers.shtml there has been some concern that the use of antidepressant medications themselves may induce suicidal behavior in youths. Following a thorough and comprehensive review of all the available published and unpublished controlled clinical trials of antidepressants in children and adolescents, the U.S. Food and Drug Administration (FDA) issued a public warning in October 2004 about an increased risk of suicidal thoughts or behavior (suicidality) in children and adolescents treated with SSRI antidepressant medications. (In 2006, an advisory committee to the FDA recommended that the agency extend the warning to include young adults up to age 25.)

More recently, results of a comprehensive review of pediatric trials conducted between 1988 and 2006 suggested that the benefits of antidepressant medications outweigh their risks to children and adolescents with major depression and anxiety disorders (Bridge et al., 2007). An individual's response to a medication cannot be predicted with certainty. It is extremely difficult to determine whether SSRI medications increase the risk for completed suicide, especially because depression itself increases the risk for suicide and because completed suicides, especially among children and adolescents, are rare. Most controlled trials are too small to detect for rare events such as suicide (thousands of participants are needed). In addition, controlled trials typically exclude patients considered at high risk for suicide.

One major clinical trial, the NIMH-funded Treatment for Adolescents with Depression Study (TADS) has indicated that a combination of medication and psychotherapy is the most

effective treatment for adolescents with depression (SAMHSA, 2013). The clinical trial of 439 adolescents ages 12–17 with MDD compared four treatment groups—one that received a combination of fluoxetine and CBT, one that received fluoxetine only, one that received CBT only, and one that received a placebo only. After the first 12 weeks, 71 % responded to the combination treatment of fluoxetine and CBT, 61 % responded to the fluoxetine only treatment, 43 % responded to the CBT only treatment, and 35 % responded to the placebo treatment. At the beginning of the study, 29 % of the TADS participants were having clinically significant suicidal thoughts. Although the rate of suicidal thinking decreased among all the treatment groups, those in the fluoxetine/CBT combination treatment group showed the greatest reduction in suicidal thinking.

Researchers are working to better understand the relationship between antidepressant medications and suicide. So far, results are mixed. One study, using national Medicaid files, found that among adults, the use of antidepressants does not seem to be related to suicide attempts or deaths. However, the analysis found that the use of antidepressant medications may be related to suicide attempts and deaths among children and adolescents (Olfson, Marcus, & Shaffer, 2006). Another study analyzed health plan records for 65,103 patients treated for depression (Simon, Savarino, Operskalski, D, & Wang, 2006). It found no significant increase among adults and young people in the risk for suicide after starting treatment with newer antidepressant medications.

A third study analyzed suicide data from the National Vital Statistics and commercial prescription data (Gibbons, Hur, Bhaumik, & Mann, 2006). It found that among children ages 5–14, suicide rates from 1996 to 1998 were actually lower in areas of the country with higher rates of SSRI antidepressant prescriptions. The relationship between the suicide rates and the SSRI use rates remains unclear.

New NIMH-funded research will help clarify the complex interplay between suicide and antidepressant medications. In addition, the NIMH-funded Treatment of Resistant Depression in Adolescents (TORDIA) study will investigate

how best to treat adolescents whose depression is resistant to the first SSRI medication they have tried. Finally, NIMH also is supporting the Treatment of Adolescent Suicide Attempters (TASA) study, which is investigating the treatment of adolescents who have attempted suicide. Treatments include antidepressant medications, CBT or both.

## What Might Work

Drug treatment can play a role in the therapy of suicidal adolescents. While there is no drug that has demonstrated direct effects on suicide (as opposed to symptoms of various mental illnesses), medication may be helpful in cases where a diagnostic condition and related symptoms associated with suicide can be targeted with certain medicines. It should be noted, however, that only a few well-controlled drug studies with adolescent subjects have appeared to date in the literature, without much support for effectiveness. One possible reason for this outcome is that adolescents tend to respond well to placebo treatment, thereby masking differences between drug and placebo treatments. Also, many studies exclude patients who are at high risk for suicide and most clinical drug trials exclude children and adolescents. This does not necessarily mean that pharmacological treatment is useless. The current standard of care in the treatment of the suicidal condition calls for consideration of possible beneficial effects of medication (Berman et al., 2006). Major psychiatric disorders associated with suicide in adolescents include depression, bipolar disorder, and anxiety disorders.

### Medications for Depressive Disorders
Antidepressants have been shown to be clearly effective for the treatment of major depressive disorders. There are well over 20 antidepressants on the market, only a few of which are selective serotonin reuptake inhibitors (SSRIs) or selective serotonin norepinephrine reuptake inhibitors (SSNRIs). Hence, global statements about causal mechanisms cannot be made, because rigorous studies have not been undertaken. Furthermore,

there is a controversy as to whether certain classes of antidepressants can be associated with the worsening, or even the emergence, of suicidal ideation or behavior in the early weeks of treatment (Mann & Kapur, 1991; Montgomery, Dunner, & Dunbar, 1995). In July 2003, both the FDA and its British equivalent, the Medicines and Healthcare Products Regulatory Authority (MHRA) published warnings about the use of paroxetine for those patients in the under-18 age group, because of a possible increased risk of suicidal impulses. New data from various clinical trials showed episodes of self-harm and potentially suicidal behavior were between 1.5 and 3.2 times higher in patients younger than 18 taking the medication vs. those receiving a placebo. As with many other drugs in this class, paroxetine does not have a license for use in the under-18 age group, but physicians have widely prescribed it (and other psychopharmaceuticals) for this age group. SSRIs are the preferred psychpharmacological treatment for adolescent depression, with caution that suicidal youth on SSRIs must be watched for any increase in agitation or suicidality, especially in the early phase of treatment (Montgomery, 1997). In general, when medications are prescribed, careful monitoring of their administration to a suicidal adolescent is essential. Dosage levels must be carefully considered and caution with regard to hoarding of pills and access to medications in general by suicidal adolescents is required. While medications may be essential in stabilizing and treating the suicidal child and adolescent, all administration must be carefully monitored by a trustworthy third party who can report any unexpected change of mood, increase in agitation or emergency state, or unwanted side effects, and who can regulate dosage (Shaffer & Pfeffer, 2001). The majority of time a non-physician clinician/therapist will be working with a general practitioner or pediatrician in the treatment of youths with psychotropic medications. Open lines of communication must be maintained among these providers and the adolescent's caretakers.

There are reasons to believe that SSRIs might reduce suicidality, including their potential to reduce irritability, affective response to stress, hypersensitivity, depression, and anxiety. SSRI's may be effective at reducing suicidal ideation following 5–6 weeks of treatment, however some studies have shown a slight increase in suicidal ideation in the first two weeks of initiating treatment with SSRIs

## Bipolar Disorders

Not only has lithium been shown to be effective in the treatment of bipolar disorder and recurrent major depressive disorder, but it also has been shown to significantly reduce suicide attempt rates (Tondo, Jamison, & Baldessarini, 1997). Other studies suggest that lithium may exert antisuicidal effects independent of its mood-stabilizing properties (Müller-Oerlinghausen, Müser-Causemann, & Volk, 1992; Schou, 1999). Exactly what is the mechanism is unknown, although there is some speculation that the antisuicidal effect goes beyond the action of lithium alone, and relates to the increased contact and monitoring that occurs when patients are prescribed lithium. Further studies using lithium for antisuicidal benefits are strongly recommended.

## Anxiety Disorders

Patients with primary anxiety disorders (generalized anxiety disorder, panic disorder, phobias, obsessive-compulsive disorder, and posttraumatic stress disorder) have an increased risk for suicide, independent of a comorbid depressive disorder. Many studies have found mixed results regarding an independent association between anxiety and suicidality in youth. O'Neil, Puleo, Benjamin, Podell, and Kendall (2012) looked at suicidal ideation in treatment referred anxiety disordered youth. They found that higher levels of anxiety were present among those youth with suicidal ideation and that levels of anxiety predicted suicidal ideation after controlling for depressive disorders and symptoms. Fawcett has shown that the suicide risk is higher in patients with both anxiety symptoms and affective disorders, compared to patients who only suffer from affective disorders without anxiety. Fawcett, Busch, and Jacobs (1997) have concluded that prompt and adequate treatment of severe anxiety with anxiolytics and/or sedating antidepressants

will lower agitation, impulsivity, and the acute risk of suicide. Nevertheless, clinicians should be cautious about prescribing medications that may reduce self-control, such as the benzodiazepines. Montgomery (1997) noted that benzodiazepines may disinhibit some individuals who then exhibit aggression and suicide attempts.

Fawcett (2001) has postulated that SSRI's stimulate serotonin-2 receptors, resulting in a worsening of a patient's perception of anxiety during the first few weeks of treatment. The combination of increased anxiety and simultaneous relaxation of psychomotor inhibition elevates the risk of self-destructive acts such as suicide attempts and suicide. Fawcett argues for a need for extra vigilance on the part of physicians, therapists, and family members during the first few weeks of treatment for depression with marked anxiety.

## What Does Not Work

Not enough is known at the present time to identify ineffective practices.

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## The Prevention of Suicide

### What Works

While there are many promising approaches to the prevention of adolescent suicide, at the present time no approach has been tested three times successfully.

### What Might Work

The primary approach to youth suicide prevention is school-based prevention programs. Prevention has been attempted to a lesser degree through gatekeeper training and means (firearms) restriction.

### Gatekeeper Training
The primary assumption underlying training programs for gatekeepers is that the key

people who come into contact with youth at risk for suicide—teachers, counselors, physicians, mental health workers, parents, and community leaders—frequently lack the knowledge and skills necessary to identify such youth and respond to them effectively. These programs generally aim to increase suicide awareness and intervention skills among one or more caregiver groups.

Several gatekeeper training programs have reportedly been successful in improving participants' knowledge and awareness of youth suicide, and increasing their intentions to make appropriate intervention. For example, QPR Gatekeeper Training (Quinnett, 1995) was provided as part of the Washington State Youth suicide Prevention Program. A pre-post evaluation of the program found significant increases in participants' knowledge about suicide and willingness to act (get help) on behalf of a suicidal individual (Hazel & McDonell, 2002). Other disseminated programs include LivingWorks (Turley & Tanney, 1998) and Suicide Options, Awareness, and Relief (SOAR) (King & Smith, 2000). Most programs are relatively brief, however, and have not included long-term follow-up of participants to determine actual behavioral changes. Although evaluations of the LivingWorks and QPR program suggest that gatekeepers who receive the training report using the skills learned, and that the training has resulted in an increase in referrals to treatment, there are currently no data on the impact of training programs on suicidal behavior among youth.

### Means Restriction
The key assumption underlying programs that encourage restriction of access to firearms is that accessibility is a primary risk factor for suicide. Programs of this type have been directed primarily to parents/caregivers. A core strategy of firearms restriction programs has involved firearm safety counseling to parents that encourages removal or safe storage of firearms from homes where children reside. One such effort, entitled Love our Kids: Lock your Guns, was developed by Coyne-Beasley, Schoenbach, and Johnson (2001). The intervention aimed essentially to

reach male gun owners who lived with children, and thus was implemented in an outdoor community setting. Program developers provided firearms safety counseling, distributed free gunlocks, and demonstrated their use on a community-wide basis. A 6-month follow-up evaluation found improved safe storage habits among gun owners who had participated in the program. Participants with children, who overall were more likely than other gun owners to store weapons unlocked and loaded at baseline, were found in the posttest to be more likely to have removed guns from the home and to lock the guns that remained. Those who had participated in the counseling were also more likely to report talking with friends about safe storage practices. More recently, the Harvard Mean's Matter campaign has been found to be successful at raising awareness of the issues of firearms and risk of suicide in the home as well as access during times of crisis. Although the program developed by Coyne-Beasley and her colleagues, as well as the Mean's Matter program represents an important step in this direction, more widespread implementation and evaluation is needed before more definitive findings of impact can be reached.

## School Programs

### Universal Programs

The overall goal of universal programs is to create competent (Iscoe, 1974) school communities in which all members accept responsibility for the safety of each other and can provide an appropriate initial response to those at risk. The specific conceptual and empirical base for such programs is that suicidal youth are more likely to tell a peer about their thoughts or plans and the majority of these peer confidants do not tell an adult about their troubled peer. In addition school-based adults are usually the last choice for youth to turn to for their concerns (Kalafat, 2003). Therefore, current comprehensive universal school-based suicide prevention programs are designed to increase the likelihood that school gatekeepers (administrators, faculty, and staff) and peers who come into contact with at-risk

youth can more readily identify them, provide an appropriate initial response to them, will know how to obtain help for them, and are consistently inclined to take such action. The role of schools in this endeavor is critical, but limited to the identification and referral to specialized school or community-based mental health services.

In order to meet these goals, model comprehensive universal suicide prevention programs include the following components: (a) administrative consult to ensure appropriate policies and procedures for responding to suicidal youth and to ensure linkages between the school and local community services; (b) training for all faculty and staff on school procedures and resources, warning signs, and appropriate initial responses to at-risk students; (c) parent training, which covers the same material as school personnel training, with the addition of guidelines for means restriction and monitoring their offspring's internet use; (d) classroom lessons for students, usually as part of a health curriculum, that provide the knowledge, attitudes and skills for responding to at-risk peers and obtaining adult help. Programs can also include the development of school-and community-based crisis teams, as well as training for community gatekeepers.

Comprehensive universal prevention programs fit within the school's resources and culture because they have an educational rather than clinical focus; the classroom curriculum consists of packaged, self-contained lesson plans designed to be provided by teachers rather than external consultants; and, they fit within the existing curriculum structure without requiring pull-out activities. The student curriculum also uses appropriate instructional principles such as participatory activities, skills practice and feedback, and reinforcement and acknowledgement of students' experience (in this case, dealing with troubled peers).

Examples of programs that include these components are Adolescent Suicide Awareness Program (ASAP; now called SafeTeen) (Ryerson, 1990) and Lifelines (Kalafat & Underwood, 1989), each of which has been evaluated and widely disseminated.

Evaluations of universal suicide prevention classes have found significant increases in suicide knowledge and intent to seek help on behalf of troubled peers (Kalafat, 2003). A meta-analysis of 13 school-based suicide prevention programs found moderate average effect sizes of suicide knowledge, and ideation, and small positive effect size for attitudes for seven programs (Konick, Brandt, & Gutierrez, 2002). However, it is important to note that changes in knowledge and attitudes do not necessarily translate into behavior. Research needs to be done that provides evidence for the relationship between these proximal outcomes and such intermediate behavioral outcomes as increased identification and referral of at-risk youth by school-based adults and students. One school-based program, the SOS Suicide Prevention Program, was developed that combines brief classroom lessons to raise awareness about depression and suicide and promote help seeking with screening for depression and other risk factors associated with suicide. Initial evaluations indicate that the program is well received by students and staff, is not perceived as burdensome by staff, and resulted in 60 % increases in help seeking among students who participated in the program (Aseltine, 2003). An outcome evaluation in which 2,100 students from two schools were randomly assigned to intervention and control conditions found significantly lower self-reported attempts among the intervention group 3 months after the program was implemented (Aseltine & DeMartino, 2004).

Programs that focus on the identification and referral of at-risk youth must be complemented by effective treatment and follow-up of identified youth (Kalafat, 2001). As noted earlier, there is a dearth of research in this area. Moreover, in order to assess distal program effects (reduction of suicide rates) programs must be (a) carefully implemented with fidelity; (b) address multiple levels of school and community contexts (i.e., administrative policies & procedures; education for all school staff, etc.); (c) disseminated to enough sites to obtain large population samples for epidemiological impact assessment; and (d) institutionalized or sustained over sufficient length of time to detect epidemiological trends.

Data are available from two programs that meet these criteria. The programs were developed and implemented by a county (New Jersey) community mental health center (Kalafat & Ryerson, 1999) and a county (Florida) public school Department of Crisis Management (Zenere & Lazarus, 1997). Each was systematically disseminated and had been sustained for ten (Kalafat & Ryerson, 1999) and six (Zenere & Lazarus, 1997) years at the time of the reports in all secondary schools in urban/suburban counties that had an average of approximately 130,000 school-age youth. Each aimed to prepare schools and communities to identify, respond to, and obtain help for at-risk youth, as well as other health topics such as coping and self efficacy. The Florida program included additional health promotion programming for elementary and middle schools.

Follow-up studies were done, comparing suicide rates in the New Jersey and Florida counties with state and national suicide rates for the time periods prior to and after program implementation. Both follow-up studies found a reduction in county youth suicide rates subsequent to the dissemination of the programs that did not occur in these states or nationally for the same time periods (Kalafat, 2000). While these data cannot be conclusively linked to the programs, taken together, they meet some of the epidemiological criteria for supporting the possibility of causal relationships. These include consistency across studies, temporal sequence of exposure and outcome, and logical plausibility of the relationship (Potter, Powell, & Kachur, 1995); and, they provide encouraging initial support for comprehensive, community-oriented prevention approaches.

**Indicated Programs**

A conceptually grounded selective prevention program called Reconnecting Youth (RY) is a school-based prevention program for youth in grades nine through twelve (14–18 years old) who are at risk for school dropout (Eggert, Thompson, Herting, & Nicholas, 1995). RY uses a partnership model involving peers, school personnel, and parents to deliver interventions that are organized into four components, including school bonding activities, parent involvement, school

crisis response planning, and a RY class offered for 50 min daily during regular school hours for one semester (80 sessions). Subsequently, Eggert and her colleagues implemented and evaluated briefer versions of the RY class with potential drop-out students who were identified as at risk for suicide through a subsequent screening. Results indicated that a brief indicated intervention consisting of a risk assessment, crisis intervention, and enhanced connection with caring adults was sufficient for affecting short-term attitudes and ideation.

## Screening Programs

Universal screening programs are designed to identify and refer students at risk for suicidal behavior. Such programs focus specifically on identifying symptoms of psychopathology known to be related to adolescent suicidal behavior. Perhaps the most widely used screening program, the Columbia TeenScreen Program (CTSP), employs a multi-stage procedure. In the initial stage, students complete a brief, self-report questionnaire. Those who screen positive on this measure are given a self-administered computerized instrument, the Voice Diagnostic Interview for Children (Voice DISC). In the next stage, youth who have been identified through Voice DISC as meeting specific diagnostic criteria for a psychiatric disorder are interviewed by a clinician, who determines whether the student needs to be referred for treatment or further evaluation. Ideally, the program also includes a case manager who contacts the parents of students who are referred and establishes links with a clinic to facilitate treatment compliance.

CTSP has been found to have good sensitivity and specificity (Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000). The second stage of the screen that involves the Voice DISC is regarded as particularly important for avoiding over-assessment of students at reduced risk. Evaluation results reported to date indicate that most of the adolescents identified as high risk for suicide through the program were not previously recognized as such, and very few had received prior treatment. Slightly less than one-quarter of the students referred for treatment actually attended more than one treatment visit, however (Shaffer, 2003). In addition, the program's requirements of a clinician and a case manager may be a resource burden for many schools. In fact, school personnel have been less favorable toward screening programs than other school-based suicide prevention programs (Eckert, Miller, DuPaul, & Riley-Tillman, 2003; Hayden & Lauer, 2000). In addition to the low compliance rate with treatment referrals, which is likely a problem associated with all school-based programs, the often transient or episodic nature of suicidality among adolescents makes screening this population even more difficult to obtain accurate assessments of true youth suicidality. In most instances where school-based screening programs have been implemented, students are assessed at most only once a year, and in some cases, only once during their high school career.

In sum, school-based prevention programs that share the goal of promoting student awareness and help seeking appear to be well received and sustainable, which are critical for effective prevention initiatives. Controlled studies have demonstrated knowledge gains, improved attitudes toward help seeking, increases in intent to seek help in analog situations, increases in actual help seeking, and decreases in self-reported suicide attempts among program participants. Decreases in county youth suicide rates following county-wide implementation of programs have also been found. These universal programs are complemented by promising findings from controlled evaluations of indicated school programs for identified suicidal youth. All of these programs have a variety of components and findings are scattered among several similar programs. Large-scale dismantling studies are needed to identify the critical mediators or components of these programs associated with reductions in suicidal behavior. At present, universal school-based suicide prevention programs can be considered promising. Well-controlled evaluations with long-term follow-up provide strong support for indicated programs. Community gatekeeper programs and means restriction efforts are conceptually sound, but more controlled evaluations of gatekeeper programs are

needed, and innovative strategies for implementing effective means restriction initiatives must be developed.

## What Does Not Work

Based on research and field experience with school-based prevention programs aimed at a variety of problem behaviors, we also know what approaches do not work. One-time programs, such as assembly presentations, do not provide sufficient program dosage to effectively sustain knowledge or change behavior(s). Moreover, assembly presentations do not allow monitoring of students' reactions to the material. Programs should be careful in considering how to use and include media depictions of suicidal behavior, or presentations by youth or adults who have made suicide attempts, as these increase the potential risk of modeling or imitative effects for vulnerable youth. Outsourcing programs rather than developing in-school expertise fails to enhance available local resources. Similarly, poorly implemented programs, regardless of content or intent, will not have positive effects. Also, there is no basis for promoting a single approach, such as indicated approaches or annual screenings, rather than emphasizing the complementary role of different empirically and conceptually grounded ones.

## Recommended Best Practice

Suicide, and youth suicide in particular, continues to be an under-studied, under-evaluated, and unnecessary human tragedy. Suicide is not a medical condition that can be isolated and treated through traditional public health preventive "inoculations" or categorical clinical treatments alone. Rather, suicide is a multifaceted behavior that arises out of several complex biopsychosocial conditions. Initiating and evaluating interventions such as prevention and treatment in various contexts separately is not likely to affect youth suicide rates alone. Instead suicide, as with other youth dysfunctional behaviors, must

be addressed through community or systemic efforts that combine complementary approaches in a coordinated continuum or system of care. Each of the approaches or programs reviewed in this chapter can be seen as components of an effective system. These approaches must take into account characteristics of systems: e.g., (a) systems take time to develop and require constant maintenance, (b) context is critical, and (c) everything in a system is connected and therefore a system is only as strong as its weakest component (Sanddal et al., 2003). For example, schools and communities may support a broad positive youth development program that focuses on resilience. There is evidence that programs that promote generic protective factors such as social competence, decision making, family connections, and school bonding moderate the appearance of a variety of risk behaviors, including substance abuse, delinquency, violent behavior, and problem sexual behavior and pregnancies (Hawkins, Catalano, Kosterman, Abbott, & Hill, 1999; Lonczak, Abbott, Hawkins, Kosterman, & Catalano, 2002). While these comprehensive programs have not included suicide in their outcome assessments, there is some evidence for an association between protective factors such as connection with school and prosocial norms and reduced suicidal thoughts and plans (Castle, Duberstein, Meldrum et al., 2002; Castle, Duberstein, Nelson et al., 2002; Evans et al., 1996; McBride et al., 1995). However, such programs alone, although helpful, will not be sufficient to prevent the emergence of suicidal behavior. They should be complemented by a comprehensive school-based suicide prevention program that prepares adults and students to respond to youths at risk for inter- and intrapersonal violence. If the program's lessons are to be most effectively applied, they must reside in a school climate that emphasizes competence, mutual support, and contributions of its members. In addition, the program must comply with the culture of the school and community as well as the school's primary education and protection mandates; and it must be implemented with a degree of fidelity and packaged in a way that promotes sustainability. However, even if

a program proves to be effective in identifying youth at risk, it will be less effective if school or community-based services are not available and accessible to students. Coordination between the mental health service sector, the family, and the school is also recommended.

There is a model for such a comprehensive systemic approach to suicide prevention. The United States Air Force (USAF) specifically eschewed a strictly medical model in favor of a community approach under the rubric of the competent community. This initiative included a wide variety of components, including destigmatization of help seeking, fostering mutual support, training for providers, screening, and service coordination. The program has resulted in a 33 % reduction of suicide rates among USAF personnel, as well as reductions in homicide, accidental deaths, and moderate and severe family violence (Knox, Litts, Talcott, Feig, & Caine, 2003). It has been recognized as a model effective prevention program. Several states, including Maine, Maryland, and Washington have launched statewide multi-component youth suicide prevention programs that have been evaluated with mixed results, yet not nearly the same as the USAF model.

Despite the various efforts described above, youth suicide remains a significant cause of death among youth and young adults. Because of the interdependency of the components of these programs, they present challenges for evaluators. It will be necessary to carry out large-scale staged evaluations that establish the efficacy or internal validity of each component, followed by sophisticated research designs and statistical techniques to assess the contributions of components to the reduction of suicidal behaviors. Clearly, the evaluation of suicide treatment and prevention has made some progress, but largely remains in its infancy. However, recent developments, such as the development of state plans now in all states (Hayden, 2003), the publication of The National Strategy for Suicide Prevention (2001), and the revised The National Strategy for Suicide Prevention (2012), and the upcoming release of the first ever National Action Alliance for Suicide Prevention: Research Prioritization Task Force (2013), hold promise for concerted efforts to address this public health problem.

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Cecilia A. Essau and Bilge Uzun Ozer

## Introduction

Obsessive-compulsive disorder (OCD) is one of the most debilitating disorders which commonly emerge during childhood and adolescence (Pauls, Alsobrook, Goodman, Rasmussen, & Leckman, 1995). As reported by the World Health Organization (2000), OCD is among the top ten causes of disability worldwide. OCD was previously thought as rare in children and adolescents, but recent epidemiological studies have estimated that between 1 and 4 % of young people in the general population are affected by this disorder. However, these prevalence rates may be an underestimation because OCD often goes undetected (Flament et al., 1988) or misdiagnosed (Chowdhury, Frampton, & Heyman, 2004). OCD is associated with significant distress and impairment in family, social, and academic functioning (Piacentini, Bergman,

Keller, & McCracken, 2003). If left untreated, OCD that begins early in life tends to be chronic and disrupt social, education and emotional development (Laidlaw, Fallon, Barnfather, & Coverdale, 1999).

As the name implies, OCD comprises two main components: obsessions and compulsions. Obsessions are recurrent, unwanted and intrusive thoughts or images which cause significant anxiety or distress. Because of the intrusiveness and unpleasant nature of its contents, obsessions are often considered as "ego-dystonic" (Riggs & Foa, 1993). Obsessions are accompanied by feelings of intense anxiety, distress and feelings of catastrophe, leading to repetitive behaviour (i.e., compulsions) which is aimed at neutralizing and reducing anxiety or sense of perceived threat. Core features of obsessions are (a) recurrent and persistent thoughts, urges or images, which are experienced as intrusive and unwanted; (b) the individual attempts to ignore or suppress these thoughts, urges or images, or to neutralize them with other thought or action (i.e., compulsions). Compulsions are repetitive behaviour (e.g., hand washing) or mental acts (e.g., counting) which are performed to respond to an obsession, and are to prevent or reduce anxiety or distress, or to prevent the occurrence of a dreaded event. These behaviours or mental acts are not logically related to what they are meant to neutralize or prevent, or are excessive. It is this cycle of compulsion in response to obsession which

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could cause a negative reinforcement (as it temporarily reduces anxiety) which maintains OCD symptoms.

Several changes have taken place in the classification of OCD in DSM-5 (American Psychiatric Association [APA] 2013). First, OCD was classified in DSM-III to DSM-IV-TR under anxiety disorders. In DSM-5, OCD is included in a chapter on obsessive-compulsive and related disorders because of the relatedness of these disorders in terms of their diagnostic validators (e.g., symptoms, neurobiological substrates, familiarity, course of illness and treatment response), similarities in clinical features (e.g., repetitive behaviours) and clinical utility. It was further argued that it is the obsessions and compulsions, and not anxiety which form the main feature of OCD (Stein et al., 2010). It is also unclear as to the extent to which anxiety in OCD is the result of obsessions or compulsions (Nutt & Malizia, 2006). The removal of OCD from the anxiety disorders category is not without controversy. Several authors argued that OCD should not be removed from anxiety disorder category because of its high comorbidity rates with various types of anxiety disorders, and that they respond to the same treatment. Second, in order to have a more precise definition of obsession, the term "impulses" has been replaced by "urges". Third, unlike the earlier versions of DSM which include some insights that obsessions and compulsions are excessive or unreasonable is one of the criteria for the diagnosis of OCD, in DSM-5, having insight is the basis for specifiers. These three specifiers are "good or fair insight", "poor insight", and "absent insight/delusional beliefs". DSM-5 also has a tic-related specifier.

For the OCD diagnosis to be made in DSM-5 (APA, 2013), the following criteria must be made: (a) the presence of obsessions, compulsions, or both; (b) obsessions or compulsions are time-consuming (i.e., it takes at least one hour a day), or cause significant distress or impairment in important areas of functioning such as in social and occupational domains; (c) the obsessive-compulsive symptoms are not attributable to the physiological effects of a substance or another medical conditions; (d) The disturbance

is not better explained by symptoms of other mental disorders.

The same criteria of OCD can be applied to children, adolescents and adults. The only criterion which has been adjusted to young children is related to their inability to articulate the aim of their repetitive behaviour or mental acts.

## Prevalence, Age of Onset and Comorbidity

Epidemiological studies have estimated OCD to affect 2–4 % of adolescents and 1 % of children in the general population, making it to be one of the most common psychiatric disorders affecting individuals in these age groups (Essau, Conradt, & Petermann, 2000; Rapoport et al., 2000; Valleni-Basile et al., 1994, 1996; Zohar, 1999). However, these rates may be underestimated because OCD is often undetected due to young people's tendency to be secretive of their intrusive thoughts and repetitive behaviour (Cameron, 2007) and to parent's difficulty in recognizing OCD symptoms. In clinical setting, it may be related to the lack of recognition by the professional due to the diversity of presenting OCD symptoms and a failure to include assessment tool to screen for OCD (Rasmussen & Eisen, 1990).

The prevalence of OCD has been reported to vary across gender and age groups. Specifically, at prepubertal years, significantly more boys than girls are affected by OCD, with boys to girls ratio being 3:2. During adolescence, this gender difference tends to disappear (Geller et al., 1998; Rasmussen & Eisen, 1992).

Although the content of obsession and compulsions differs across individuals and age groups, certain themes seem to be common such as those related to cleaning, symmetry, forbidden thoughts and harm (APA, 2013). Among young children, the most common obsessive themes are that of contamination, exactness and symmetry (Geller et al., 1998; Masi et al., 2005; Swedo, Rapoport, Leonard, Lenane, & Cheslow, 1989), and the most common compulsions are ordering, checking, hoarding, repeating and reassurance seeking (Masi et al., 2005; Swedo et al., 1989).

Among older children and adolescents, the most common obsessions are fear of contamination, harm to significant others, self-preoccupation with lucky and unlucky numbers or thoughts with sexual or religious content (Thomsen, 1999); the most common compulsions are cleaning rituals (e.g., washing), checking, counting, straightening, touching, hoarding (Masi et al., 2005; Swedo et al., 1989), silent prayers or counting (Franklin et al., 1998). Although children and adolescents present with obsession and compulsion, young children tend to report only compulsion due to their cognitive development and their ability to identify and express their thoughts (Wever & Rey, 1997). DSM-5 recognizes this developmental difference by stating that children may be unable to describe the intention of behaviour or mental acts.

OCD has an early onset, with up to 80 % of adults with OCD reported the occurrence of their first OCD symptoms before the age of 18 years (Pauls et al., 1995). Other studies among adults reported the age of onset of OCD to be bimodal, with the first onset being in the puberty and the second one in early adulthood (Geller et al., 1998). Among studies in children and adolescents, the mean age of onset for OCD is usually about 10.4 years, with ages ranging from 6.9 to 12.5 years (Geller et al., 1998; Stewart et al., 2004). OCD is associated with a wide range of impairment at various life domains. Children with this disorder have significant academic and social difficulties, as well as difficulties in family relations (Piacentini et al., 2003; Storch et al., 2010). As reported in several studies, young people with OCD have trouble making new friends and keeping friends, or in having friends over at their home either during day time or for sleeping over (Storch et al., 2006; Valderhaug & Ivarsson, 2005). In most cases, these impairments are directly related to the amount of time that these young people spend in doing the rituals (American Psychiatric Association, 2000). Severe forms of OCD have also been linked to increased victimization (Storch et al., 2006; Ye, Rice, & Storch, 2008). A recent study (Kim, Reynolds, & Alfano, 2012) indicated that children with OCD were less socially competent and that they tend to be more

socially isolated and refrain from doing activities where peers could see their OCD symptoms. This is related to their concerned of being seen as odd (Swedo et al., 1989).

Impairment was significantly predicted by severity of OCD and depressive symptoms, family accommodation and insight (Storch et al., 2010). Interestingly, some of these factors predicted impairment in certain domains. Specifically, poorer insight predicted impairment at home and social activity, but not in school. It was argued that children with higher compared to lower insight were able to hide their rituals when they were with friends and by doing so, their interpersonal relationship was not impaired. In explaining for the association between impairment and family accommodation, the authors argued that family involvement in their child's ritual reinforced the child's behaviour and limit the child's opportunity to develop and apply problem-solving skills to cope with anxiety-provoking situations. Of all the OCD symptom dimensions, those related to contamination/cleaning and aggressive/checking were significantly linked with impairment, possibly given the difficulty in avoiding their triggers (Storch et al., 2010).

In a study by Storch et al. (2008), children with low insight were found to have more severe OCD symptoms, more repeating compulsion, more internalizing symptom and higher levels of family accommodation. Lewin et al. (2010) recently examined the relationship between insight and intellectual functioning and perceived control among children and adolescents who attended a community medical centre-based OCD specialty program. Adolescents who had low insight were found to have lower level of intellectual functioning compared to those with high insight. It was argued that these adolescents who were more concrete in their thinking tend to be more likely to believe that the "danger" are experienced through obsessive beliefs is real which in turn make them more likely to adhere to their obsessive-compulsive beliefs.

OCD comorbid frequently with a wide range of psychiatric disorders such as with anxiety, depressive and eating disorders, tic disorder, ADHD and conduct disorder (e.g., Langley,

Lewin, Bergman, Lee, & Piacentini, 2010; Storch et al., 2010). As reported by Storch et al. (2008), about 74 % of the young people with OCD also met the criteria of one or more psychiatric disorders. The comorbidity rates however vary across studies due to methodological differences. For example, in the Pediatric OCD treatment study (2004), 80 % of the children had at least one psychiatric comorbid disorders. In other clinical settings, as high as 80 % of the youth with OCD has been reported to have comorbid depressive disorders and up to 70 % and 60 % have anxiety and tic disorders, respectively (Flament et al., 1990; Geller, Biederman, Griffin, Jones, & Lefkowitz, 1996). The presence of comorbid disorder was related to lower treatment response and lower remission rates, and to higher relapse rates (Geller et al., 2003; Storch et al., 2008).

## Course and Outcome of OCD

OCD that begins in childhood tends to have a chronic course (Geller, 2006) and is associated with an increased risk for a wide range of psychiatric disorders in adulthood (Wewetzer et al., 2001). The remission rates of those with a childhood onset OCD have been reported to range from 40 to 59 % (Stewart et al., 2004). Poor long-term outcomes of OCD were associated by an early age of onset, poor response to medication treatment, presence of comorbid tic disorder, and an inpatient hospitalization for OCD (Masi et al., 2010; Stewart et al., 2004).

Bolton, Luckie, and Steinberg (1995) examined the course of OCD among adolescents who were treated for the disorder using family and behaviour therapy. At a follow-up period of 9–14 years, the recovery rate was 57 %, which was also associated with good social adjustment. None of the adolescents who recovered were taking medication. In a recent study by Micali et al. (2010), 41 % of the children who received a diagnosis of OCD still receive the same diagnosis at a 9-year follow-up assessment. About 69.8 % of the participants received a wide range of Axis I ICD-10 diagnosis at follow-up, with GAD (25–40 %) being the most common, followed by depressive

disorders (15.9 %) and tic disorder (15.9 %). Approximately 66.4 % of the participants did receive professional help for their OCD since discharge from the specialist clinic and half of them are still receiving treatment; most of the treatment was pharmacological in nature (42 %). Predictors for the stability of OCD at follow-up was duration of OCD at baseline, while as the presence of comorbid tourette syndrome or tics at baseline reduces the risk of OCD persistence. In a study by Bloch et al. (2009) about 44 % of the participants with a childhood onset OCD experienced remission at a follow-up evaluation conducted on average of 9 years later. About 60 % of the patients continued to take SSRI and 31 % no longer using this medication. The presence of comorbid chronic tic disorder seemed to influence the remission time. Specifically, 62 % of the patients with childhood OCD with comorbid chronic tic disorder, compared to 22 % of those without any comorbid chronic tic disorder had remitted.

More recently, Fernández de la Cruz et al. (2013) examined the stability of OCD symptoms in a group of paediatric from a clinical setting who were examined twice over an average of 5 years. Findings indicated that 60 % of the participants maintained their symptoms between baseline and follow-up. Symptom categories that were related to forbidden thoughts, hoarding and symmetry remained stable, whereas aggressive obsessions, cleaning and compulsions disappeared completely at follow-up. The strongest predictor for the presence of symptom dimensions at follow-up was the same dimension at baseline. Overall, this finding showed that the content of OCD symptoms were relatively stable.

## Assessment

Assessing OCD in children and adolescents is complicated because of the heterogeneity nature of the disorder and the high comorbidity rates between OCD and other psychiatric disorders. In young children, this is further hampered by their cognitive development. Some of the ritualistic behaviour is part of normal development and as such they tend to be self-limiting, rarely distressing,

**Table 13.1** Examples of self-report measures of OCD symptoms in children and adolescents

| Measure (Reference) | Informant Age | Items | Response format (range) | Domains assessed | Internal Consistency Test-retest reliability, and validity |
|---|---|---|---|---|---|
| Obsessive-compulsive inventory-child version (OCI-CV; Foa et al., 2010) | Child/adolescent Age: 7–17 years | 21 | 0 = Not at all; 3 = Very much | Doubting/checking, obsessing, hoarding, washing, ordering, neutralizing | Internal consistency: $\alpha = .81$ Good convergent and discriminant validity |
| Child Obsessive-Compulsive Impact Scale (COIS-C and COIS-P, Piacentini et al., 2003) | Child and parent | 56 | 1 = Not at all; 4 = Very much | School, social, home/family activities | Internal consistency: $\alpha = .91$ Good concurrent validity, and test-retest reliability |
| Children's Obsessional Compulsive Inventory (CHOCI; Shafran et al., 2003) | Child/adolescent Age: 7–17 years | 32 | 0 = Somewhat; 2 = A lot | Obsession Compulsion | $\alpha = 0.80–0.86)$ Adequate convergence validity Good criterion validity |
| The Children Yale-Brown Obsessive-Compulsive Scale (CY-BOCS; Scahill et al., 1997) | Child/adolescent Age: 8–17 years | 10 | 0 = None; 4 = Extreme | Obsession; Compulsion | $(\alpha = 0.87–0.90)$ Satisfactory convergent and divergent validity of the CY-BOCS-CR |

and tend to change with developmental stage. As reported by Evans et al. (1997), some of the ritualistic behaviour which first appears includes the need to arrange things "just right" or in symmetrical pattern. These behaviours generally peak between the ages of two and five (Evans & Leckman, 2006), and are related to developmental milestones that involve mastery and control (Gesell, 2007). These behaviours are followed by concerned with dirt and germs, and the urge to collect and store objects.

Therefore, having a reliable and valid instrument for assessing OCD is crucial for both research and clinical practice. Some of the most commonly used instruments with their psychometric properties are shown in Table 13.1. Some of these instruments have been developed to screen for OCD, while others are used to establish symptom severity and treatment plan (Overduin & Furnham, 2012).

## Biological/Genetic factors

Family studies conducted over the past few decades have reported the rates of OCD to be significantly higher in first degree relatives of patients with OCD than relatives of healthy controls. For example, Hanna, Himle, Curtis, and Gillespie (2005) compared the prevalence of OCD among first and second relatives of children with OCD and healthy controls. The result showed significantly higher lifetime prevalence of OCD among first degree relatives (22.5 %) compared to control relatives (2.6 %). Several other studies have reported rates of OCD among first degree relatives to range from 17–23 % in children probands (Chabane et al., 2005; do Rosario-Campos et al., 2005). First degree relatives of OCD patients also displayed the same types of obsessions and compulsions (e.g., ordering, checking, symmetry) (Mataix-Cols et al., 2004) as displayed by the OCD patients.

Family studies that have focused on the age of onset of OCD had reported interesting findings. Specifically, OCD was more common in relatives of probands with child onset of OCD, compared to those with adult onset (Nestadt, Samuels, Riddle et al., 2000). No cases of OCD were found among relatives of patients whose OCD began after the age of 18 years. This finding led to the proposal that OCD that begin in childhood may have a stronger genetic component than OCD that begins in adulthood. Although

these findings provide support for the genetic components of OCD, the way in which the genes operate remains unclear (Walitza et al., 2011). Furthermore, because shared environmental influences were not controlled for in some studies the role of heritability may have been exaggerated (Abramowitz, Taylor, & McKay, 2009).

Unfortunately genetic relatedness cannot tease apart similarity due to genetic from shared environmental influences, because in addition to sharing the genes, members of the same family are likely to share the same family environment (Zavos, Eley, & Gregory, 2013). Thus, twin studies are more useful than family studies in estimating the influence of genetic and environmental factors in relation to OCD. In twin studies familiarity into genetic and environmental components is disentangled by comparing within-pair similarity for monozygotic (MZ) twins and dizygotic (DZ) twins who have in common their shared environment but differ in their genetic relatedness (Zavos et al., 2013). MZ twins share 100 % of their genetic make-up whereas DZ twins share on average half their segregating genes (Plomin, Defries, McClearn, & McGuffin, 2008).

Twin studies have suggested that genetic factors are implicated in the transmission of OCD (van Grootheest, Cath, Beekman, & Boomsma, 2005). A study by Arnold and Richter (2007) found significant greater concordance rates for OCD in monozygotic (MZ) compared one to dizygotic twins (DZ). Hudziak (2004) reported the presence of additive genetic (range: 45–58 %) and unique environmental influences (range: 42–55 %) in OCD. However, a review of over 70 years of twin research of OCD indicated that only studies that used dimensional approach and structural equation modelling to analyse the data have convincingly showed obsessive-compulsive symptoms are heritable in children with genetic influences in the range of 45–65 % (van Grootheest et al., 2005). Environmental factors explain about 50 % of the "individual variation in vulnerability to OCD" (Samuels, 2009, p. 279). In explaining this finding, it was argued that environmental factors may activate OCD among individuals who are genetically vulnerable in developing this disorder.

## The Autoimmune model

The autoimmune model postulates that some cases of OCD are caused by a disruption in autoimmune processes, called the cortico-striatal-thalamic-cortical circuits (Swedo et al., 1993). This distinct form of OCD is called Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS; Swedo et al., 1998), which affect about 6 % of children with OCD (Swedo, Leonard, & Rapoport, 2004). Sydenham's chorea (SC) occurs after streptococcal infections (Swedo et al., 1997), leading to anti-neuronal antibody-mediated response to Group A beta-haemolytic streptococcal (GABHS) infection.

Following the first report of PANDAS, Swedo et al. (2004) investigated children in whom GABHS triggered or potentiated symptoms of OCD and tic disorder. The onset of symptom was described as acute and dramatic, and in 72 % of these patients, symptom onset was associated with GABHS infection. However, in all the participants, recurrence of at least one symptom was preceded by GABHS infection within the first six weeks before the assessment. Some patients with multiple recurrences of symptoms did not have any signs of a streptococeal infection a month before the assessment. The course of the disorder has a relapsing-remitting pattern with the presence of comorbid problems including separation anxiety, night time fears, cognitive deficits, emotional liability, oppositional behaviours and motor hyperactivity. The presence of comorbid symptoms especially that of ADHD tended to make the GABHS infection worst.

Based on this study, Swedo et al. (1993) developed five inclusion criteria for diagnosis of PANDAS: (1) presence of OCD and/or a tic disorder; (2) paediatric onset between 3 and 12 years of age; (3) episodic course of symptom severity. The onset of symptoms is described as sudden or by dramatic symptom exacerbations during which the symptoms may appear to "explode" in severity. Symptoms may decrease between episodes and resolve between exacerbations; (4) symptom exacerbations must be associated temporally with GABHS infection, i.e., associated with positive throat culture and/

or elevated anti-GABHS antibody titters; (5) during symptom exacerbations, neurologic abnormalities are common, including adventitious movements (e.g., choreiform movements) and neurologic abnormalities (e.g., motor hyperactivity), or deteriorations in fine motor skills (e.g., deterioration in handwriting).

In the study by Murphy and Pichichero (2002), all the children with PANDAS had a primary diagnosis of OCD with an abrupt onset. Two of them had recurrent tics. Almost all of the children had an acute GABHS tonsillopharyngitis a month before being diagnosed with OCD whose OCD symptoms disappeared following treatment with antibiotics. Recurrence of OCD was reported in half of the children. Although the above studies have given support for the presence of PANDAS, some authors (Singer & Loiselle, 2003) suggested the need to conduct prospective epidemiological studies to examine the extent to which the onset or exacerbation of OCD or tic disorder is indeed triggered by GABHS.

## Other Factors

Some studies have examined the impact of environmental factors in the development of OCD. Geller et al. (2008) examined the impact of perinatal factors in the expression of OCD by comparing youth with OCD with matched controls (i.e., without OCD and ADHD). Among children with OCD, the presence of sleeping problems, and severe irritability in infancy predicted comorbid anxiety disorders, and perinatal jaundice which needed treatment predicted chronic tic disorder. Children who needed an incubator in the postnatal period or need to be hospitalized following mothers discharge and excessive crying in infancy and whose mother consumed medication and drug during pregnancy had an increased risk of having comorbid ADHD. Their result also showed maternal accidents that require medical care during pregnancy were associated with an early onset of OCD. The authors argued that perinatal insult may have disrupted development on migration of neuronal elements in cortical-striatal-thalamic circuits.

## Neurochemical model of OCD

The neurochemical model postulates that OCD is caused by abnormality in specific serotonin metabolism, hence, called the "serotonergic hypothesis" (SH) of OCD (Gross, Sasson, Chopra, & Zohar, 1998). The strongest support for the SH comes from studies involving SSRI which were developed for inhibition of the neuronal uptake pump for serotonin (5HT).

This model has received support from neuropsychopharmacology research. Serotonin is the main neurotransmitter implicated in OCD. Clinical trials have demonstrated the superiority of SSRIs to drug placebo in the treatment of OCD in children and adolescents (March & Mulle, 1998). In fact, SSRIs are the only medication which has been proven to be more effective than placebo in children with OCD (Rapoport, Leonard, Swedo, & Lenane, 1993). Five SSRI which are known to alter the 5-HT system and which are used for the treatment of OCD include paroxetine, sertraline, fluoxetine, citalopram and fluvoxamine.

## Individual Factors Influencing Risk and Resiliency

Cognitive models of OCD postulate that obsessions and compulsions are the results of catastrophic misinterpretation of intrusive thoughts (Allsopp & Williams, 1996). The Obsessive-Compulsive Cognition Working Group (OCCWG, 2001) has identified six domains of cognition that are important for the development and maintenance of OCD in adults. These include inflated responsibility (Salkovskis, 1996); over-importance of thoughts (e.g., thought–action fusion) (Rachman, 1993); control of thoughts (e.g., thought suppression; Clark & de Silva, 1985); and meta-cognitive beliefs (Wells & Papageorgiou, 1998); overestimation of threat; intolerance of uncertainty and perfectionism. Three of these cognitive processes have been tested in children and adolescents: (a) inflated responsibility (Salkovskis, 1996), (b) thought–action fusion (Clark & de Silva, 1985) and (c) meta-cognitive beliefs (Wells & Papageorgiou, 1998).

## Inflated Responsibility

According to the inflated responsibility (Salkovskis, 1996), individuals with OCD tend to believe that they are mainly responsible for harm or failing to prevent harm to themselves or others. Consequently, they feel distressed at the possibility that they may cause harm, unless actions are taken to prevent the harm from happening by performing certain rituals and neutralizing behaviour.

Studies that have examined the association between inflated responsibility and OCD symptoms have produced inconsistent findings. Some studies have shown high level of inflated responsibility interpretations among children with OCD compared to those without OCD (Libby, Reynolds, Derisley, & Clark, 2004). For example, in a study by Reeves, Reynolds, Coker, and Wilson (2010), children were randomized into three levels of responsibility: high, moderate and low responsibility. The children were asked to sort sweets onto those with and without nuts and they were also told that these nuts will be distributed to children, one of whom had a nut allergy. Their findings showed that OCD behaviour such as hesitation, checking and time taken were related to children's level of responsibility. Specifically, children in the high inflated responsibility group were slower, checked more and were more hesitated; children in the moderate responsibility group were in the mid-range between the high and the low responsibility groups. Responsibility attitudes were significant predictor of obsessive-compulsive symptoms (Magnusdottir & Smari, 2004). Furthermore, compared to TAF or meta-cognitive beliefs, inflated responsibility was a better predictor of obsessive-compulsive symptoms (Matthews, Reynolds, & Derisley, 2007).

However, other studies failed to support the findings on the association between OCD and inflated responsibility. For example, Barrett and Healy-Farrell (2003) examined the role of inflated responsibility in children and adolescents with OCD by using a behavioural avoidance task to manipulate responsibility. This task involved a situation which normally lead to compulsive

behaviour and inflated perceptions of responsibility. Their finding failed to find any associations between inflated responsibility and an increased level of distress, avoidance and ritualizing behaviours.

Given the role of inflated sense of responsibility in the development and maintenance of OCD, Salkovskis, Shafran, Rachman, and Freeston (1999) have proposed five pathways that could explain for the origin of this cognitive belief. These pathways include: (a) Children may develop a broad sense of responsibility at an early age: this may take place when the child is required to perform important tasks for which he/she is responsible for negative occurrence. Such high sense of responsibility may lead to feelings of conscientiousness and a sense of responsibility. A failure to meet that responsibility could lead to a "sense of failure, disappointment and guilt" (Salkovskis et al., 1999, p. 1060). These authors further claimed that behaviour which is mostly linked to the sense of responsibility is to prevent the anticipated mishaps. (b) Rigid codes of conduct and duty might have been established within the family and educational context in which the child feels the need to follow a sense of responsibility. (c) The sense of responsibility may have developed during childhood as a result of being withheld from it, or being treated as incompetent to cope with responsibility by people around the child. For example, parents may convey the message to the child that since danger is near, it is better to be safe. However, when negative events happen, the child is criticized for not taking appropriate actions to prevent the negative outcome from happening. (d) A heightened sense of responsibility follows a critical event and the individuals believe that the occurrence of a negative outcome is related to something that they did or did not do. (e) Incident in which one's thoughts or actions is wrongly considered to have led to negative outcomes for self or others. This pathway is characterized by misinterpretation of events that are coincidentally linked, as is a case when one's own thoughts and a negative outcome for others is causally related. An example is when one wishes someone to be ill, and to discover

that person is ill. These five pathways tend to overlap considerably in influencing responsibility, and not mutually exclusive.

Studies that examined Salkovskis et al.'s model (1999) on the five pathways to inflated responsibility are rare. Lawrence and Williams (2011) compared these pathways to responsibility beliefs in a group of adolescents with and without a history of OCD. Adolescents with a history of OCD were found to report a higher sense of responsibility for specific incidents with a negative outcome before the onset of their OCD compared to adolescents who have no history of OCD. It was argued that the combination of inflated sense of responsibility and the occurrence of specific incidents might interact with each other and act as a vulnerable factor for the development of OCD. A recent study by Farrell, Hourigan, and Waters (2013) showed that mothers of children with OCD were significantly more enhancing of their child's responsibility than mothers of children without any clinical diagnoses. Mothers of children with OCD also seemed to implicate that the child was responsible for the action that need to be taken to resolve the situation, compared to those in the non-clinical group. This finding was interpreted as giving support to the proposed pathway for the development of dysfunctional inflated responsibility beliefs (Salkovskis et al., 1999).

## Thought–Action Fusion

Thought–action fusion (TAF; Rachman, 1993) is a cognitive bias in which thoughts and actions are considered to be equivalent. It also misinterprets intrusive thoughts as meaningful, personally significant and are likely to have negative consequences. Rachman (2003) identified two types of TAF, namely TAF-morality and TAF-likelihood. TFA-morality is defined as a belief that an intrusive thought is about an unacceptable behaviour which is morally equivalent to performing it. TAF-likelihood refers to the belief that thinking about a feared event will increase the probability that the event will occur. Both beliefs generally lead to high distress level, resulting in individuals engaging in neutralizing behaviour in order to prevent the feared events from happening.

Libby et al.'s study (2004) found TAF (i.e., likelihood other) to be significantly higher in the OCD groups of adolescents compared to those with anxiety disorders and adolescents in the non-clinical group. In a recent study by Evans, Hersperger, and Capaldi (2011), the best predictor of compulsive-like behaviour in 7–9 year olds was physiological anxiety. Among 9–11 year olds, TAF particularly the harm-avoidance subscale, best predicted compulsive-like behaviour, while as in the 11–14 year olds, the best predictor was TAF-self. It was argued that as children become older, they experience less TAF and perform less rituals behaviour. Other studies have shown TAF to not being a specific marker for OCD, but to a range of other mental disorders such as with anxiety and depressive disorders (Barrett & Healy-Farrell, 2003; Muris, Meesters, Rassin, Merckelbach, & Campbell, 2001; Simonds, Demetre, & Read, 2009). An exception was a study by Libby et al. (2004) where TAF was found to be significantly higher in the OCD groups of adolescents compared to those with anxiety disorders and those without any anxiety disorders.

## Meta-cognitive Beliefs

These are beliefs about the importance and meaning and/or dangerous consequences of intrusive thoughts in the development of obsessional thinking (Wells, 1997). Beliefs about the need to control thoughts and/or do rituals are also considered important. It further hypothesizes that neutralizing and avoidance behaviour increase the frequency of intrusive thoughts through constant monitoring, which in turn prevent the testing of negative thoughts.

A number of studies among non-clinical sample of adolescents have found meta-cognitive beliefs to significantly correlate with obsessive-compulsive symptoms (Cartwright-Hatton et al., 2004: Reynolds & Reeves, 2008). For example, in a study by Matthews et al. (2007), OCD symptoms correlated significantly with inflated

responsibility, TAF, and with meta-cognition. Further analysis showed responsibility appraisal to completely mediate the effect of TAF, and to partially mediate the effect of meta-cognition. Mather and Cartwright-Hatton (2004) examined whether meta-cognition or inflated responsibility to be a better predictor of OCD symptoms in 13–17 year olds. They found responsibility and meta-cognition to both correlate significantly with OCD symptoms. After controlling for age, gender and depression, meta-cognition and not inflated responsibility was a significant predictor of OCD symptoms. In another study, Cartwright-Hatton et al. (2004) found meta-cognitions to correlate significantly with OCD symptoms, and also with anxiety and depressive symptoms. It was argued that meta-cognition may be a general marker to a wide range of psychopathology.

## Family Factors Influencing Risk and Resiliency

Familial factors such as family environment, parenting styles, parental cognitive bias, and parental accommodation of the child's OCD symptoms have been examined as possible risk factors for the developmental and maintenance of OCD.

## Family Environment

Families of children and adolescents with OCD have been described as being distress (Peris et al., 2008; Piacentini et al., 2003; Storch, Geffken et al. 2007), and as having high family discord and blame (Peris et al., 2008). These problems were associated with the high level of disruption to that family report (Piacentini et al., 2003). The finding related to high level of hostility, blaming response styles and disrupted interpersonal functioning (Peris et al., 2008; Piacentini et al., 2003) could explain for the difficulties that these families have in various psychosocial functioning. The quality of the family interactions in adolescents with OCD was also characterized as having less emotional support, warmth and closeness

compared to adolescents without any psychiatric disorders (Valleni-Basile et al., 1995).

## Parenting Rearing Styles

Parental styles which may be implicated in OCD include parental control, overprotection, reject, criticism, and lack of parental care (Waters & Barrett, 2000). The latter includes warmth, affection and support that the parents show to their children. Several authors argued that the association between lack of parental care and obsessive beliefs may be related to the parent–child attachment (Doron, Kyrios, & Moulding, 2007; Yarbro, Mahaffey, Abramowitz, & Kashdan, 2013). According to the attachment theory (Bowlby, 1973), attachment forms the basis for the formation of cognitive working models about one's world, other and the self which in turn influence the development of obsessive beliefs (Doron et al., 2007). That is, the quality of children early interaction with attachment figure could lead to the development of belief that the world is threatening and oneself as incompetent, all of which could form the basis of obsessive thoughts (Doron et al., 2007). A recent study by Yarbro et al. (2013) showed an association between perceived neglectful parenting and obsessive beliefs. Another important finding was that attachment anxiety (i.e., characterized by negative feelings about the self and about others) partially mediated the relationship between perceived neglectful parenting and responsibility/threat estimation and perfectionism/uncertainty. Overall, this finding seemed to suggest that perceived lack of parental care is related to anxious attachment and to distorted cognitions about the self and others all of which contribute to cognitive vulnerabilities for OCD (Yarbro et al., 2013).

Barrett, Shortt, and Healy (2002) compared parent–child interaction in three groups of children (i.e., children with OCD, children with externalizing disorders and children without any psychiatric disorders) when responding to hypothetical situation that involved potential social and physical threat. Children with OCD were found to be less confident, less positive problem-

solving and less warmth compared to children in the other two groups. Compared to parents of children in the other groups, parents of children with OCD tended to be less confident in their child's ability, used less positive problem-solving strategies, and less likely to reward their child's independence.

## Parental Cognitive Bias

According to Hudson and Rapee's model of generalized anxiety disorder (2004), parents with high anxiety tend to have cognition which focused on their child's vulnerability and/or the dangerousness of the world. This cognitive bias makes them being controlling and overprotective when interacting with their child, which in turn signals or reinforces the child's perception that the world is a dangerous and unpredictable place. Studies which have examined the impact of parental cognition on the child's cognitive appraisal reported that anxious children made more threat interpretation compared to non-anxious children (Shortt, Barrett, Dadds, & Fox, 2001). Lester, Field, Oliver, and Cartwright-Hatton (2009) similarly found that anxious parents tended to interpret situations that they encounter as threatening to both themselves and their child.

Farrell, Waters, and Zimmer-Gembeck (2012) examined the association of cognitive bias (responsibility bias, thoughts-action fusion, thought suppression, and meta-cognitive beliefs) and maternal cognitive bias among children and adolescents who have been referred for the treatment of OCD. Their findings showed a moderating effect of age between the child's OCD severity and child's cognitive bias, and maternal cognitive bias. The association between the child's maladaptive beliefs (child responsibility and meta-cognitions) and OCD severity were significant in the adolescent subsample, but not in the younger child subsample. It was (Farrell et al., 2012; Verhaak & de Haan, 2007) argued that cognitive biases may be related to the way in which adolescents attribute the meaning which occurs following the perception of the need to conduct a compulsive behaviour. They also found

a significant positive correlation between the child OCD severity and maternal cognitive bias (maternal responsibility and thought suppression); however, no correlation was found with adolescent OCD severity and maternal cognitive bias. The authors (Farrell et al., 2012) argued that mothers of adolescents may have denied the presence of their own symptoms in their child during adolescence. Alternatively, increased cognitive bias in adolescence could have an ameliorating affect on mother's own bias.

## Family Accommodation

Family accommodation refers to the action taken by family members either directly (e.g., participate in the child's ritual) or indirectly such as by changing family's lifestyle in responding to the child's OCD symptoms, providing reassurance, minimizing responsibilities, and providing assistance with tasks (Waters & Barrett, 2000). The main reasons for family accommodation include an attempt in helping to stop the child's rituals and distress of both the affected child and the family (Riddle et al., 1990). Among the most common forms of family accommodation are verbal reassurance, facilitation of avoidance, and participation in the child's rituals (Peris et al., 2008; Storch, Geffken et al., 2007). For example, in a study by Flessner et al. (2011), about 33.3 % of the parents reported assisting their child in avoiding anxiety-provoking situations daily. Parents who accommodated to their child's OCD tended to have high OCD symptoms themselves, high level of hostility, or global psychopathology (Peris et al., 2008). Furthermore, family accommodation was significantly correlated with child's OCD symptoms and low family organization (Peris et al., 2008).

Family accommodation seems to have important impact on child's treatment response and course and outcome. Specifically, children's positive response to cognitive-behavioural therapy (CBT) was related to a decrease in parental accommodating to the child's OCD (Merlo, Lehmkuhl, Geffken, & Storch, 2009). It has been argued that parental accommodation may be resistant to ERP tasks as an increase in the child's anxiety

may lead to parental anxiety which in turn could comprise treatment compliance and/or adherence. Furthermore, family accommodation may contribute to functional impairment (Peris et al., 2008; Storch, Merlo et al., 2007) by reinforcing a child's rituals and/or avoidance behaviours.

## Social and Community Factors Influencing Risk and Resiliency

Children and adolescents with OCD, compared to normal controls, reported more negative life events both during the lifetime and a year before the onset of the disorder, and that these events were perceived as having more impact (Gothelf, Aharonovsky, Horesh, Carty, & Apter, 2004). The most common event experienced was related to major illness or injury of a relative. Major illness or injury was the only event that differentiated those with OCD from those with other types of anxiety disorders and normal controls.

Findings on the association between OCD and social class are inconsistent. In the British nationwide survey of child mental health, 74 % of the children and adolescents with OCD were reported to be from the lower social classes (Heyman et al., 2003). However, Flament et al. (1988) found no significant correlation between OCD and socioeconomic status. Among children in clinical setting (Hanna, 1995), a reverse trend was found in that OCD seems to be widespread among those in high social class. Most of the children with OCD also come from families with lower incomes and from larger families compared to normal controls (Heyman et al., 2003).

## Evidence-Based Treatment Interventions for OCD

### What Works

### Behaviour Therapy: Exposure and Response Prevention

The theoretical basis of exposure and response prevention (ERP) is Mowrer's 2-stage theory and some early experiments by Rachman and his colleagues. Mowrer's theory (Mowrer, 1960) has two stages: (a) acquisition of anxiety and fear; (b) maintenance of this anxiety and/or fear. According to Mowrer, anxiety is acquired when neutral event becomes associated with fear when paired with a stimulus that is increasingly distress provoking. Through conditioning process, objects and thoughts acquired the ability to produce a conditioned response (e.g., fear or anxiety). During the second stage, avoidance or escape behaviour (i.e., compulsion) is developed to reduce the anxiety evoked by conditioned stimuli, which are maintained by reducing anxiety (i.e., act as a negative reinforcement) (Riggs & Foa, 1993). It is this negative reinforcement that helps to maintain the presence of OCD (Benito, Conelea, Garcia, & Freeman, 2012). Consequently, in ERP, children are exposed to an anxiety-provoking stimulus in a hierarchical fashion, and at the same time being asked to refrain from performing their compulsions. Exposures can be either in vivo and/or imaginal, and which must be long enough and repeated frequently enough for anxiety habituation to take place (Foa & Franklin, 2001); habituation involves reducing anxiety response as a result of sustained contact and repeated exposure to anxiety-provoking stimulus (Benito et al., 2012). During the ERP, the children learn that they do not need to ritualize to reduce their anxiety and that the obsessions are not catastrophic and with time, their anxiety will eventually decline. Thus, they learn that the feared situations they anticipate do not materialize and there is no need for them to protect themselves by ritualizing.

Although the first case of ERP to treat OCD was published in 1966 by Meyer, empirical study that examined the effectiveness of this treatment method was only published in 1983. Bolton, Collins, and Steinberg (1983) were among the first to have examined the effectiveness of ERP in children and adolescents who were hospitalized for OCD. They found that about 87 % of the young people showed improvement at post-treatment. A major limitation of this study was the absence of standard treatment protocol. Furthermore, because these young people received numerous other therapies, it was not

possible to assess the specific effect of ERP. In a study by Wever and Rey (1997), 68 % of the adolescents who had ERP and SRI were remitted, and 60 % of them showed a significant decrease in OCD symptoms at 4 weeks. About half of the patients were no longer on medication and were able to maintain their treatment gains for about 2 years. Adolescents who received SRI only showed less and slower improvement when reassessed at 6 months.

The use of ERP in children has been questioned as it is found to be aversive and challenging which could have explained for a high drop-out rate, in the range of 20–40 % (Allsopp & Verduyn, 1990; Bolton & Perrin, 2008).

### Cognitive-Behavioural Therapy

Expert consensus guidelines have recommended CBT as the treatment of choice for OCD in children and adolescents (March, Frances, Carpenter, & Kahn, 1997; National Collaborating Centre for Mental Health, 2006). CBT consists of different components (i.e., psychoeducation, hierarchy building, ERP, cognitive restricting, and reward program) which are mostly conducted in sequential manner. For example, the March and Mulle (1998) treatment protocol has four phases (Moore, Franklin, Freeman, & March, 2013). The first stage focuses on psychoeducation about the nature of OCD, its behavioural, cognitive and neurobiological underpinnings. By focusing on OCD as a medical illness, it helps to change the family process by identifying OCD as the problem and not the child. This reframing helps to form an alliance between the child and the family and the therapist to deal with OCD symptoms. OCD is described as a "brain hiccup" which causes individuals to feel anxious in the presence of certain thoughts or actions. During the second stage, the concept of the cognitive toolbox is introduced to the child and his/her family. This involves teaching children the concept of cognitive resistance (i.e., bossing OCD) and self-administered positive reinforcement and encouragement. These cognitive tools are meant to prepare children to do exposure and response prevention tasks. The third phase involves creating a map of the child's OCD, which include

specific obsessions and compulsion, precipitators of OCD symptoms, avoidance behaviour, consequences, creation of stimulus hierarchy; the children are then asked to rank order the levels of distress that they anticipate to experience when exposed to the obsessional trigger without engaging in the ritual. During the exposure itself, the children are exposed to the obsessional trigger which they anticipate as producing the lowest level of anxiety and without having to engage in the compulsion. The final phase of treatment involves the implementation of CBT which comprises guided exposure and response prevention, and homework assignments.

Following the publication of the treatment manual by March and Mulle (1998), a considerable body of research has provided support for the efficacy and effectiveness of CBT in treating OCD. As shown in Tables 13.2, 13.3 and 13.4, the remission rates for young people who had participated in the CBT have been reported to range from 40 to 85 % (Barrett et al., 2004; Pediatric OCD Treatment Study [POTS], 2004), and between-group effect sizes ranging from 0.99 to 2.84 (Barrett, Farrell, Pina, Peris, & Piacentini, 2008).

Few studies had offered "intensive" CBT by compressing the CBT sessions that are normally delivered over a period of two to three months to one to two weeks. The aim of doing this is to overcome practical problems of attending treatment such as having parents to take time off in order to bring the child for treatment (Storch, Geffken et al., 2007). The intensity of CBT delivery seems to impact the treatment outcome in some studies but not in others. In a randomized trial of intensive versus weekly family-based CBT, a higher remission rate was obtained for the intensive group (75 %) compared to the weekly group (50 %) (Storch, Geffken et al., 2007). A greater reduction in family accommodation of OCD symptoms was also found in the intensive group than the weekly group. However, no significant group differences were found in any of the outcome measures by three months after treatment. Whiteside and Jacobsen (2010) examined the feasibility and effectiveness of the ERP to anxiety-provoking stimuli over a 5-day period.

**Table 13.2** Selected studies using cognitive-behavioural therapy for paediatric OCD

| Studies | Children characteristics | Treatment protocol | Outcome |
|---|---|---|---|
| March, Mulle, and Herbel (1994) | Age: 8–18 years (mean = 14.3 years). Gender: 33 % Setting: outpatient | – Standardized protocol, consisting of psychoeducation, anxiety management training, exposure relapse prevention<br>– 3 parent sessions<br>– 3–21 sessions in children and adolescents | – 40 % patients in remission at post-test<br>– 60 % patients in remission at follow-up |
| Tolin (2001) | Age: 5 years old Gender: boy A case study | – Cognitive behaviour therapy including parent- and teacher-directed extinction of compulsive reassurance seeking and bibliotherapy with an age appropriate book on OCD | – Compulsive behaviour decreased and remained at a low level during the treatment<br>– Significant reduction in OCD symptoms 1 and 3 months after treatment |
| Whiteside, Brown, and Abramowitz (2008) | Age: 13–18 years Gender: 2 females and a male A case series | – Cognitive behaviour therapy including exposure and response prevention (ERP)<br>– 10 sessions over 5 days | – Substantial improvement in OCD symptoms and overall functioning<br>– 56.1 % of reduction |
| Jacqueline and Margo (2005) | Age: 8–14 years old (M = 11.3) | Group Cognitive-Behavioural Treatment with family involvement<br>– 14 week—90 min format | – Significant decrease in OCD symptoms (25 %): the change was from moderate-severe to mild-moderate |
| Oline et al. (2011) | Age: 6–17 years old (M = 12.36) Gender: 33 % female Setting: outpatient | – ERT in an intensive outpatient community based program<br>– Up and down the Worry Hill Protocol | – Significant reduction in OCD symptom severity regardless of age or gender |
| Whiteside and Jacobsen (2010) | Age: 10–18 (M = 13.13) Gender: 7 females, 9 males | – 5 days of CBT based on ER<br>– One 50-min (but sometimes as long as 75 minutes) session in the morning, one in the afternoon<br>– The child and parent were taught to carry out exposures themselves | – Significant decrease in OCD symptoms from pre- to post-treatment, and from post-treatment to 5 months later |
| O'Leary, Barrett, and Fjermestad (2009) | Age: 13–24 (M = 18.4) Gender: 53 % male | – Individual or group cognitive-behavioural family-based therapy for childhood OCD<br>– Follow-up: 7 years after the treatment | – 79 % of individuals who had individual therapy, and 95 % of those who had group therapy, no longer met the diagnosis of OCD |
| Barrett, Farrell, Dadds, and Boulter (2005) | Age: 8–19 years (M = 13.85) Gender: 47.9 % male | 14 weeks of manual-based CBT: participants received either individual or group cognitive-behavioural family therapy | – 70 % of individuals who had received individual therapy, and 84 % of individuals who had received group therapy, did not have an OCD diagnosis at the time of follow-up<br>– Cognitive-behavioural family therapy, regardless of its mode of delivery is effective on a long-term basis |

| Study | Age/Gender | Treatment | Results |
|---|---|---|---|
| Storch et al. (2006) | Age: 9–13 years (M = 11.1 ± 1.4 year) Gender: 4 males, 3 females | – Participants suffered from OCD of the Paediatric autoimmune neuropsychiatric disorders associated with streptococcus – 3 week intensive course of CBT. 6/7 participants were taking selective serotonin reuptake inhibitor medication(s) at presentation | – 6 participants responded to treatment, 3 of these 6 were deemed responders 3 months after treatment |
| Merlo et al. (2009) | Age: 6–18 years (M = 12.8) Gender: 55 % male | 14 sessions of family-based cognitive-behavioural therapy for OCD | – Family-based CBT is associated with a considerable reduction in family accommodation; this reduction is associated with a positive response to treatment |
| Barrett, Healy-Farrell, and March (2004) | Age: 7–17 years | – Participants were in 1 of 3 conditions: (1) individual cognitive-behavioural family-based therapy (CBTF) (2) group CBTF (3) a 4–6 week waitlist control condition – Treatment: 14 weeks of manualized cognitive-behavioural protocol and 2 booster sessions; parents and siblings were involved | – Significant alteration in diagnosis and severity of symptoms (statistically and clinically) for both individual and group CBFT – No significant differences between individual and group CBFT |
| Benazon, Ager, and Rosenberg (2002) | Age: 8–17 years old. Gender: 16 male, 8 female | 12-week open trial with manualized CBT | – After treatment, the symptoms of 10/16 participants reduced by at least half, and 7 were symptomless – CBT may be helpful in treating paediatric OCD, including without the use of medication |
| Farrell, Schlup, and Boschen (2010) | Age: 7–17 years old (M = 12.29) Gender: 16 girls, 19 boys | 12 weeks of weekly sessions of CBT administered either individually or in small groups. Parent sessions took place after each session 2 further sessions at 1 and 3 month(s) after treatment | – 63 % of the sample did not have an OCD diagnosis after treatment |
| Franklin et al. (1998) | Age: 10–17 (M = 14.1) Gender: 10 males, 4 females | CBT using exposure and ritual prevention: 7 patients received intensive treatment (averaging 18 sessions over 1 month); and 7 received weekly treatment (averaging 16 sessions during a period of over 4 months). 6 of the patients received only the CBT, and 8 received CBT and serotonin reuptake inhibitors | – 12/14 patients who participated in CBT had improved by at least 50 % after treatment, and continued to be improved at follow-up |
| Piacentini, Bergman, Jacobs, McCraken, and Kretchman (2002) | Age: 5–17 (M = 11.8) Gender: 60 % female | 12.5 (on average) 1 h weekly sessions of manual-guided open CBT treatment based on exposure plus response prevention | – 78.6 % of participants were "positive responders" to treatment |
| Storch, Geffken et al. (2007) | Age: 7–17 (M = 13.3 ± 2.7). Gender: 22 female, 18 male | 14 sessions (daily or weekly) of family-based CBT | – Intensive and weekly treatment were equally helpful – No significant differences between the groups at the 3-month follow-up |

(continued)

**Table 13.2** (continued)

| Studies | Children characteristics | Treatment protocol | Outcome |
|---|---|---|---|
| Thienemann, Martin, Cregger, Thompson, and Dyer-Friedman (2001) | Age: 13–17 (M = 15.2) Gender: 12 males, 6 females | 14 weeks of group (5–9 patients) CBT; a 2 h session every week | – OCD symptoms of 9 patients ameliorated by 25 % of more; 5 patients experienced an amelioration of between 13–18 %; the symptoms of 3 subjects only slightly altered; and the condition of 1 person deteriorated |
| Valderhaug, Larsson, Götestam, and Piacentini (2007) | Age: 8–17 (M = 13.3). Gender: 50 % female | 12 manual-guided sessions of CBT (both individual and family) | Substantial improvements occurred; the average reduction in symptoms was 60.6 % after treatment, and 68.8 % 6 months after treatment |
| Storch et al. (2013) | Age: 7–17 years | Participants were provided with 1 of the 3 types of treatment over 18 weeks: (1) Sertraline at the standard dose and CBT (2) Sertraline titrated slowly but receiving 8 weeks (at the minimum) of the "maximally tolerated daily dose" of it, and CBT (3) a placebo and CBT | – Approximately 61.7 % of the participants responded to treatment<br>– No differences in pace of response between groups |
| Asbahr et al. (2005) | Age: 9–17. Gender: 26 male, 14 female | 12 weeks of treatment: patients received either sertraline or group CBT | – Relapse at 9 months after treatment was considerably less in group CBT than sertraline group |
| Franklin, Tolin, March, and Foa (2001) | Case study of a 12-year-old boy with OCD | Intensive CBT with Exposure and Ritual Prevention: 2 assessment sessions and 11 treatment sessions were provided 5 days a week. The patient was also on medication during the time the CBT was administered | – OCD symptoms significantly reduced after 11 exposure and ritual prevention sessions<br>– 3 months after treatment the boy was found to have no OCD symptoms or depression symptoms |

**Table 13.3** Selected studies using medication for paediatric OCD

| Studies | Children characteristics | Treatment protocol | Outcome |
|---|---|---|---|
| Alderman, Wolkow, Chung, and Johnston (1998) | Age: 6–17 years old ($M = 12.8 \pm 2.7$) Gender: 33 male, 28 female The participants suffered from major depression, OCD or both | Participants were given 50 mg sertraline. 1 week later they commenced a 35 day course of sertraline—then either they: (1) began with 25 mg/day, titrated to 200 mg/day through increases of 25 mg, or (2) they began on 50 mg/day (the amount adults typically commence with), gradually titrated to 200 mg/day, through increases of 50 mg | – No pharmacokinetic differences were seen between the different titrations <br> – Efficacy measurements suggested symptoms of both conditions decreased. Sertraline is possibly valuable in treating young patients with major depression or OCD |
| Cook et al. (2001) | Age: 6–18 ($M = 12.5$) Gender: 52 % male | Participants had undergone a 12-week, double-blind, placebo-controlled sertraline course. They then underwent an open-label sertraline course for 52 weeks (they received 50–200 mg/day during this time) | At post-treatments, 72 % of the children (ages 6–12) and 61 % of the adolescents (ages 13–18) fitted the response criteria |
| Geller et al. (2001) | Age: 7–17 (mean for the fluoxetine group: 11.4 ± 3.0; mean for the placebo group: 11.4 ± 2.8) Gender: 54 male, 49 female | – Patients underwent a double-blind, placebo-controlled study for 13 weeks <br> – Patients were administered either fluoxetine or a placebo | – Fluoxetine was significantly more effective than the placebo in reducing OCD symptoms <br> – Fluoxetine 20–60 mg/day is useful for paediatric OCD |
| Moore, Macmaster, Stewart, and Rosenberg (1998) | 9-year-old boy | Paroxetine (a selective serotonin reuptake inhibitor) for 12 weeks. Starting dose was 10 mg/day; this was titrated to 20 mg/day | OCD symptoms improved significantly; there was also significant modification to the glutamate resonance in the caudate |
| Riddle et al. (2001) | Age: 8–17 years old (mean age of fluvoxamine group was 13.4; mean age of placebo group was 12.7) Gender: in the fluvoxamine group, 50.9 % of patients were male; in the placebo group, 55.6 % of patients were male | Participants first underwent a 7–14 day "single-blind, placebo washout/screening period". Then, for 10 weeks, they either took 50–200 mg/day of fluvoxamine or a placebo. Participants who had not responded after 6 weeks were allowed to stop the double-blind part of the study and commence a long-term, open-label fluvoxamine trial | – Fluvoxamine was significantly more successful than the placebo in ameliorating OCD symptoms: 42 % of fluvoxamine patients and 26 % of placebo patients were responders <br> – Fluvoxamine had positive effect quickly, to be well tolerated and to be helpful for short-term treatment of OCD |
| Rosenberg, Stewart, Fitzgerald, Tawile, and Carroll (1999) | Age: 8–17 Gender: 9 boys; 11 girls | 12 week open-label trial of paroxetine (10–60 mg/daily) | The medication seemed effective: the average score of the CY-BOCS reduced from 30.6 ± 3.5 to 21.6 ± 6.8 |

**Table 13.4** Selected studies using other psychological interventions for paediatric OCD

| Studies | Children characteristics | Treatment protocol | Outcome |
|---|---|---|---|
| Comer et al. (2012) | Age: 4–8 years old. (M = 5.4 years) Gender: 6 females, 9 males | 12 sessions of anxiety-based modification of Parent–Child Interaction Therapy (this modified version is the CALM Program: coaching approach behaviour and leading by modelling) | All treatment-completers were considered "global treatment responders". One participant did not show "full diagnostic improvements", and one did not show "meaningful functional improvements" |
| Owens and Piacentini (1998) | 8-year-old boy with OCD and comorbid disruptive behaviour problems | – ERP<br>– Twelve 45 min sessions (attended by the boy and his mother) over 4 months<br>  The boy also completed homework about 5 days a week, also involving exposure plus response prevention<br>– A contingency management program was also used (during the sessions and at home) to control his disruptive behaviour | Post-treatment assessment (2 and 6 months afterwards) suggests significant improvement in symptoms |
| Bolton and Perrin (2008) | Age: 8–17 (M = 13.2) Gender: 6 female, 14 male | One group of participants received exposure plus response prevention administered intensively over a 5-week period, without medication being administered at the same time. The second group were assigned to a waitlist condition | Significant improvement in the group receiving the exposure plus response prevention, in comparison with the controls. This improvement remained 14 weeks after the treatment |
| Simons, Schneider, and Herpertz-Dahlmann (2006) | Age: 8–17. The mean age of the ERP group was 13.39; the mean age of the MCT group was 14.53. Gender: 7 males, 4 females | – Participants were assigned to have either meta-cognitive therapy (MCT) or ERP (Exposure with ritual prevention).<br>– Participants received manualized treatment each week, for up to 20 sessions | OCD symptoms improved significantly in both groups. The CY-BOCS score went down from 20 to 1 in the ERP group, and from 26 to 6 in the MCT group ($z = -2.032$, $p = 0.042$) MCT is a potential alternative to ERP |
| De Haan, Hoogduin, Buitelaar, and Keijsers (1998) | Age: 8–18. Gender: 50 % female | Participants were placed in 1 of 2 conditions for 12 weeks in this parallel design: (1) behaviour therapy; (2) open Clomipramine (the average dosage given was 2.5 mg/kg) | – Children in both conditions significantly improved.<br>– On the CY-BOCS, behaviour therapy brought about more significant therapeutic changes; however the LOI-CV did not yield significant differences between the two groups |

The 15 children with OCD and their parents were taught to do ERP at home. Results showed significant reduction in OCD symptoms from pre- to post-treatment, which was maintained at 5-month follow-up. Overall this finding provided further support for the feasibility of an intensive treatment for OCD in children and adolescents.

In order to understand how and for who works, increasingly more studies have examined the mediators and moderators of CBT in paediatric OCD. Factors that were associated with poor CBT treatment outcome included baseline severity of obsessions and OCD-related academic difficulties, whereas age, gender, medication status, or the presence of comorbid disorders did not have any impact on the treatment outcome (Piacentini et al., 2002).

In addition to examining the effectiveness of CBT in reducing OCD, studies have also examined the impact of CBT in changing young people's subjective distress during and after the treatment. As recent findings by Kircanski, Wu, and Piacentini (2013) showed significant reduction in subjective distress among young people during CBT for OCD. Decrease in child distress between sessions, throughout and at post-treatment was predicted by severity of OCD, psychosocial impairment and the presence of internalizing symptoms (i.e., withdrawn behaviour and social problem) at pre-intervention. Higher obsession scores and social impairment predicted greater decrease in distress at post-treatment, and OCD-related functional impairment predicted lesser decrease in distress throughout the CBT. These findings emphasize the importance of continually examining between-session change in subjective distress and using this information to guide and enhance treatment (Kircanski et al., 2013).

Few studies have examined the feasibility and transportability of CBT for paediatric OCD when delivered in routine-based clinical setting. Valderhaug et al. (2007) examined the effectiveness of CBT in three community clinics in Norway among 8–17 year olds with OCD. At post and 6-month follow-up assessment periods, there was 60.6 and 68.8 % reduction in CY-BOCS ratings, respectively.

## CBT and Medication

The Pediatric OCD Treatment Study (POTS, 2004) is the largest study to date that has examined the efficacy of CBT alone, sertraline alone, or CBT and sertraline, or pill placebo among the treatment for young people with OCD. A total of 11 young people completed the 12 weeks treatment. Result showed that the most effective form of treatment for paediatric OCD is the combination of CBT and sertraline where remission rate of 54 %. Remission rates for CBT alone, sertraline alone, and for placebo were 39.3 %, 21.4 % and 3.6 %, respectively. In the POTS II study (Franklin et al., 2011), 7–11 year olds with OCD were randomly assigned to 1–3 treatment strategies: medication management alone, medication management and instructions in CBT, or medication management plus CBT. Compared to the other two treatment strategies, medication management combined with CBT was found to be the most superior. The rate of responders was 68.6 % in the medication management and CBT group, compared to 34.0 % in the medication management and instructions in CBT group, and 30.0 % in the medication management alone.

Asbahr et al. (2005) compared the efficacy of group-based CBT to that of SSRI in Latino children and adolescents. At post-test significant improvement was found in both treatment conditions with no significant group difference, conducted 9 months later. However, patients in the CBT group had lower relapse rate than those in the SSRI group.

## What Might Work

Given the role of family in the development and maintenance of OCD, several studies have involved parents in CBT. It was argued that getting parents involved in the treatment could be helpful because it helps to reduce family involvement in the compulsions as well as to support the child in doing the ERP (Barrett et al., 2004). Barrett et al. (2004) compared the efficacy of the individual cognitive-behavioural family-based therapy (CBFT) and group CBFT. No significant group differences were found between these

two treatment conditions at post, 3-months and 6-months follow-up. Seven years after the treatment (O'Leary et al., 2009), 87 % of the children were found to have no longer met the diagnosis of OCD. This study provided support for the long-term gain of CBFT for children with OCD.

The study by Simons et al. (2006) was among the first studies to have examined the efficacy of meta-cognitive therapy (MCT) for the treatment of paediatric OCD. In this study, 11 children and adolescents with OCD were randomly assigned to either the MCT or the ERP groups. None of them received pharmacotherapy for their OCD. MCT involves the appraisal of dysfunction meta-cognitive appraisal (e.g., thought–action fusion) and meta-cognitive process (e.g., selective attention). Obsessional thoughts are normalized and are accepted as they are. MCT also uses thought control experiments, behavioural experiments, and socratic dialogue to help young people change their meta-cognitive strategies and appraisals which may be responsible in maintaining their OCD symptoms (Simons et al., 2006). In illustrating how to use the MCT, the authors gave an example of an adolescent with bad commanding and blasphemous and "just right" thoughts, and whose compulsions involved touching and licking the floor and furniture. The dysfunctional thought–commandment fusion that the adolescent used was "if I think …, I have to do it". Some of the ways in which the adolescent were taught to handle the thoughts were suppressing, evoking and accepting. The adolescent also used meta-cognitive reframing and thought-imperative defusion (e.g., you cannot do everything that you think of). The result showed that both treatment approaches were shown to produce significant reduction in OCD symptoms severity. These positive effects were found after 13 sessions of ERP and after 9 sessions of MCT, which were maintained two years after the treatment begin.

## What Doesn't Work

Empirical data to support the benefit of psychoanalytic psychotherapy for OCD symptoms are currently not available (Heyman, 2005). Therefore, the National Institute for Health and Clinical Excellent (NICE, 2005) does not recommend it to be used in young people with OCD.

## Psychopharmacology and OCD

In the UK, the selective serotonin reuptake inhibitors (SSRIs) are recommended as a last choice of treatment for children, and should only be used in treating individuals with moderate and severe OCD, or after unsuccessful treatment with psychological therapy (NICE, 2005). Furthermore, the NICE cautions the use of the SSRIs because of their unknown effect on the child's development, as well as their side effects such as appetite suppression and nausea. Despite this warning and because of their wide availability, medication is a common form of treatment with adolescents with OCD. Of all the available medications, serotonin reuptake inhibitors, which work through their action on serotonin neuro-transmission are the most common (Tables 13.2, 13.3, and 13.4).

Numerous trials that have examined the effectiveness of various SSRIs (i.e., sertraline, fluoxetine, fluvoxamine and paroxetine) have reported their effectiveness in reducing OCD symptoms when compared to placebo (Geller et al., 2004; March & Mulle, 1998; Riddle et al., 2001). A tricyclic (i.e., clomipramine) has also been reported to be effective among children and adolescents with severe level of OCD (Leonard et al., 1989). A meta-analysis of paediatric pharmacotherapy trials showed both SSRIs and clomipramine to have significant and modest effect sizes (Geller et al., 2003). However, when comparing these two groups of medication, clomipramine compared to SSRIs, was reported to have larger effect size (Geller et al., 2003).

## The Prevention of OCD

Despite the availability of evidence-based effective treatment for OCD, about 50.8 % of children had not received any treatment for OCD prior to clinic attendance (Chowdhury et al., 2004).

Among those who received treatment, most of them (42 %) received medication alone (i.e., SSRI or clomipramine), 7 % received CBT in combination with medication, and 9 % received other treatments (i.e., analytical psychotherapy, family therapy, and cranio-facial therapy). Factors related to low mental health services utilization were: lack of resources available locally, long waiting lists to see the primary care therapists, clinician's lack of awareness of evidence-based practice. These findings underlined the importance of prevention.

## What Works

There are no available studies on the prevention of OCD.

## What Might Work

Due to the low rate of mental health services utilization, a long waiting list, and to the fact that OCD is frequently unrecognized or misdiagnosed, it is important to find strategies to make effective intervention accessible to those with OCD or to those with high risk of developing OCD (Chowdhury et al., 2004). One such effort is to provide interventions in school settings that could prevent the development of OCD. Prevention programs may be universal, selected, or indicated (Mrazek & Haggerty, 1994). Universal intervention is directed at the whole population. Selective intervention involves children who have been identified as at risk of psychological problems, whereas indicated intervention targets children who have been identified as having mild to moderate symptoms of a disorder. A universal approach to prevention in schools teaches children generic skills that may be used in a number of everyday situations; it also helps to promote learning and healthy development. Essau, Conradt, Sasagawa, and Ollendick (2012) recently evaluated the effectiveness of the FRIENDS (Barrett, Lowry-Webster, & Turner, 2000), an Australian cognitive-behaviour therapy-based program, in reducing anxiety symptoms

among children. Children who participated in the FRIENDS program showed significantly fewer anxiety symptoms than children in the control group at 12-month follow-up. Within the anxiety disorder symptoms, OCD showed significant differences at both 6- and 12-month follow-ups. A study using the FRIENDS program in the UK (Stallard, Simpson, Anderson, Hibbert, & Osborn, 2007) has similarly found a significant reduction in the OCD symptoms among young people who participated in this program.

## What Doesn't Work

There are no available studies which report preventive program that does not work.

## Recommended Best Practice

OCD is a chronic and disabling condition which is characterized by the presence of intrusive thoughts and/or repetitive behaviours (APA, 2013). It is associated with psychosocial impairments in various life domains, and if left untreated, the OCD and its associated impairment tend to persist into adulthood. Despite these impairments, a high percentage of those with OCD either did not, or had long delays in receiving effective treatments (Hollander & Wong, 1998), possibly due to lack of access to these treatments. The reason for this limited access included the fact that it is not widely used by mental health professionals; among adults with OCD some of the reasons for not participating in CBT were cost (57 %), available of insurance coverage (38 %) and time (31 %) (Marques et al., 2010). This has led to other alternative way to deliver CBT which makes it more accessible and less time-consuming and costly. One such alternative is the use of "stepped care" approach.

The Clinical Practice Guideline, a guideline commissioned by the NICE in the UK (2006) recommended the use of "stepped care" for OCD. The "stepped care" approach starts by delivering the least intensive intervention (e.g.,

self-help) and only move to the more intensive therapy if it is not effective (Haaga, 2000). This seems to be a useful approach given the number of young people with psychiatric disorders, including OCD, who are in waiting list to see a mental health professional. The main focus of each of the steps is: (a) Step 1 involves providing information about OCD and its impact on the children and their families. Such information could be provided by various public organizations. (b) Step 2 involves recognition and assessment of OCD by health or mental health professionals. At this stage, treatment options will be discussed and referral is made at the appropriate levels. (c) Step 3 involves providing initial treatment of OCD by mental health professional such as guided self-help and CBT (including ERP). (d) Step 4 follows due to poor response to initial treatment (CBT, including ERP). At this stage, a combined treatment of CBT (including ERP) and medication (e.g., SSRI, alternative SSRI or clomipramine) should be considered. (e) Step 5: young people whose OCD is associated with significant comorbidity, or severe psychosocial impairment and/or treatment resistance are referred to specialist and multidisciplinary care where they will receive CBT (including ERP) in combination with SSRI or alternative SSRI or clomipramine. (f) Step 6: young people whose OCD is associated with severe self-neglect or severe distress need to be reassessed and their treatment options discussed. In most cases, these young people are referred for inpatient care or intensive treatment programs. Treatment generally includes a combination of medication (e.g., SSRI or clomipramine) and CBT (including ERP).

In adults, about one-third of patients responded to lower intensity guided self-help and that two-thirds received the higher intensity treatment (Gilliam, Diefenbach, Whiting, & Tolin, 2010; Tolin, Diefenbach, & Gilliam, 2011). Furthermore, a standard treatment condition was found to be as effective as the stepped care program; they differ only in their cost of delivery in that the stepped care program was found to be more cost-effective than standard treatment (Tolin et al., 2011).

Studies have also demonstrated some evidence that adults who received CBT that were delivered by telephone showed similar positive outcome and satisfaction level as when the CBT sessions were delivered face to face (Lovell et al., 2006). CBT delivered by telephone were about 30 min shorter than when CBT sessions were delivered face to face. This translated to about 40 % saving in therapist's time, thus, reducing the cost involved. Turner, Heyman, Futh, and Lovell (2009) examined the feasibility and outcome of using telephone in delivering CBT to young people with OCD. Half of these adolescents were taking SSRI at the time of referral. CBT sessions were conducted once a week with young people and their parents at an agreed time. Intervention was based on a CBT treatment manual that is commonly used among young people who receive face-to-face CBT in a clinical setting. The participants were given a workbook with work sheets for them to record their assignment. The findings showed telephone-administered CBT to be an effective way of delivering CBT to young people. Specifically, about 70 % of them achieved remission of their OCD. Participants rated telephone CBT to be convenient, flexible, and less stressful than the traditional CBT.

Given the wide availability of computer and other information technology several computer-based prevention and early intervention programs have been developed for anxiety and depressive disorders. According to a systematic review of the literature on internet interventions for child and adolescent anxiety and depression by Calear and Christensen (2010), four internet-based programs have been developed and evaluated (BRAVE-ONLINE, Project CATCH-IT, MoodGYM and Grip op je dip online). Evaluation studies on these programs reported significant reductions in anxiety and depressive symptoms at post-intervention and at follow-up. Another progress is the use of handheld computer-assisted CBT for various anxiety disorders among adults (Clough & Casey, 2011). Given its widespread use among young people, handheld technology (e.g., mobile phones) could make it an excellent devise to deliver CBT. To our knowledge, no

computer-based prevention programs have been developed specifically for paediatric OCD. However, given the high comorbidity between OCD and anxiety, psychological intervention that focuses on anxiety and its role in OCD is an important starting point for a successful CBT to treat OCD (Heyman, 2005).

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# Oppositional Defiant Disorder and Conduct Disorder

Deborah M. Capaldi and J. Mark Eddy

## Introduction

Delinquent acts, which are key symptoms of conduct disorder during adolescence, peak between ages 14 and 17 years (Blumstein, Cohen, Roth, & Visher, 1986). Peak ages at police arrest are typically at ages 18 and 19 years for both boys and girls in the USA (e.g., Uniform Crime Reports, 2009). Thus, conduct disorder and delinquency in adolescence have been the focus of many prevention and intervention efforts. Indeed, conduct problems, including impulsive, defiant, and aggressive behaviors, are the most common reason for referrals to child mental health clinics in the Western hemisphere (Frick, 1998) and have the poorest prognosis for adult adjustment of any childhood disorder (Kohlberg, Ricks, & Snarey, 1984). Conduct problems are associated not only with pervasive developmental failures (Capaldi & Stoolmiller, 1999) in domains where success is

vital for achievement during adulthood, such as academics, but also with serious and maladaptive behaviors during adulthood, such as substance abuse (Wiesner, Kim, & Capaldi, 2005) and violence toward romantic partners (Capaldi, Knoble, Shortt, & Kim, 2012). Conduct problems, thus, have been the target of nationwide efforts in a variety of countries to understand causes and consequences, to prevent emergence, and to treat symptoms.

An influential theory regarding the etiology of conduct problems is the general theory of crime (Gottfredson & Hirschi, 1990). The basic argument is that a lack of self-control is the underlying propensity factor driving conduct problem behavior across the life course, and that this parsimonious explanation is all that is required to explain such behavior. Propensity could be genetic or could be due to other factors, such as physiological conditions in utero (e.g., exposure to nicotine), or to external environmental conditions, such as problematic early parenting. Other influential theories include genetic, social learning, and cognitive theories, and evidence relating to these will be discussed later in the chapter. Beyond domain theories such as these, however, that focus on the casual importance of one or relatively few factors, there is now a general consensus that the development of antisocial behavior involves a prolonged process of interplay between the characteristics of the individual youth (e.g., undercontrolled temperament) and their key social environments.

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Our overarching theory regarding the development of conduct problems, the Dynamic Developmental Systems model, is based on an integrative theoretical framework that helps to clarify the role of the different domains of risk factors in the emergence and continuance of these behaviors. The model is an extension of the general lifespan approach (e.g., Elder, 1985) and the ecological model (Bronfenbrenner, 1986), and encompasses biological influences and further articulates both developmental and social influence processes. Key social systems (e.g., with parents and with peers) are viewed as particularly influential on behavior. Because of the very strong association of age and psychopathology, these systems and their interactions must be viewed within a developmental framework. Another key aspect of the theory relates to two types of risk for problem outcomes, namely general risk associated particularly with the development of conduct problems, and outcome-specific risk (e.g., for youth substance use from parent and peer substance use). Figure 14.1 illustrates the interaction of the individual characteristics of the developing child with the social environment (for simplicity only parent and peer associations are illustrated).

Supporting an integrative model such as this, Murray and Farrington (2010) recently conducted a review of large-sample community studies focused on the causes of conduct disorders and delinquency involving prospective, longitudinal designs. They concluded that the most important risk factors are impulsiveness, low IQ and low-school achievement, poor-parental supervision, punitive or erratic parental discipline, cold-parental attitude, child-physical abuse, parental conflict, disrupted families, antisocial parents, large-family size, low income, antisocial peers, high-delinquency-rate schools, and high-crime neighborhoods. They point out, however, that it is still not known for many of these risk factors whether they have causal effects, and they call for more studies examining the effects of changes in the risk factors on conduct problems. Further, conduct disorders frequently are comorbid with other child and adolescent psychiatric disorders—including disorders involving anxiety, depression, attention deficit hyperactivity, and substance use (Angold & Costello, 2001)—and part of a general pattern of high comorbidity of domains of psychopathology (Kessler et al., 2012). Thus, the genesis and maintenance of conduct problems can involve a wide variety of disorders and their causes and consequences. Due to these issues, the DSM-V will make new attempts to address comorbidity issues.
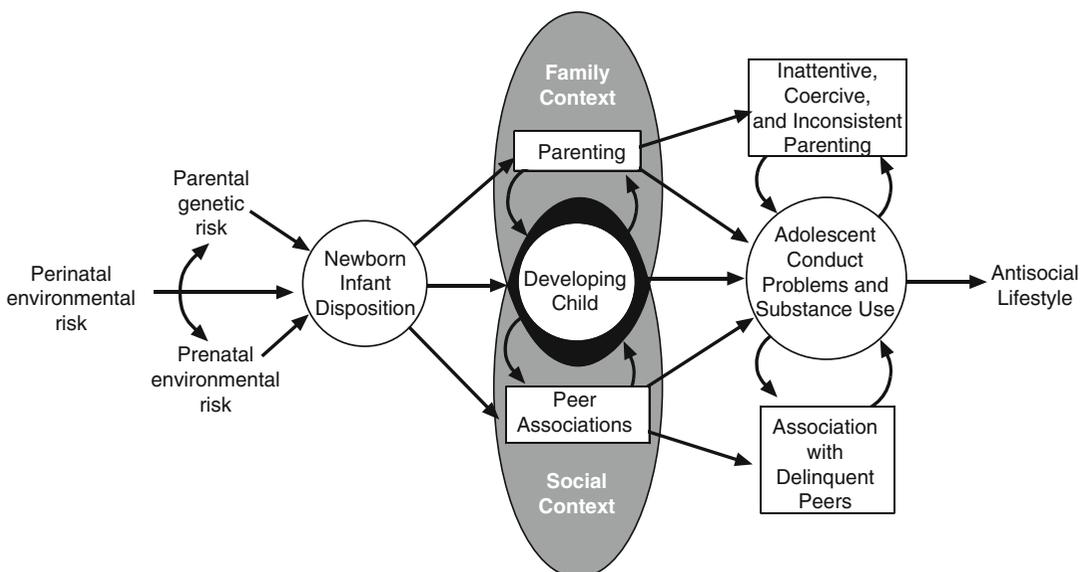


**Fig. 14.1** Interactional developmental model. Adapted by author, Deborah Capaldi (2005)

## DSM-IV and Incidence/Prevalence Rates

In the DSM-IV classification system for mental disorders (American Psychological Association, 1994; the DSM-V was still not released at the time of writing this chapter), there are two main diagnoses given for conduct problems, with the primary being Conduct Disorder (CD). The essential feature of CD is a repetitive and persistent pattern of behavior (a) in which either the basic rights of others and/or major age-appropriate societal norms are violated and (b) that significantly impairs functioning in social, academic, and/or work settings. The major behavioral domains of importance in CD are aggression toward people and/or animals, destruction of property, stealing or lying, and serious rule violations. To receive a diagnosis of CD, children must exhibit at least three conduct problem behaviors during the past year. The behaviors that are most prognostic of CD tend to be illegal throughout the USA and include both criminal and status offenses—the latter being offenses for juveniles only (e.g., minor in possession of alcohol). Diagnostic criteria for CD in the ICD-10 Classification of Mental and Behavior Disorders (World Health Organization, 1997) are similar.

In the DSM-IV, Oppositional Defiant Disorder (ODD) is a secondary diagnosis that is given to children and adolescents who exhibit hostile, defiant, and antisocial behavior at a higher rate than their peers for at least 6 months, but who do not meet criteria for CD. At least four behaviors indicative of hostility and defiance must be present—including temper tantrums, arguments with adults, blaming others for mistakes—and the symptoms must be associated with impairment in at least one area of functioning. Such behaviors can lead to serious consequences in certain settings such as the school. CD tends to develop at later ages than ODD, and ODD is thought to frequently develop into CD (Hinshaw, Lahey, & Hart, 1993). CD and ODD are typically diagnosed through clinician-administered interviews with the parent or child. However, structured interviews (e.g., DISC; Shaffer, Fisher, Dulcan, & Davies, 1996) can be administered by a trained layperson.

In order to help guide clinical decision making at the time of patient contact, the diagnostic systems used to classify disruptive behavior disorders are based on a disease model of present/absent. However, conduct problem behaviors show a continuous distribution among both boys and girls at any one point in time, and these behaviors change in prevalence, frequency, and severity with age. Therefore, to understand etiology, many studies use a continuous score of problems rather than the dichotomous diagnosis. A variety of checklists and rating scales are available for such assessment. The most widely used is the Child Behavior Checklist (CBC-L; Achenbach, 1993) with parent, teacher, and youth self-report versions. Also frequently used is the Elliott Delinquency Scale (Elliott, 1983).

In order to estimate the prevalence of conduct problem diagnoses, Lahey, Miller, Gordon, and Riley (1999) examined 39 general population studies, and they calculated the median prevalence estimate for CD as 2.0 % and the equivalent estimate for ODD as 3.2 %. In a review of six studies, the prevalence of CD was estimated at around 10.6 % of boys and 4.8 % of girls at around age 15 years and, for ODD, was around 4.8 % of boys and 2.4 % of girls at the same age (Maughan, Rowe, Messer, Goodman, & Meltzer, 2004). Of significance is that the range in prevalence estimates across the population of studies is quite wide, from 1 to 20 %. These higher estimates may not be unreasonable. General population studies may tend to underestimate the prevalence of youth meeting diagnostic criteria due to the difficulty of recruiting families that are highly likely to have youth with conduct problems (Capaldi & Eddy, 2005).

Regarding gender differences, in a recent review of six studies, the prevalence of CD at age 15 years was estimated at 10.6 % of boys and 4.8 % of girls, and of ODD was 4.8 % of boys and 2.4 % of girls (Maughan et al., 2004). Although girls are less likely to be diagnosed with a conduct disorder, the long-term consequences for girls who persistently engage in

antisocial behaviors are quite serious (Giordano, Cernkovich, & Lowery, 2004). In addition, the number of girls becoming involved in antisocial and delinquent behaviors appears to have increased in recent years (American Bar Association & National Bar Association, 2001). Despite this, boys still show considerably higher arrest rates, with girls accounting for just 24 % of arrests at the peak ages of 18 and 19 years (Uniform Crime Reports, 2009).

## Biological/Genetic Factors

Intergenerational associations have been found for conduct problems and difficult temperament, suggesting possible genetic associations (Thornberry, Hops, Conger, & Capaldi, 2003). Rhee and Waldman (2009) conducted a meta-analysis of twin and adoption studies and estimated that 41 % of the variance in conduct disorder, crime, and aggression was attributable to genetic influences, indicating a likely substantial role of genetic factors in the etiology of conduct disorders. With the advent of genomics and proteomics and the better understanding of cell physiology, there has been an explosion in the number of studies trying to associate behavior with biological factors. This had led to a broader acceptance of the idea that the etiology of conduct problems is due to complex transactional developmental processes rather than just parenting deficits or some other seemingly "simple" cause. As a result, models are becoming considerably more integrative, involving interactions of biologic and social processes, rather than these being viewed as competing explanations.

Genetic risk is thought to relate to brain activity (i.e., neural pathways) related to behavioral organization in response to environmental stimuli, as hypothesized in an important theory by Gray (1987). Gray proposed two behavioral systems, the Behavioral Activation System (BAS), which activates behaviors in response to likely rewards (e.g., food), and the Behavioral Inhibition System (BIS), which inhibits behaviors that may be punished (e.g., stealing). The dopaminergic brain system is associated with activation or

approach, whereas the noradrenergic and serotonergic systems are associated with inhibition or withdrawal (Rogeness & McClure, 1996). Aspects of temperament involving problematic functioning in the approach domain include approach when it is contraindicated (i.e., poor self or inhibitory control), high-activity level and risk taking, and more frequent and undercontrolled anger. Genes affecting dopamine function have been found to be associated with hyperactivity (Thapar, Holmes, Poulton, & Harrington, 1999). Grigorenko et al. (2010) investigated 12 genetic polymorphisms in four genes involved with dopamine functioning. The findings indicated that although no single genetic variant in any of the four genes differentiated the three groups of boys examined (i.e., incarcerated versus troubled behavior versus no conduct problems), some linear and nonlinear combinations of the variants did, indicating the importance of considering multiple rather than single markers within candidate genes, and also their additive and interactive effects when considering complex behaviors such as serious conduct problems.

Genetic influences also have been found for the noradrenergic and serotonergic systems (Kruesi et al., 1990; Rogeness et al., 1984), as well as gene–environment interaction effects on these aspects of brain function. In a pioneering study, Caspi et al. (2002) examined the association of child maltreatment and a genetic variant that results in brain monoamine oxidase levels being too low to break down some neurotransmitters (e.g., norepinephrine and serotonin) that have been found to be overactive in children who have been maltreated. An interaction between this variant and maltreatment was found to predict conduct problems.

Despite recent advances, there are considerable challenges in the work on genetic risk for psychopathology. First, the associations of candidate genes and neurotransmitter levels often do not replicate consistently and may differ by age (Hill, 2002). Further, genome-wide association studies, whereby polymorphisms across the whole genome are examined for individuals with versus without conduct disorder, do not provide linkage to the expected candidate genes

(Dick et al., 2011). However, this is not surprising when the complexity of cell metabolism is taken into account. The level of any neurotransmitter involved in driving an action is a function of the level of expression of genes for the many proteins in the transmitter biosynthesis pathway, as well as the factors such as small RNAs (i.e., within the 80 % of the genome that had been considered "junk" until recently) that control mRNA levels, and the posttranslational modifications to proteins that tightly control the pathway functioning. Further, the control of transcription and regulation of enzyme activity by posttranslational modification are modulated by input from other metabolic pathways that monitor parameters essential for cell viability and performance. Given such complexity, a gene linkage that appears on first consideration to be unrelated can profoundly affect neurotransmitter levels and thereby behavior.

Brain imaging studies are providing new insights into neural functioning associated with conduct problems. There is evidence from an fMRI study during a decision-making task, which involved making cautious versus risky decisions, that boys with conduct disorders show extensive neural hypoactivity during risky decision making, as well as both decreased activity during reward and increased activity during loss (Crowley et al., 2010). The authors argue that these neural patterns may underlie the dangerous, excessive, sustained risk taking of such boys. Using other designs, studies testing polyvagal theory show that children and adolescents with conduct problems show attenuated sympathetic nervous system responses to reward—suggesting deficiencies in approach motivation—and that this reward insensitivity is associated with inadequate vagal modulation of cardiac output, indicating additional deficiencies in emotion regulation (Beauchaine, Gatzke-Kopp, & Mead, 2007). In a review of brain imaging or fMRI studies in disruptive behavior disorders, Bellani, Garzitto, and Brambilla (2012) found the studies indicated neural dysfunction in response to affective stimuli, particularly in medial and orbitofrontal prefrontal cortex and connected subcortical structures. Raine, Lencz, Bihrle, LaCasse, and

Colletti (2000) found that adults with antisocial personality disorder showed an 11 % reduction in prefrontal gray matter, and those with the least gray matter showed the least autonomic activity during a social stressor designed to elicit shame, embarrassment, and guilt. Environmental factors may account for part of the effect.

Due in part to the considerable gender differences in the prevalence of conduct disorder, the sex hormone testosterone, which has been estimated to be 40–60 times as high in men as in women, is the most studied hormone for risk for aggression. A meta-analysis examined 45 studies of this association (Book, Starzyk, & Quinsey, 2001) and found support for a weak positive association within men or women, with the association been stronger at younger (i.e., 13–20 years) than older ages. In a review of studies in children and adolescents, Ramirez (2003) concluded that testosterone has a complex and indirect effect on aggression. Kuepper et al. (2010) found evidence of interactive effects of testosterone and serotonin on aggression in men but not in women. Given this, it may be concluded that testosterone plays some role in aggressive conduct problem behaviors, and it does make some contribution to gender differences in these types of behaviors.

In addition to genetics, the prenatal environment may also relate to individual differences in temperament and risk for conduct problems. This is usually considered in terms of the intrauterine environment, and smoking during pregnancy has been found to be predictive of conduct problems in boys, controlling for related factors (Fergusson, Woodward, & Horwood, 1998). However, it is also the case that there may be environmental effects on the eggs and sperm prior to fertilization. For example, marijuana has been found to affect male fertility by affecting sperm (Schuel et al., 2002). Thus, it is likely that environmental factors prior to birth affect brain functioning. Further, there is evidence that pollution exposure can affect conduct problems. Marcus, Fulton, and Clarke (2010) conducted a meta-analysis of studies on the association between conduct problems and lead exposure. Across the 15 studies using blood, tooth, or bone lead levels, the average

correlation was 0.15 ($p<.001$). The authors point out that the magnitude of this association is very similar to that between lead exposure and decreased IQ.

Overall, the work regarding biological risks for conduct disorders is at an exciting stage, particularly given the work on system transactions between physiological and social systems. However, the notion that there might be a simple biological explanation for problem behavior (e.g., a single problem-genetic mutation) is clearly as inaccurate as past notions that there might be a single social cause (e.g., child maltreatment).

## Individual Factors Influencing Risk and Resiliency

The earliest manifestations of individual factors that may relate to the later development of conduct problems and also affect social interactions are temperamental differences in infancy. Temperament comprises the response tendencies an infant displays early in life in the areas of attention, activity level, emotionality (positive and negative), approach, risk taking, and inhibitory control (see Rothbart, Posner, & Hershey, 1995). These tendencies not only affect the way that the infant interacts with his or her environment but also how caregivers and others interact with the infant.

Lahey and Waldman (2003) identified three dimensions of temperament that they considered to place the child at high risk for conduct problems: negative emotionality, daring or risk-taking behavior, and lack of prosocial behaviors (e.g., sharing, empathy, and kindness). Children who are highly active, persistent in attempting to reach goals (versus more easily distracted from an undesirable activity), angry in mood, irritable, and difficult to soothe are particularly at risk. Gilliom, Shaw, Beck, Schonberg, and Lukon (2002) found that anger at age 3½ years was significantly predictive of conduct problems and lack of cooperation at age 6 years, as rated by teachers.

Recently there has been considerable focus on the role that callous-unemotional (CU) traits may play in conduct disorders (Frick, 2003). These traits involve a lack of empathy, meanness or cruelty to others, and failure to feel guilty for misbehavior. Fontaine, McCrory, Boivin, Moffitt, and Viding (2011) used trajectory modeling to examine heterogeneity in CU traits across childhood and found stable-high, increasing, decreasing, and stable-low groupings. This suggests that such traits are not only completely determined by early temperament but are also affected by childhood experience. They also found that children with high or increasing levels of CU traits, and also high levels of conduct problems, showed the most negative outcomes at age 12 years, and they concluded that these children should be prioritized for targeted interventions. Pardini and Fite (2010) conducted a study of a large sample of boys to examine the incremental utility of symptoms of CD, ODD, ADHD, and CU traits for predicting psychosocial outcomes. They found that CD symptoms were the most robust predictor of future antisocial outcomes, but that ODD symptoms predicted later criminal charges and conduct problems, and CU traits were robustly associated with serious and persistent criminal behavior in boys. ADHD symptoms predicted increases in ODD and CD behaviors over time and were uniquely predictive of academic difficulties. The authors concluded that incorporating CU traits into the diagnostic criteria for DBDs may provide additional prediction regarding which boys are at risk for severe and persistent delinquency. CU traits are expected to be added to the diagnostic criteria for disruptive behavior disorders in the DSM-V.

Cognitive researchers have proposed a theory regarding individual differences in interpreting social environmental cues that attempts to identify proximal mechanisms involving biases in social information processing that may trigger aggressive behavior (Dodge, 1993). Adolescents who show higher levels of conduct problems are found both to be more likely to interpret the ambiguous behaviors of others as being aggressive and to show a more limited repertoire of responses, particularly positive solutions to specific interpersonal problems (Dodge, 1993). Such biases may be partly due to having learned to negotiate more hostile environments. Interactions

between the individual child and their social environment may be characterized or typed according to the direction of influence and degree of active involvement (Scarr & McCartney, 1983). The first type is *passive*, whereby the individual has little choice in or ability to control and, thus, may be very vulnerable to environmental effects (e.g., caregiver environment in infancy, institutional environments, and media content). The second type is *evocative* (i.e., through responses elicited from others). Thus, explosive temper tantrums and aggression by a child may partially predict harsh parental discipline (Ge et al., 1996). An individual also can affect their social environment through more active attempts at change or *manipulation* (Buss, 1987) that may be either positive (e.g., working hard to make a good impression on a new teacher) or negative (e.g., lying to parents to avoid punishment). Individuals may *react* to environmental events or evocative triggers (e.g., an aggressive response to an insult). Adolescents who are proactively aggressive (e.g., attacking another person without a reason) versus reactively aggressive (i.e., self-defense) are found to be lower in self-control, constructive behavior, and in adult adjustment than those showing reactive patterns (Pulkkinen, 1996). Another type of interactive effect described by Scarr and McCartney (1983) is through the *active* selection of environments. Youth have some latitude in selecting social environments that suit them, particularly in relation to their friends who may vary from very prosocial to highly antisocial. Friendships play a critical role in conduct problem behavior during adolescence, and involvement with delinquent peers per se is a major contributor to the continuance of conduct problems (e.g., Dishion, Spracklen, Andrews, & Patterson, 1996).

A key individual–environment interaction effect with long-term consequences for conduct problem youth is *restriction of environmental options*. Such restriction may start in early childhood through family contextual factors, including low income and residence in a deprived neighborhood. Critically for development, individual characteristics may expand or contract the range of environmental options. Developmental success may lead to expansion of options, whereas developmental failures and conduct problems lead to restriction (e.g., rejection by socially skilled peers). In adolescence, restriction may continue through such pathways as academic failure and high school dropout, which limit future education and employment opportunities. Such restrictions of positive environmental options are an unintended and pervasive consequence of conduct problem behaviors affecting future developmental trajectories in a variety of ways, including by more involvement in higher-risk environments or differential association.

A well-documented phenomenon associated with conduct problems and deviant associations at adolescence is that such adolescents take a more precocious or accelerated pathway to adulthood, taking on certain adult-like roles at an earlier age than usual—for example, initiating sexual intercourse at an earlier age than their peers (Capaldi, Crosby, & Stoolmiller, 1996), which shows a particularly strong association with arrests. Youth who initiate intercourse early also are likely to become parents at a young age. Although conduct problem youth may take on some adult roles, including employment and parenthood, at an earlier age than their peers, they may not become fully autonomous but are often financially reliant on family members. This may be especially true in the case of teenage girls who have had a child. Both conduct problems and higher-risk communities may be associated with such developmental acceleration (Burton, Obeidallah, & Allison, 1996). High school dropout is a key factor in such acceleration, because individuals who leave school are likely to enter employment earlier and leave the family-of-origin home prior to age 18 years (Capaldi & Stoolmiller, 1999).

Cooccurring and problematic levels of substance use are a key factor in differential association and continued conduct problems. Wiesner et al. (2005) found that drug use was strongly associated with remaining in a high-crime trajectory through early adulthood. Substance use may impact conduct problems through multiple means, including relationships (e.g., rejection by low-using peers and dating partners) and detrimental financial impacts (e.g., job loss).

## Family Process Factors Influencing Risk and Resiliency

The most influential theory regarding family influences on conduct problems is social learning theory. Whereas only the highly unusual parent would purposely socialize their child toward conduct problems and criminal behavior, Patterson (1982) has detailed the mechanisms by which parents may *inadvertently* contribute to their child's development in these directions. Central to Patterson's Coercion Model is the role of poor discipline practices, including patterns of alternating inattention to children's behavior and ineffective nattering (e.g., complaining and lecturing) that are punctuated periodically by angry explosions and overly harsh discipline. In particular, parents may positively reinforce aggression by initially refusing a child's request (e.g., for a treat or money) but then submit if the child becomes negative or aggressive. Parents also may negatively reinforce noncompliance and aggression by making a request (e.g., that the child switch off the television and go to bed) but then failing to follow through on the request if the child responds in an aversive manner. This particular pattern of parent–child behavior seems particularly problematic. Through family processes such as these, children may learn (and again, inadvertently) to get their way through persistent noncompliance and aggression. At the extreme of the continuum of poor parental discipline is physically abusive behavior, which is also associated with conduct problems, and patterns of physically abusive behavior have been shown to occur across generations within families (Pears & Capaldi, 2001).

One critical set of parenting behaviors that underlie positive parental discipline practices come under the rubric of parental monitoring. We have posited that the foundation of parental monitoring is parental awareness of all aspects of their child's life and development (e.g., activities, friendships, and progress in school; Capaldi, 2003). This awareness is based on the parent placing a high priority on the welfare of the youth and involves regular and positive communication.

Parents must track the indicators of normal development, watch for signals of potential problems, and adjust their parenting behaviors accordingly. Dishion and McMahon (1998) argue that parental monitoring plays an important role from infancy into young adulthood and should be developmentally as well as contextually appropriate. They propose a broad definition including both *structuring* the child or adolescent's home, school, and community environments and *tracking* the child's behavior in these environments.

Racz and McMahon (2011) reviewed 47 studies reflecting recent progress in understanding the role of parental monitoring. They concluded that these studies provided strong support of the association of parental knowledge of their child/ adolescent's behavior and conduct problems. Given the importance to parental knowledge of good parent–child communication, they point out that the current view in the field is that parental monitoring processes will only be effective in the context of a positive and supportive parent–child relationship.

Monitoring, however, is just one of several behaviors that are required for effective parenting. As discussed in Capaldi, Chamberlain, and Patterson (1997), based on the research to date, effective parenting involves (a) accurately tracking and classifying problem behaviors; (b) ignoring trivial coercive events, yet intervening before a problem escalates; (c) structuring situations and redirecting toward positive behaviors; (d) consistent use of a mild-to-moderate consequence when punishment is necessary (e.g., time out and privilege loss); (e) following up on behavioral change; and (f) encouraging positive behaviors. Parents of children with higher levels of conduct problems tend to have difficulty with each of these skills.

## Social and Community Factors Influencing Risk and Resiliency

One of the most influential social and community factors related to conduct problems is differential association, involving association with deviant rather than with prosocial friends.

Adolescents are typically arrested in pairs or groups (Aultman, 1980). Dishion and colleagues (e.g., Dishion, Spracklen et al., 1996) examined the processes by which conduct problems can form the basis for adolescent friendships and labeled the reinforcement of rule-breaking talk that was observed to occur in some dyads as delinquency training. Rule-breaking talk was more frequent for dyads high in antisocial behavior and was associated with positive affective exchanges and laughter. In contrast, prosocial boys tended to laugh mostly in normative discussions. This process of delinquency training in adolescence predicted escalations in serious delinquent behavior (Dishion, Andrews, Kavanagh, & Soberman, 1996). Interviews with delinquent adolescent girls indicate that they are also involved in friendship networks that encourage their delinquent behavior (Giordano & Cernkovich, 1997). What appears to be particularly salient in these networks is the perception of peer approval for law violations. In short, adolescence is a critical period for the influence of peers, with respect to establishing norms, values, and behaviors that account for subsequent individual differences in conduct problem behaviors.

There is a considerable body of evidence indicating associations between community factors and child well-being and problem behaviors (Leventhal & Brooks-Gunn, 2000). For example, Wichstrom, Skogen, and Oia (1996) examined the association of urbanization and conduct problems and found that rates of conduct problems were higher only at high levels of urbanization. The finding was not explained by a variety of control or neighborhood factors but was associated with involvement with delinquent peers and with drug use.

Pettit, Bates, Dodge, and Meece (1999) found that unsupervised peer contact predicted worsening conduct problems among adolescents who were monitored less by their parents and who lived in neighborhoods perceived by their parents to be unsafe. Beyers, Bates, Pettit, and Dodge (2003) found that decreases in externalizing levels associated with more parental monitoring were significantly more pronounced when the family lives in a neighborhood with higher-residential instability.

There has been strong interest in the extent to which higher-risk neighborhood contexts may be associated with conduct problems. Wikstrom and Loeber (2000) found that adolescents with high scores on risk characteristics commit serious criminal offenses at a similar rate, regardless of the socioeconomic context of their neighborhood, but youth with higher levels of protective factors were directly and negatively impacted by neighborhood context. In a study that included White, Black, and Latino populations in two major cities, Elliott et al. (1996) found that higher levels of neighborhood disadvantage were associated with lower levels of informal control, including lower-neighbor involvement. Informal control was positively related to lower levels of conduct problems for the African-American populations in Chicago and, thus, a protective factor. Informal networks of friends and family members within neighborhoods were related to lower conduct problems in diverse ethnic populations in Denver.

In terms of more extreme conduct problems, although youth violence occurs in all communities, the prevalence varies, and the concentration is highest in inner cities (Tolan, Gorman-Smith, & Henry, 2003). The social ecology of inner-city neighborhoods is such that they may present a qualitatively different context for families and youth, whereby parental behaviors that promote positive youth adjustment in lower-risk communities may not work (Tolan et al., 2003). There is a higher density of delinquent peers in high-crime neighborhoods and fewer school and community resources. Tolan et al. found that there was a perceived lack of support, a lower sense of belonging to the neighborhood, and a lower involvement in the community. Violence in the peer groups, particularly delinquent-gang memberships, were particularly high-risk factors, and the most effective parents worked to prevent gang membership.

Overall, it appears that neighborhood risk factors are more highly associated with conduct problems in boys than girls. This may be because boys are more likely to participate in

neighborhood activities and especially to spend more time in unsupervised activities with peers or join gangs. Thus, in neighborhoods with poor resources and higher densities of delinquent peers, they may be at particular risk.

## Evidence-Based Treatment Interventions for Conduct Disorder and Oppositional Defiant Disorder

Treatment interventions target youth who are already exhibiting conduct problems at problematic levels. The parents may seek help for their child or the youth may be identified at school, by police, or by service agencies as in need of intervention to improve their behavior and increase their chance of future successful adjustment. These programs may be delivered in outpatient or inpatient settings. Most studies have examined outcomes for outpatient programs.

### What Works

There are two classes of evidence-based interventions for the treatment of CD and ODD that meet the "evidence-based" criterion of positive impacts in three or more high quality studies (e.g., randomized controlled trials), namely, Parent Management Training (PMT) and child social skills training (CSST) (see Eddy, 2001; Taylor & Biglan, 1998). Over the past 50 years, a variety of PMT and CSST programs have been developed and tested. In a recent analysis of the results of 26 meta-analyses that encompassed almost 2,000 treatment outcome studies focused on conduct problems (Litschge, Vaughn, & McCrea, 2010), these interventions were grouped together as "behavioral/cognitive behavioral therapies", and found to have an average effect size of 0.49. This value was similar to the average effect size for multimodal therapies (0.47), many of which include both PMT and CSST components. The next closest class of interventions in terms of positive effects was family therapies, with an effect size of 0.41. Many of the most prominent family therapy interventions are heavily

influenced by cognitive behavioral therapies, in particular PMT.

The basic tenets and techniques of PMT were developed by behavior therapists during the 1960s and refined during the 1970s (e.g., Patterson, Reid, Jones, & Conger, 1975). Via group or individual formats, PMT therapists coach parents around techniques designed to discourage child problem behaviors and encourage child prosocial behaviors. Most PMT programs teach parents skills in the area of positive reinforcement, nonviolent and consistent discipline, effective monitoring and supervision, and constructive family problem solving. Interactive exercises, role plays, and skills practice homework are commonly used. In a meta-analysis of the 26 studies that have compared a PMT condition to a comparison group condition, the average effect size for child antisocial outcomes immediately postintervention was $d = 0.80$ (Serketich & Dumas, 1996; see also Brestan & Eyberg, 1998). Only a few studies that include PMT have been published since that time, including studies of the impact of multimodal interventions. Insufficient data are available to calculate effect sizes for the long-term impact of PMT.

CSST was developed during the 1970s (Shure, Spivack, & Gordon, 1972). Youth are taught cognitive and behavioral techniques and strategies that are useful in solving interpersonal problems. Most programs teach some combination of problem-solving skills, anger-control skills, social skills, coping skills, and assertive skills. CSST can be delivered via group or individual formats, although most programs require group settings. Like PMT, CSST utilizes a variety of interactive exercises, such as skills practice within small and large groups and dyadic role plays. In a meta-analysis of 84 studies that compared a child social skills training condition to a comparison-group condition, the average effect size for antisocial outcomes immediately post intervention was 0.38 and at follow-up was 0.28 (Losel & Beelmann, 2003). Only 20 % of studies included a follow-up, and 90 % of these studies followed children for less than 1-year postintervention.

Only a few cognitive behavioral programs have been found to positively impact child behavior

in three of more high quality studies. One of the best known of these is *The Incredible Years Series* (e.g., Webster-Stratton, 1990). Designed to treat and/or reduce conduct problems in young children ages 2–8 years, the program includes separate but linked components for PMT, child social skills training, and teacher behavior management training. The Basic Program teaches parents interactive play and reinforcement skills, nonviolent discipline techniques, logical and natural consequences, and problem-solving strategies. The Advance Curriculum addresses family risk factors—including depression, marital discord, poor coping skills, poor anger management, and lack of support. The School Curriculum assists parents to further their young child's social and academic competence. In addition, a complimentary Teacher Curriculum is designed to strengthen teacher's classroom management skills, and includes encouragement and motivational techniques, promotion of social skills and cooperation with peers and teachers, anger management and problem-solving, and reducing classroom aggression. Finally, the Children's Curriculum includes developing recognition of emotions, empathy with others, peer relations, problem solving and anger management, following school rules, and school success. The Webster-Stratton parent-focused interventions have been shown to reduce conduct problems and improve parenting interactions for approximately two-thirds of families whose children have conduct disorders and who have been treated in clinics, and improvements have been sustained for up to 3 years (e.g., Webster-Stratton, 1990). The teacher program has also been shown to improve children's classroom behavior and the teacher's classroom management skills (e.g., Webster-Stratton, Reid, & Hammond, 2000). The child program was shown to improve social and peer group skills, as well as to reduce child behavior problems (e.g., Webster-Stratton & Hammond, 1997).

Targeting older ages, *Multisystemic Therapy* (MST; Henggeler, 1990), an individualized case management program that incorporates many aspects of PMT and CSST, was designed for youth with serious behavior disorders who are at risk for out-of-home placement. MST attempts to intervene with the multiple factors that can contribute to antisocial behavior at the individual, family, and broader social levels, including peer, school, and neighborhood factors. Therapists identify strengths in each youth's social network and capitalize on these to promote positive change. By helping both parents and youth to manage their lives more effectively, the need for out-of-home placement may be eliminated. Treatment is designed in collaboration with the family, and therapists have low caseloads and are available around the clock. The average duration of treatment is 4 months; during this time, therapists work very closely (e.g., multiple times per week in the home and community) with youth and families. In a variety of studies, reductions of 25–70 % in long-term rearrest rates and of 47–64 % in out-of-home placements have been achieved, and positive improvements in youth and family functioning have been observed for several years following intervention (e.g., Borduin, Henggeler, Blaske, & Stein, 1990; Henggeler, Cunningham, Pickrel, Schoenwald, & Brondino, 1996; Henggeler, Melton, & Smith, 1992; Henggeler, Melton, Smith, Schoenwald, & Hanley, 1993). Further, and importantly, the costs associated with MST are less than those for institutional placement (e.g., Henggeler, Mihalic, Rone, Thomas, & Timmons-Mitchell, 1998).

## What Might Work

Whereas inpatient, residential treatment is commonly mandated for delinquent youth, there are fewer studies of these types of programs. Most incorporate elements of PMT and CSST. In Multidimensional Treatment Foster Care (MTFC; Chamberlain & Reid, 1998), youth are placed with foster parents who have received extensive training in PMT skills and who receive ongoing and intensive support. An individual treatment plan is created for each youth and his or her family. A typical plan includes PMT for the natural parents, an individual therapist for the youth, academic goals, and plans to minimize contact between the youth and any delinquent or otherwise deviant peers. Removing the youth from the

contexts that supported conduct problem behaviors, placing them in a specialized setting designed to reduce such behaviors, and providing the natural parents respite and training in how to better manage the youth once he or she is at home can produce the leverage needed to change very serious behavior patterns. Study outcomes indicate that MTFC male youth had about 50 % fewer criminal referrals than a control group of youth placed in residential group-care programs, were less likely to be incarcerated, and returned to live with relatives more often than youth placed in more traditional care (Chamberlain & Reid, 1998). Longer-term outcomes include significant reductions in violent behavior (Eddy, Whaley, & Chamberlain, 2004). Eddy and Chamberlain (2000) found that reductions in arrest rates for the treatment group were mediated by contextual changes related to lower conduct problems; namely, increases in structured discipline and supervision, relationships with a prosocial adult mentor, and less engagement with antisocial peers. Similar positive impacts have been found for MTFC with girls involved in the juvenile justice system (see Leve, Chamberlain, Smith, & Harold, 2011).

PMT and CSST also have been adapted specifically for use in the inpatient hospital setting by Kazdin and colleagues (Kazdin, Siegel, & Bass, 1992). In this iteration, CSST is delivered during individual therapy sessions. Between sessions, youth are assigned specific tasks that help them apply the interpersonal skills that they learn and practice during sessions. PMT is also delivered during individual family therapy sessions. In a series of studies examining various combinations of these versions of PMT and CSST, positive effects on child antisocial behavior have been found both immediately following treatment and at 1-year follow-up (e.g., Kazdin et al., 1992; Kazdin, Bass, Siegel, & Thomas, 1989; Kazdin, Esveldt-Dawson, French, & Unis, 1987a, 1987b).

## What Does Not Work

Defining harm in reference to interventions for antisocial behavior is somewhat different than

with other emotional or behavioral disorders. If youth are displaying antisocial behaviors, by definition they are harming those around them through acts against person and/or property. Thus, delivering an intervention to such individuals that is ineffective, particularly when an intervention with evidence of effectiveness exists, could be considered contributing to harm. There are a variety of interventions that are used with antisocial youth that fall into this category of harm in the sense that they do not seem to make much difference in subsequent youth behavior.

In a meta-analysis of treatments for delinquency, Lipsey (1992) found that among programs delivered by juvenile justice sponsors, deterrence programs (including shock incarceration and "Scared Straight" programs) and vocational programs showed negative outcomes compared to control groups. For example, in Scared Straight programs, at-risk or delinquent youth are brought into prisons and given frank talks by inmates about the realities of prison life in the hope that the youth will avoid a life of crime. A second meta-analysis of randomized controlled studies on these types of programs also found that, on average, the interventions were associated with an increase in the criminal behavior of youth (Petrosino, Turpin-Petrosino, & Buehler, 2003). Among programs administered by nonjuvenile justice sponsors, Lipsey (1992) found that individual counseling and employment/vocational programs also had negative effects, but of a very small magnitude.

In the Litschge et al. (2010) review of meta-analyses of treatments for children and youth with conduct problems, almost all of the therapies examined had at least one meta-analysis that found average effect sizes close to or less than 0, indicating either no effect, or an iatrogenic effect, of therapy. For example, the lowest average effect size found for behavioral/cognitive behavioral therapies was 0.04, for family therapies was −0.15, and for multimodal therapies was −0.24. Most of the effects that produced these averages were found under the best of conditions, when therapists are trained and supported and intervention delivery meets high standards of fidelity to

the treatment model of interest. In contrast, there is limited research available on how "evidence-based" interventions actually perform under "real-world" conditions (e.g., Shadish, Matt, Navarro, & Phillips, 2000). Thus, PMT and CSST and the various programs that use one or both of these approaches may not work under certain conditions.

Probably the most discussed area in terms of what "does not work" concerns group-based interventions for children with conduct problems. Some researchers think the evidence is compelling that bringing children with conduct problems together into groups for treatment can cause harm (e.g., Dishion, McCord, & Poulin, 1999). Other researchers are not so sure (e.g., Weiss et al., 2005). Much of the recent focus in this debate has centered on preventive interventions; thus, further discussion on this topic is provided in the prevention section below.

## Psychopharmacological Interventions

A variety of medications have been examined as *adjuncts* to treatment for CD and ODD. In cases of severe aggressive behavior, for example, Lithium or one of the neuroleptics (e.g., Haloperidol) may be prescribed (Campbell, Gonzalez, & Silva, 1992). However, even in extreme cases, medication is not recommended as either the sole or the primary treatment for these disorders. The most common medication that a youth with CD or ODD may receive is one of the stimulants, such as Methylphenidate (Wilens & Biederman, 1992). These medications are prescribed to address symptoms of Attention Deficit Hyperactivity Disorder (ADHD), which commonly cooccurs with CD or ODD (e.g., Barkley, 1990), but they may impact certain conduct problem behaviors such as noncompliance and aggression.

There is some evidence that Lithium can be beneficial for the short-term treatment of severe aggression (Campbell et al., 1984). The neuroleptics can be effective in this way as well but have more numerous and serious side effects (Whitaker & Rao, 1992). Approximately 50–75 % of patients accurately diagnosed with ADHD respond in at least some positive ways (e.g., increases in attention, decreases in impulsivity, and decreases in verbal and/or physical aggression) to one of the stimulants (Greenhill, 1992). These effects are only seen for a limited period of time after ingestion (i.e., usually for several hours). Common side effects of stimulant treatment include insomnia, decreased appetite, stomachaches, headaches, and irritability (see Eddy, 2001).

## The Prevention of Conduct Disorder and Oppositional Defiant Disorder

### What Works

Programs to prevent conduct problems are designed either to prevent the onset of clinical levels of conduct problems or to lower the current level of conduct problems. As in the treatment literature, the classes of programs that appear to be most effective are cognitive behavioral in nature and often include elements of PMT and CSST (e.g., Durlak & Wells, 1998; Tremblay, LeMarquand, & Vitaro, 1999). Probably the largest body of literature on prevention programs relevant to the prevention of ODD and CD are social and emotional learning (SEL) programs, which include CSST interventions. In a meta-analysis of 213 school-based studies involving almost 300,000 students, the average effect size for SEL programs on conduct problems was 0.22 (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). In a meta-analysis of 45 studies of programs designed specifically to prevent ODD and/or CD (Grove, Evans, Pastor, & Mack, 2008), the average effect size at least 6 months after the completion of intervention was 0.26 for property violations, 0.16 for oppositional behavior, and 0.15 for aggression. Unfortunately, few prevention programs have been rigorously studied more than once, at least in reference to outcomes on antisocial behavior; thus, there are no specific programs that can be classified under "what works."

## What Might Work

Prevention programs fall into three general categories: universal interventions, which target the general population of children; selected interventions, which target individuals who belong to a subgroup of the population that is considered at risk for the development of ODD and/or CD; and indicated interventions, which target children who have a risk factor or condition that indicates that they are at high risk for the development of ODD and/or CD (see Mrazek & Haggerty, 1994). Several of the preventive intervention programs that have received at least some empirical support are multimodal in design, targeting multiple risk factors through multiple interventions.

*Universal Interventions*: To date, most research on universal interventions for ODD and CD has focused on elementary public schools as the setting for program delivery. Three types of programs appear most promising: classroom behavior management programs; CSST programs; and multimodal programs, which often combine various aspects of CSST and PMT with environmental interventions. Classroom behavior management programs provide encouragement for desired behaviors and discouragement for undesired behaviors, usually through a combination of individual and group contingencies. In a randomized trial, first graders who received the classroom-based *Good Behavior Game* (GBG) were rated as less aggressive by teachers and peers postintervention (Dolan et al., 1993); by middle school, however, only the most aggressive first grade boys were impacted by the program (Kellam, Rebok, Mayer, Ialongo, & Kalodner, 1994). CSST prevention programs are similar to those discussed earlier and are delivered in a group format. The CSST program, *Promoting Alternative Thinking Strategies* (PATHS), has been shown to decrease conduct problem behavior for up to several years following intervention (Greenberg & Kusché, 1998; Greenberg, Kusché, Cook, & Quamma, 1995). Multimodal programs have also been shown to impact conduct problems. In a randomized controlled study, the *Linking the Interests of Families and Teachers* (LIFT) program, which combined PMT, CSST, and the GBG, decreased

child aggressive behavior in multiple settings immediately following the intervention, particularly for the most aggressive children, decreased overall rates of juvenile crime for at least the next 3 years, and impacted substance use through high school (e.g., DeGarmo, Eddy, Reid, & Fetrow, 2009; Eddy, Reid, Stoolmiller, & Fetrow, 2003; Reid, Eddy, Fetrow, & Stoolmiller, 1999; Stoolmiller, Eddy, & Reid, 2000).

*Selected Interventions*: Two promising selected interventions for CD and ODD that have frequently appeared on best practices lists are the *Nurse Family Partnership* (NFP) and the *Adolescent Transitions Program* (ATP). The NFP was designed to reduce very early risk factors by targeting mother's health-risking behavior during pregnancy, problematic maternal adjustment, and child abuse and neglect. Nurse home visitors work to develop a supportive relationship with low-income, first-time mothers. The program emphasizes education, mutual goal setting, and the development of the mother's problem-solving skills and self-efficacy, as well as preventing future unintended pregnancies and promoting employment for the mother. Adolescents whose mothers received nurse home visits were 60 % less likely to have run away, 55 % less likely to have been arrested, and 80 % less likely to have been convicted of a crime than adolescents whose mothers did not receive visits (Olds, Hill, Mihalic, & O'Brien, 1998). In contrast, the ATP targets at-risk early adolescents through community-based PMT groups. In a controlled study, youth whose parents received PMT were rated by teachers as displaying less conduct problems (Dishion & Andrews, 1995). However, the peer-focused group-based condition in ATP was found to result in problematic outcomes for youth (see discussion below).

*Indicated Interventions*: Promising indicated interventions, such as universal interventions, have focused on the public elementary school as the base for program delivery. Two examples are the *Montreal Prevention Project* (MPP) and *Fast Track*. In the MPP, children were identified in kindergarten as at risk for ODD and CD. PMT and CSST programs were provided during first

and second grade. In a controlled study, children in the intervention group were less likely to report delinquent behavior during middle school than children in the control group (Tremblay, Pagani-Kurtz, Masse, Vitaro, & Pihl, 1995). Fast Track targets at-risk kindergarten children and combines universal, selected, and indicated components. In contrast to all of the other programs mentioned in this chapter, intervention continues throughout the school years. The program includes CSST, PMT, academic tutoring, mentoring, and a variety of other components. After the first 3 years of intervention in a controlled trial of Fast Track, children in the intervention group displayed fewer conduct problems than children in the control group (Conduct Problems Prevention Research Group, 2002).

## What Does Not Work

As noted above, there is ongoing controversy regarding the possible negative effects of interventions involving groups of youth (Arnold & Hughes, 1999; Dishion et al., 1999; Weiss et al., 2005). Group approaches to prevention and treatment are popular in both community and residential settings, in part, because they seem to capitalize on the economy of scale and, in part, because youth usually prefer to be with their age mates. Group approaches are used with youth with conduct problems both in community (e.g., in the schools) and residential settings, including group homes and incarceration facilities. However, CD and ODD are fostered within social relationships, particularly within groups of same-age peers. Thus, a potential side effect of group treatments, particularly with adolescent youth who have CD, is that youth are introduced to other youth with antisocial behavior problems, thereby enlarging their friendship networks and providing them with new opportunities for delinquent peer influences and delinquency training.

Lipsey (1992) reported positive, albeit small-to-moderate intervention effects from group counseling. However, Dishion et al. (1999) summarized evidence that group interventions can result in iatrogenic effects, with youth who received group-based interventions showing *poorer* outcomes than youth who received no intervention at all. They argued that it is hard to tell how frequently such negative effects may occur, as studies with negative effects may not be submitted for publication as frequently as those with positive effects. Probably the best-known example of this is the randomized controlled Cambridge Somerville Study, which examined the impact of a mentoring program during adolescence on participant outcomes during middle age. At-risk youth in the intervention met regularly with a mentor and also participated in a variety of activities, including group-based programs such as summer camps. Initially, the program had no impact on youth, but over the long run, participants in the intervention group had more adverse outcomes than participants in the control group (McCord, 1978, 1981). Dishion et al. (1999) posited that young high-risk adolescents may be most at risk in homogeneous group treatments, whereas older and younger children may be less at risk, and heterogeneous groups including prosocial youth may be more efficacious (Feldman & Caplinger, 1983). At a minimum it seems that in practice, group approaches should be approached cautiously; in future research, group approaches should be compared to alternative approaches and data should be collected regarding potential harmful effects, such as contacts between the antisocial youth outside of the group setting and participation in rule-breaking activities together.

## Recommended Best Practice

In the past several decades, much has been learned about the development of conduct problems and related behaviors, particularly from long-term longitudinal studies that began to follow participants during childhood and traced social environmental factors related to such development into adulthood. The field has moved from relatively simplistic measurement of risk factors to the development of explanatory lifespan models that involve multiple levels of influence and the individual child's transactions with the overlapping

social influences that make up their world. More recent work that also examines the contribution of parental genetic risk using molecular genetic approaches and perinatal as well as prenatal environmental risk has already lead to more comprehensive etiological models of biological and social processes in the development of problem behaviors. As research progresses, these models will improve in their explanatory power. To date, findings suggest that there are probably multiple routes to elevated levels of conduct problem behaviors. Findings also suggest that although the prevalence of conduct problem behaviors is lower among girls than boys, the developmental factors related to the emergence of such problems may be relatively similar across genders, although girls appear to have a later onset of more serious conduct problem behaviors (Keenan, Loeber, & Green, 1999). Once underway, however, these behaviors can be reduced in either sex through the leveraging of social environments via interpersonal relationships.

A key feature of effective prevention and treatment is inclusion of the adults who are involved in the child's socialization from day to day, particularly caregivers in parental roles and teachers. Improving the social-interactional and child management skills of such adults has been shown to improve children's conduct problem behavior. Early intervention with families in high-risk circumstances, such as through nurse home visitors, is particularly helpful in preventing destructive cycles of coercive interactions from developing between caregivers and children and in improving other risk factors such as the prenatal environment. Effective early intervention has the benefit of preventing the development of negative behaviors in childhood before they have detrimental consequences, such as rejection by prosocial peers and adults. Further, it is much more difficult for a parent or other caregiver to change the behavior of an older child who is noncompliant and out of control, especially as that adult may already have lost hope that improvement is possible. Thus, treatments for conduct problems that *only* focus on the child are generally less useful, as they do little to manipulate environmental factors that

have powerful effects in evoking and reacting to the child's problem behavior. Because such children generally have low-social skills and are more impulsive, they need adult coaching in order to make substantive changes in behavior. For school-aged children, universal interventions that affect the school environment, including peer behavior, are also very beneficial in reducing problem behaviors by reducing support for such behaviors in the school social system, including programs that reduce bullying in school (Olweus, 1993).

Despite encouraging findings regarding prevention and treatment of conduct problems through interventions affecting the social environment, there are relatively few US programs that have outcome data in multiple randomized trials or trials conducted by more than one research group. This leads to the concern that more replications of efficacy are needed for these programs. On a positive note, enough studies have now been conducted with relatively similar approaches that we can be relatively confident of the efficacy of various classes of programs such as PMT and CSST. However, as discussed by Eddy (2005), effectiveness trials for such programs generally have yet to be conducted. Efficacy trials are generally conducted under controlled conditions with a high degree of supervision and monitoring of the fidelity of the intervention, whereas effectiveness trials for such programs are on a larger scale and usually in less ideal delivery settings with less supervision and tracking. Effectiveness studies are urgently needed so that interventions that have been shown to be helpful may be made more widely available.

A major concern is that interventions and treatment for different populations, including girls and particularly ethnic groups, need further development and testing. Although many studies have included girls and ethnically diverse samples, differential effectiveness across groups needs further testing, and further adaptation of programs to account for potentially important cultural factors is required.

It is encouraging that much progress has been made on both developmental models of conduct problems that reflect the true complexity of the

world of the developing child and also in testing interventions spanning universal to indicated to clinical (i.e., treatment) levels and from prenatal to adolescent developmental stages. Much has been learned about components of interventions that can improve conduct problem behaviors and about features of programs that may actually make them worse. Future work on examining the interactional effects of biological and social risk in development, on interventions for diverse groups, and on tests of effectiveness should further advance our ability to prevent the development of conduct that can have long-term destructive effects for affected youth, their loved ones, and the societies within which they live.

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# Obesity

Daniel P. Miller and Jeanne Brooks-Gunn

## Introduction

### Overview

Child and adolescent obesity is one of the major public health problems of the modern era. Although increases in obesity rates among young people have slowed in recent years, about a third of American adolescents are overweight or obese (Ogden, Carroll, Kit, & Flegal, 2012), and obesity has quickly developed into a global epidemic (Lobstein, Baur, & Uauy, 2004). Recent estimates indicate that excess direct medical spending related to obesity in children may be as high as $14.3 billion annually (Hammond & Levine, 2010), and obesity among current adolescents may result in nearly $45 billion in additional costs between the years 2020 and 2050 (Lightwood et al., 2009).

Although obesity at any point in childhood is troublesome, obesity in adolescence is of

particular concern. Obese adolescents are at risk for a number of serious health outcomes including type 2 diabetes, impaired coronary functioning, sleep problems, asthma, hypertension, and social-emotional problems among others (American Diabetes Association, 2000; Daniels, 2006; Lobstein et al., 2004), many of which were all but unheard of a generation ago. Most important, obesity in adolescence is more predictive of obesity in adulthood than at other ages (Guo & Chumlea, 1999; Wang, Chen, Lee, & Lowry, 2008), putting young people at risk for profound negative adult health outcomes and premature mortality. Projections about the future of the epidemic in the USA are dire: one set of estimates suggests that by 2030 over 30 % of adolescents aged 12–19 years will be obese alone, and the epidemic will account for between 16 and 18 % of US health care costs (inclusive of adult-related obesity expenditures) (Wang, Beydoun, Liang, Caballero, & Kumanyika, 2008).

### Definitions

A recent panel of experts (Barlow & the Expert Committee, 2007) confirmed the use of body mass index (BMI)—measured as height in meters divided by weight in kilograms-squared—as the preferred way to identify overweight and obesity in children and adolescents aged 2–19 in both clinical and research settings. BMI is the

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preferred means to assess obesity both because of the ease with which height and weight can be collected by trained observers or clinicians and because of its strong correlation with other direct measures of body fat (Krebs et al., 2007). For adults, overweight is defined as a BMI greater than or equal to 25 but less than 30, and obesity is defined as a BMI greater than or equal to 30.

However, BMI varies by gender as well as by age in young people, typically dipping between ages 2–6 before hitting a nadir and then increasing steadily through young adulthood. Thus, children and adolescents are designated as overweight or obese by comparison to their peers of the same age and gender. Children are said to be overweight if BMI is greater than or equal to the 85th percentile but less than the 95th percentile for children of the same age and gender or obese if BMI is greater than or equal to the 95th percentile. These percentiles are based on growth charts developed by the Centers for Disease Control and Prevention and derived from normed and representative data from successive National Health and Nutrition Examination Surveys (NHANES) (Kuczmarski et al., 2002). An alternative set of guidelines, developed by the International Obesity Task Force (IOTF) and based on data from a number of different countries, establishes cutoffs for overweight and obesity that intersect with the adult cutoffs (Cole, Bellizzi, Flegal, & Dietz, 2000; Ogden et al., 2012); the IOTF guidelines are often used in international studies of obesity in adolescence.

## Prevalence

The most recent nationally representative data from 2009 to 2010 indicate that 14.6 and 18 % of 6–11-year olds are overweight and obese, while 15.2% and 18.4 % of 12–19-year olds are overweight and obese, respectively (Ogden et al., 2012). Although considerably high, there has been little change in rates of overweight or obesity among adolescents in the past decade (Ogden et al., 2012). Table 15.1 presents data on the prevalence of obesity by child age and gender and by race, ethnicity and household income.

Table 15.1 identifies some important characteristics of the obesity epidemic. For one, obesity is not spread evenly among adolescents of different races or ethnicities. For instance, in 2007–2010, only 17.1 % of not-Hispanic white adolescent boys aged 12–19 were obese, compared to 21.2 % of not-Hispanic black and 27.9 % of Mexican adolescent boys. In general, research has confirmed that obesity tends to be lowest among white, not-Hispanic and Asian American children and highest among American Indians (Wang, 2011). A limited amount of research has investigated these disparities (Kimbro, Brooks-Gunn, & McLanahan, 2007), and their causes are not well understood. Also of note in Table 15.1 are the uneven increases in obesity rates over time for minority children, a finding replicated in other research (Strauss & Pollack, 2001; Wang, 2011).

For both children aged 6–11 and adolescents 12–19 years old in 2007–2010, Table 15.1 indicates a negative and monotonic relationship between income (measured as percent of the poverty level) and obesity, such that children in the highest income families are least likely to be obese. However, in other years, this relationship is not as clearly defined. For instance, in 1988–1994, there was little difference in obesity rates by income for children aged 6–11. In general, the relationship between income (or socioeconomic status) and adolescent obesity is a complicated one and dependent on gender, race, and ethnicity (Kumanyika & Grier, 2006), which we describe more fully below.

## Biological/Genetic Factors

A small number of relatively rare conditions such as Prader–Willi syndrome predispose adolescents and other children to obesity (Lobstein et al., 2004). However, these disorders account for only a fraction of the total number of adolescent obesity cases (Lobstein et al., 2004) and have not become common enough in recent years to account for the large-scale increases in adolescent obesity since 1980. Likewise, monogenic obesity (obesity due to single-gene mutation) is

**Table 15.1** Prevalence of obesity by age and selected characteristics, 1963–2010

| | 1963–1965 1966–1970[a] | 1971–1974 | 1976–1980[c] | 1988–1994 | 1999–2002 | 2003–2006 | 2007–2010 |
|---|---|---|---|---|---|---|---|
| **6–11 years** | | | | | | | |
| Both sexes | 4.2 | 4.0 | 6.5 | 11.3 | 15.9 | 17.0 | 18.8 |
| Boys | 4.0 | 4.3[b] | 6.6 | 11.6 | 16.9 | 18.0 | 20.7 |
|   Not Hispanic or Latino | | | | | | | |
|     White only | – | – | 6.1 | 10.7 | 14.0 | 15.5 | 18.6 |
|     Black or African American only | – | – | 6.8 | 12.3 | 17.0 | 18.6 | 23.3 |
|   Mexican | – | – | 13.3 | 17.5 | 26.5 | 27.5 | 24.3 |
| Girls | 4.5 | 3.6[b] | 6.4 | 11.0 | 14.7 | 15.8 | 16.9 |
|   Not Hispanic or Latina | | | | | | | |
|     White only | – | – | 5.2 | 9.8[b] | 13.1 | 14.4 | 14.0 |
|     Black or African Americanonly | – | – | 11.2 | 17.0 | 22.8 | 24.0 | 24.5 |
|   Mexican | – | – | 9.8 | 15.3 | 17.1 | 19.7 | 22.4 |
| Percent of poverty level | | | | | | | |
|   Below 100 % | – | – | – | 11.4 | 19.1 | 22.0 | 22.2 |
|   100–199 % | – | – | – | 11.1 | 16.4 | 19.2 | 20.7 |
|   200–399 % | – | – | – | 11.7 | 15.3 | 16.7 | 18.9 |
|   400 % or more | – | – | – | [b] | 12.9 | 9.2 | 12.5[b] |
| **12–19 years** | | | | | | | |
| Both sexes | 4.6 | 6.1 | 5.0 | 10.5 | 16.0 | 17.6 | 18.2 |
| Boys | 4.5 | 6.1 | 4.8 | 11.3 | 16.7 | 18.2 | 19.4 |
|   Not Hispanic or Latino | | | | | | | |
|     White only | – | – | 3.8 | 11.6 | 14.6 | 17.3 | 17.1 |
|     Black or African American only | – | – | 6.1 | 10.7 | 18.8 | 18.4 | 21.2 |
|   Mexican | – | – | 7.7 | 14.1 | 24.7 | 22.1 | 27.9 |
| Girls | 4.7 | 6.2 | 5.3 | 9.7 | 15.3 | 16.8 | 16.9 |
|   Not Hispanic or Latina | | | | | | | |
|     White only | – | – | 4.6 | 8.9 | 12.6 | 14.5 | 14.6 |
|     Black or African American only | – | – | 10.7 | 16.3 | 23.5 | 27.7 | 27.1 |
|   Mexican | – | – | 8.8 | 13.4[b] | 19.6 | 19.9 | 18.0 |
| Percent of poverty level | | | | | | | |
|   Below 100 % | – | – | – | 15.8 | 19.8 | 19.3 | 24.3 |
|   100–199 % | – | – | – | 11.2 | 15.1 | 18.4 | 20.1 |
|   200–399 % | – | – | – | 9.4 | 15.7 | 19.3 | 16.3 |
|   400 % or more | – | – | – | [b] | 13.9 | 12.6 | 14.0 |

Adapted from National Center for Health Statistics (2012). Created by Daniel P. Miller, November, 2012

[a]Data for 1963–1965 are for children 6–11 years of age; data for 1966–1970 are for adolescents 12–17 years of age, not 12–19 years

[b]Estimates are considered unreliable

[c]Data for Mexican-origin persons are for 1982–1984

extremely rare (Frayling et al., 2007) implying that most cases of obesity are polygenic (due to the influence of multiple genes).

Despite the rarity of genetic disorders that predispose to obesity, genetic factors play an important role in the obesity epidemic. Behavior genetics research, which attempts to estimate heritability using twin or adoption samples and by estimating the proportion of variance in an outcome of interest that is explained by

genetic and environment factors, has confirmed that obesity (typically measured using BMI) is highly heritable. Research conducted before and after the current obesity epidemic has arrived at similar conclusions, finding a strong genetic component to obesity. Recent studies find a heritability for BMI of around 0.70–0.80, indicating that approximately 75 % of the population-level variation in BMI is explained by genetic factors (Silventoinen, Rokholm, Kapiro, & Sorensen, 2010; Wardle, Carnell, Haworth, & Plomin, 2008).

The high heritability of obesity creates an apparent paradox: how can genetics play such an important role in obesity if increases in adolescent obesity have taken place in a timespan too short to allow for population-level genetic changes? (Wardle et al., 2008) The answer lies in the means by which many genetic factors operate to affect obesity and other health outcomes. Reflecting contemporary rejection of the nature–nurture dichotomy, most scientists agree that gene–environment (G×E) interactions are responsible for obesity and other complex health outcomes (Barsh, Farooqi, & O'Rahilly, 2000). Thus, an environment increasingly tailored to weight gain via increased opportunities for caloric intake and decreased opportunities for caloric expenditure triggers an inherent susceptibility for obesity among certain members of the population. As a result, changes in the environment are understood to be at the root of the obesity epidemic, whereas genetic factors help account for interindividual differences in weight and weight gain (O'Rahilly & Farooqi, 2008; Wardle et al., 2008). This conceptualization of G×E interactions helps account for the presence of nonobese adolescents in abundantly obesogenic environments: young people who remain skinny may have genetic profiles that predispose them not to gain weight (O'Rahilly & Farooqi, 2008).

The sequencing of the human genome in 2003 brought with it the possibility of identifying genes or combinations of genes responsible for many common diseases including obesity. Although there was early excitement about the potential of this work, initial research failed to yield any promising results. However, in 2007, researchers using genome-wide association studies (GWAS) found variations (referred to as single nucleotide polymorphisms [SNPs]) in the fat mass and obesity-associated (*FTO*) gene region that were associated with BMI (Frayling et al., 2007). These variations appear to affect weight via the brain's regulation of energy balance (O'Rahilly & Farooqi, 2008). This 2007 finding was subsequently replicated in additional samples and was subsequently linked to risk of overweight or obesity as well (Fawcett & Barroso, 2010). Although research results have been consistent, the impacts of *FTO* SNPs on obesity are small: on average those with the worst version of the SNP weighed about 6.5 lb more than those with no variation (Fawcett & Barroso, 2010).

Although research on the impact of genes on obesity is still its infancy, the successful identification of the *FTO* SNPs suggest some optimism about the ability of future research to better unravel the genetic roots of polygenic obesity, with the ultimate potential goal of targeted interventions that could help fight obesity in young people (Fawcett & Barroso, 2010). However, as Carlsten and Burke (2006) articulate in a cautionary article regarding the benefits of genetics research on cigarette smoking, the implications of genetic research for adolescent obesity must be carefully considered. Assuming that future research will make possible appraisals of individual risk, will knowledge of increased (or decreased) risk of obesity be sufficient to alter adolescent behaviors or the choices that parents make around food consumption or exercise? Also, in the face of heightened risk for obesity, some young people may adopt a fatalistic attitude about obesity or may blame failed attempts at weight loss on their genetic make-up (Carlsten & Burke, 2006).

## Individual Factors Influencing Risk and Resiliency

A vast amount of previous research from a number of disciplines has investigated predictors and correlates of adolescent obesity. Thus, a full

review is beyond the scope of this chapter. In the sections on individuals, families, and communities that follow, we identify what we believe to be important or noteworthy factors affecting risk or resilience that have been the topic of recent research.

## Physical Activity and Sedentary Behavior

At the most basic level, obesity is understood as a matter of caloric imbalance: weight gain results when a person takes in more calories through eating than she expends through physical activity. Physical activity involves body movement and may involve exercise, but is not equivalent to energy expenditure, which is understood to be the byproduct of activity. More specifically, physical activity involves four dimensions: frequency, intensity, duration, and type (Must & Tybor, 2005). Conversely, sedentary activity implies minimal or no physical activity (Must & Tybor, 2005). Both constructs independently promote risk or resilience for adolescent obesity as both have separate implications for energy expenditure.

Although popular concern about decreases in physical activity and increases in sedentary behaviors over time among children appear to be mostly unfounded (Adams, 2006; Li, Treuth, & Wang, 2010), current average amounts of physical activity and sedentary behavior are both off the recommended levels for adolescents. As such, while changes in physical activity or sedentary behavior are unlikely to have caused recent increases in obesity, changes in current behavior might be effective in reducing risk for children.

A recent review of observational research on physical activity concluded that increases in physical activity were related to decreases in weight or obesity in adolescence, a finding confirmed by another systematic review of longitudinal observational and experimental studies (Reichert, Baptista Menezes, Wells, Carvalho Dumith, & Hallal, 2009). Relatively less is known about sedentary behavior and

how it might affect obesity, including whether sedentary time displaces physical activity (Rey-López, Vicente-Rodríguez, Biosca, & Moreno, 2008). The advent of personal computers, video game consoles, smart phones, tablet computers, and other technologies ostensibly create additional opportunities for sedentary behavior among adolescents; however, demonstrated links between these forms of screen time and obesity are tenuous. The most consistent sedentary behavior associated with obesity is television watching, a link we consider below in the section on family factors affecting risk and resiliency.

## Sleep

Although potentially situated as a family-based factor due to its relationship to family schedules and routines, a growing body of literature has identified limited sleep as a risk factor for obesity. Short sleep duration is thought to impact obesity through disruptions to the circadian clock, which (among other things) regulates the daily release of metabolic hormones (Froy, 2010). In particular, short sleep duration appears linked to excess production of the metabolic hormones ghrelin, which is thought to signal hunger to the body and leptin, lower levels of which signal an energy deficit to the brain, prompting a feeling of hunger (Taheri, 2006).

Accordingly, research has demonstrated an increased risk for obesity associated with short sleep duration, with some studies indicating a dose–response relationship. Although evidence of this relationship is most consistent in children (Patel & Hu, 2008), a few studies examine adolescents specifically. For instance, a longitudinal study of Canadian children (Seegers et al., 2011) found that adolescents with short sleep duration had significantly higher odds of being in overweight or obese trajectories than those getting 11 h of sleep per night, such that each additional hour of sleep per night was associated with a 51 % decrease in the odds of overweight and a 107 % percent decrease in the odds of obesity at age 13.

## Family Factors Influencing Risk and Resiliency

### Family Socioeconomic Status

As noted briefly above, the relationship between family socioeconomic status (SES) and adolescent obesity is dependent on race, ethnicity, and gender. An early review conducted by Sobal and Stunkard (1989) found mixed relationships between SES and obesity in adolescence, but this review relied on studies published in the 1980s and earlier, a period predating much of the recent increases in obesity and also the use of current definitions of overweight and obesity recommended for US adolescents. A more recent review (Shrewsbury & Wardle, 2008), which updated the work of Sobal and Stunkard, concluded that there was more consistent contemporary evidence for a negative relationship between SES and obesity, but found a significant inverse relationship in only one out of nine studies that included data on adolescents, although there was variation in results by gender.

In analyses of nationally representative data, Wang and Beydoun (2007) found no discernible relationship between SES and obesity in adolescent boys but a strong and negative relationship between SES and obesity in adolescent girls. The authors noted that this relationship was largely attributable to the strong inverse relationship for white adolescent girls; among black adolescent girls, obesity was actually highest among those with the highest SES. The causes of these inconsistencies are not entirely clear; obesity is a social condition and is the product of complex interactions across the social ecologies of adolescents, and the diverse social environments of young people likely moderate the relationships between social position and health. Additional research is necessary to identify the nature of disparities in adolescent obesity and to unravel the complex manner by which SES affects weight.

### Family Eating

Adolescence is a time of increasing autonomy regarding eating and food choice. Although food preferences and eating behaviors are cultivated in early interactions with parents and other family members (Birch & Fisher, 1998), adolescents have increasing control over their food choices, particularly given their ability to purchase and consume food outside of the home. Nonetheless, research indicates that parental decisions, parenting styles, and decisions around food may affect eating behaviors.

Longitudinal and experimental research suggests that restricting access to food can lead to unhealthy eating behaviors and obesity in children (Clark, Goyder, Bissell, Blank, & Peters, 2007). One study (Fisher & Birch, 2002) found that parental restriction of eating behaviors led to increased snacking by younger girls and to increased risk for overweight. Experimental evidence from the same researchers (Birch & Fisher, 2000; Fisher & Birch, 1999) found that children expressed greater interest in restricted snack food and were more likely to consume these foods when time was limited, and that feeding restrictions by mothers predicted girls' inability to regulate diet and greater consumption of snack food when full. Two recent reviews (Clark et al., 2007; Faith, Scanlon, Birch, Francis, & Sherry, 2004), which included findings from cross-sectional and longitudinal analyses, both concluded that among various parental feeding behaviors, restricted feeding was most consistently associated with increased risk for obesity.

The context and setting for family eating may also be relevant to adolescent obesity. Although longitudinal findings are not consistent, some cross-sectional research suggests that more frequent family meals are associated with reduced risk of overweight or obesity in adolescent girls (Fulkerson, Neumark-Sztainer, Hannan, & Story, 2008) and among all adolescents (Taveras et al., 2005). Where these meals occur may also be relevant, as food purchased as take-out or eaten at restaurants has been consistently identified as of

poorer nutritional quality and associated with higher BMI or risk of obesity in both cross-sectional and longitudinal research (Gillis & Bar-Or, 2003; Taveras et al., 2005; Thompson et al., 2004). Moreover, television watching during family meal times may limit the value of meals, as research has indicated that having the television on during family meal times is associated with lower consumption of healthy foods (like green vegetables) and higher consumption of sodas and other sugary drinks (Feldman, Eisenberg, Neumark-Sztainer, & Story, 2007).

## Television Watching

Television watching is one of the most consistently implicated factors in the obesity epidemic. Although results from previous cross-sectional research were less consistent (Anderson & Butcher, 2006b), findings from longitudinal studies have been more robust, typically indicating a significant and positive relationship between hours of daily television and BMI (Gortmaker, Must, Sobol, Peterson, & Dietz, 1996; Proctor et al., 2003). More importantly, experimental evidence (Robinson, 1998) suggests that planned reductions in television watching can lead to fairly large decreases in BMI. For example, a recent randomized clinical trial (RCT) found that an intervention aimed at reducing both television watching and computer time resulted in larger decreases in standardized ($z$) BMI in treatment group children (−0.24 SD) compared to control group members. Interestingly, this effect was isolated to children in low SES families (Epstein et al., 2008).

Television watching is thought to affect obesity in a number of different ways (Robinson, 2001). First, television watching is a sedentary activity and associated with decreased energy expenditure. Second, research has found that television watching disrupts internal satiety cues prompting overeating. Third, previous work indicates that television watching may displace physical activity in children and adolescents. Last, research has suggested that the targeted advertising of unhealthy foods to children may be linked to increased consumption and thus obesity (Lobstein & Dibb, 2005; Veerman, Van Beeck, Barendregt, & Mackenbach, 2009).

## Social and Community Factors Influencing Risk and Resiliency

### School Food Environments

Schools are important community institutions and are often charged with responsibilities exceeding the academic instruction of young people. Children spend more time in school than in any other setting than their homes. Although schools offer multiple opportunities for physical activity, about 35 % of daily caloric intake takes place in schools (Briefel, Wilson, & Gleason, 2009). Accordingly, we focus here on school factors related to food consumption and their relationship to adolescent obesity.

Despite the attention that schools receive as supposed promulgators of obesity and as settings for intervention and prevention efforts, there is surprisingly little consistency in the research literature regarding the effects of schools and school policies on child or adolescent obesity. Nowhere is this inconsistency more evident than in the body of literature regarding competitive foods (CF), which are foods and beverages sold in schools outside formal meals programs. Recently, more than half of all states and some local governments have sought to regulate the sale of CF (Sanchez-Vaznaugh, Sanchez, Baek, & Crawford, 2010), but there is little evidence in the literature to support these policies. Previous research on the effects of competitive foods has been limited by reliance on cross-sectional data. A recent review (Larson & Story, 2010) identified only three longitudinal studies (Anderson & Butcher, 2006a; Fox, Dodd, Wilson, & Gleason, 2009; Terry-McElrath, O'Malley, Delva, & Johnston, 2009) that examined CF and child weight, and the findings from these three studies were mixed. A recent longitudinal study using

data on adolescents in fifth and eighth grades found no impact of the sale of CF on weight and no differences by child gender, race, or SES (Van Hook & Altman, 2012).

Likewise, there is little consistent evidence even amongst a number of high-quality studies regarding the impact of participation in the National School Lunch and Breakfast programs, which have been frequently criticized for poor nutritional content. For example, Schanzenbach (2009) found that participation in the school lunch program was associated with increased obesity, Bhattacharya, Currie, and Haider (2004) reported that participation in the school breakfast program was associated with better nutritional outcomes, and Hofferth and Curtin (2005) found no evidence of any impact of participation in either program on overweight or obesity. Given the mixed findings for research on aspects of the school food environment, additional research is necessary to indicate how to most effectively manipulate school policies to prevent and treat adolescent obesity.

## The Built Environment

There has been recent focus on the way that the built environment affects obesity and other health outcomes. Generally speaking, the built environment refers to those aspects of a child's proximal environment that are human made, including such things as neighborhoods, roads, buildings, and playgrounds. There are a number of different general characteristics of the built environment that can affect nutrition and physical activity, including opportunities for physical activity (such as playgrounds and rec centers), places for active transportation (such as sidewalks which allow children to walk to school), safe places which encourage active behavior, the type and quantity of food outlets including restaurants, corner stores, and supermarkets, and the price and type of food available in a given area (Sallis & Glanz, 2006).

There are relatively few studies that have specifically investigated relationships between the built environment and adolescent obesity, but these studies tend to indicate that aspects of the built environment are important. One such study investigated physical activity facilities by Census block group for members of the National Longitudinal Study of Adolescent Health and found that each additional facility was associated with decreased odds of obesity and increased odds of moderate-vigorous physical activity (Gordon-Larsen, McMurray, & Popkin, 2000). A recent review of the role of the built environment in obesity in disadvantaged population concluded that access to supermarkets, opportunities for exercise, and neighborhood safety were most salient for obesity (Lovasi, Hutson, Guerra, & Neckerman, 2009).

Consistent with these conclusions, a great deal of attention has recently been directed to so-called food deserts: disadvantaged areas with limited access to supermarkets or other stores where fresh produce can be purchased at reasonable prices. For instance, access to healthy and affordable food has become a centerpiece of the Michelle Obama's Let's Move initiative. However, two recent studies question the existence of food desserts and their link to child and adolescent obesity. One study actually found higher numbers of both fast food restaurants and supermarkets in disadvantaged neighborhoods (Lee, 2012), and both found no relationship between food outlet availability and child obesity (An & Sturm, 2012; Lee, 2012).

In general, a challenge common to most studies of the built environment is disentangling selection effects from the influences of context-level characteristics. For example, people with a proclivity for physical activity might move to neighborhoods where opportunities for exercise are abundant, making it appear that spaces for physical activity are linked to obesity through exercise (Sallis & Glanz, 2006). Despite this limitation, research continues to emphasize the importance of the built environment and the potential value of policies that can alter the environment to help promote better health outcomes.

## Evidence-Based Treatment Interventions for Obesity

Despite nearly a decade of additional research on evidence-based treatment interventions since the previous version of this chapter (Paxson, Fink, & Brooks-Gunn, 2005) was published, the evidence base for effective treatment of child and adolescent obesity remains extremely limited. A recent review of RCTs of at least 1 year in duration conducted by the Cochrane Collaboration (Oude Luttikhuis et al., 2009) highlighted a number of methodological issues characteristic of the existing body of literature including small sample sizes (around two-thirds of included studies randomized fewer than 30 children to at least one treatment arm), high attrition rates, and variability in the manner by which obesity was measured, limiting both the internal and external validity of results (Oude Luttikhuis et al., 2009). On a related note, many of the existing interventions have been tried with highly selected samples and there have been few replications of specific interventions, further hampering generalizability.

Nonetheless, a number of reviews of interventions (Hadley, Hair, & Dreisbach, 2010; Haynos & O'Donohue, 2012; Ho et al., 2012; Kropski, Keckley, & Jensen, 2008; Oude Luttikhuis et al., 2009; Shaya, Flores, Gbarayor, & Wang, 2008) provide some evidence regarding effective anti-obesity treatment strategies for adolescents, some of which we summarize below. However, much of the pioneering work attempting to tackle the obesity epidemic—focused on system or community-level change—is being conducted outside of the confines of the experimental design. Many of these larger-scale programs are intended to both treat and prevent obesity and likely offer some of the best strategies for both aims.

## What Works

Interventions featuring a family-involvement component continue to be identified as the most effective in reducing weight among adolescents. Some

of the strongest evidence for such interventions comes from Epstein and colleagues (Epstein, Paluch, Gordy, & Dorn, 2000; Epstein, Paluch, Roemmich, & Beecher, 2007; Epstein, Valoski, Wing, & McCurley, 1994), who conducted a number of randomized trials focused on family-based treatment of obesity, often combining treatments aimed at promoting both physical activity and better eating.

In 1994, Epstein and colleagues published a 10-year follow-up summarizing the results of four early RCTs, which enrolled 185 children aged 6–12 years old and their families (Epstein et al., 1994). In all four studies, treatment participants enrolled in weekly meetings for 8–12 weeks and monthly meetings for an additional 6–12 months. Treatment families were also provided with information about the Traffic-Light Diet, a diet developed previously by Epstein and colleagues wherein foods are assigned a color based on caloric content and intended to provide children with direction regarding their consumption (green = go ahead and eat, yellow = proceed with caution, and red = stop). Treatment families completed food diaries with the goal of reaching a daily intake of 900–1,200 cal (Epstein et al., 1994). Dieting persisted until participants reached a target weight, and then caloric intake was increased by 100 cal per day until weight gain started, whereupon they reverted to the most recent caloric intake that did not result in weight gain. Although study design and treatment effect varied among these four studies, when results were pooled at 10-year follow-up, 34 % of treatment participants had decreased their percentage of overweight by 20 % or more and 30 % were no longer obese (Epstein et al., 1994).

Results from earlier work by Epstein and colleagues have been replicated in a number of more recent studies, all of which also employ a family-focused approach and make use of the Traffic-Light Diet. For example, in one study (Epstein et al., 2000), obese children ages 8–12 and their parents were randomly assigned to either a group promoting increased physical activity or one promoting decreased sedentary activity; both groups received information about the Traffic-Light Diet

and attended a number of meetings. Children in both treatment arms benefited from the intervention: at the 6-month follow-up, there was a decrease of 22.7 % in percent obese, and by the 2-year follow-up, the decrease in obesity was 10.9 % (Epstein et al., 2000). In a study comparing their earlier and later interventions, Epstein and colleagues (Epstein et al., 2007) concluded that there was no difference in decreases in BMI-z score between earlier and later studies, indicating the continued salience of family-based approaches for adolescent weight loss.

## What Might Work

Increasingly, there has been acknowledgment that the complex etiology of child obesity demands appropriately comprehensive programmatic responses. Thus, in recent years there has been a push—largely motivated by the efforts of the Robert Wood Johnson Foundation (RWJF)—to implement community- or system-based approaches to combat obesity. Because of their scope, these programs are not necessarily amenable to experimental design, and many are in early stages of implementation or are ongoing, limiting the extent and conclusiveness of results. Nonetheless, these cutting-edge approaches provide exciting initial evidence about the value and feasibility of large-scale approaches to combat (and prevent) child obesity.

A notable example of such a program is the Get Healthy Philly campaign, a multipronged, theory-based program aimed at "chang[ing] policies, systems, and environments so that healthy eating and active living become the norm" (Philadelphia Department of Public Health, 2012). The program involves health promotion strategies in seven categories: community food access and affordability, active living in communities, healthy eating and active living in schools, healthy eating and active living in afterschool programs, workplace policy change for healthy eating and active living, media and policy environments, and partnerships with government, nonprofit organizations, and academic institutions (Philadelphia Department of Public Health, 2012).

Get Healthy Philly's accomplishments have been varied and striking. For example, the city opened ten new farmers' markets in low-income neighborhoods and increased the purchasing power of Supplemental Nutrition Assistance Program (SNAP) funds by providing $2 in matching "Philly Food Bucks" for every $5 of SNAP benefits spent at farmers' markets, which helped lead to an increase in SNAP dollars spent at farmers' markets from about $13,000 in 2009 to about $56,500 in 2011 (Philadelphia Department of Public Health, 2012). Results of a multiyear study tracking obesity in Philadelphia public school students suggest that Get Healthy Philly has begun to have some effect. On the whole, obesity significantly decreased by 4.8 % (1.0 percentage point) from the 2006–2007 to 2009–2010 school years. There were absolute declines for students in elementary, middle, and high school, although the trend for decreases for high school students was not statistically significant. Also, while obesity decreased significantly for many groups including recipients of free or reduced-price lunch and African American males and Hispanic females, decreases tended to be smallest for those with the highest initial rates of obesity (Robbins, Mallya, Polansky, & Schwarz, 2012).

Additional community-based efforts are ongoing, many of which are funded by the RWJF as part of their commitment to reverse the child obesity epidemic by 2015. For example, the Foundation awarded grants and extensive technical assistance to 25 communities to promote physical activity as part of the Active Living by Design program. One grant recipient—Somerville, MA—enhanced and created opportunities for pedestrian and bike transportation and promoted walk-to-school efforts, school gardens, and physical education. An evaluation investigated whether Somerville adolescents and adults were more likely to meet goals for moderate or vigorous activity after the intervention and compared their levels of activity to residents in neighboring Everett, MA, which did not implement similar programs during the study period. Although middle schoolers were not more likely to engage in physical activity compared to baseline measures or compared to Everett residents,

after control for other factors, Somerville high school students were more likely to meet goals for physical activity compared to baseline but were not significantly more active than Everett students (Chomitz et al., 2012).

Although they often seek to reduce obesity rates, the line between prevention and treatment is blurred in community-level approaches. Furthermore, such programs are not strictly focused on adolescents, although young people are often important targets. These are both necessary consequences of the population-based approach inherent to many of these strategies wherein the goal is healthier lifestyles for all community members (see e.g., Philadelphia Department of Public Health, 2012). While community-level approaches may not be efficient from a targeting standpoint, their scope and breadth and focus on population health may be necessary components to realizing large-scale change in adolescent obesity rates.

## What Does Not Work

There are many examples of programs that had little-to-no impact on predictors of obesity or on obesity among adolescents. For example, the Fit for Life program targeted 10–14-year-old boy scouts in an effort to improve physical activity, decrease sedentary activity and reduce BMI. Randomly assigned members of the treatment group participated in physical activity at each troop meeting, received a booklet that taught how to do these activities, and gained access to a program website that provided age-appropriate information and an opportunity to track behaviors. There were no significant differences in BMI for treatment and control groups at any point, although there were small beneficial impacts on physical activity and sedentary activity for treatment group members who participated in the springtime (Jago et al., 2006).

Generally speaking however, the quality of existing studies precludes conclusive statements about what does not work in adolescent obesity treatment. The literature on school-based treatment programs is illustrative in this regard. A

recent review noted inconsistent findings across studies regarding effects by gender, age, and weight status of participants and inadequate statistical power to detect between group differences in some published work, concluding that "[t]he studies were heterogeneous in terms of design, participants, intervention and outcomes, making it difficult to generalize about what interventions are effective in preventing obesity" (Brown & Summerbell, 2009, p. 138).

## Psychopharmacology and Obesity

A recent Cochrane Review (Oude Luttikhuis et al., 2009) summarized the impacts of ten RCTs of adolescents aged 12–18, which examined the impacts of three of the most common pharmacological treatments for obesity: metformin, orlistat, and sibutramine. Meta-analysis indicated that when combined with lifestyle interventions, orlistat and sibutramine lead to average decreases of 0.76 in and 1.66, respectively in BMI at 6-month follow-up. The two RCTs of metformin did not meet the quality criteria for inclusion in the meta-analysis. However, the review also noted a "range of adverse effects" (Oude Luttikhuis et al., 2009) associated with both drug treatments. Because orlistat reduces weight by blocking the absorption of fat, it also prevents the absorption of fat-soluble vitamins and can lead to oily stools; sibutramine can lead to anorexia and is commonly associated with heart palpitations, high blood pressure, and headaches (Kanekar & Sharma, 2010).

Thus, while research on pharmacological options to treat obesity in adolescents is ongoing (Cabrera, Wilks, Symons, Blankson, & Cole, 2012), these treatment methods remain a controversial option. Citing the side-effects noted above as well as insufficient evidence regarding long-term efficacy or the efficacy of pharmacology as a stand-along treatment option, one recent article referred to the "questionable" value of sibutramine and orlistat pending substantial and rigorous future evidence from clinical trials (Kanekar & Sharma, 2010). Indeed, after the publication of the Cochrane Review (Oude Luttikhuis et al.,

2009) and many other studies cited here, sibutramine was withdrawn from the market in October, 2010 because of increased risk of heart attack and stroke (Schwartz, 2012).

Although research into new therapies is ongoing, new medications are years away from clinical use (Iughetti, China, Berri, & Predieri, 2011). Currently, the US Food and Drug Administration approves orlistat for use in adolescents 12 years or older (Barlow & the Expert Committee, 2007) and metformin (used in the treatment of diabetes) for both children and adolescents. However, until new options become available, pharmacological treatment should only be used in extreme cases of adolescent obesity where behavioral treatments have failed (Daniels, 2001) and should be closely monitored (Kanekar & Sharma, 2010).

## The Prevention of Obesity

As with obesity interventions, a number of high quality reviews, including a newly published Cochrane Collaborative Review (Waters et al., 2011), more fully summarize the knowledge base regarding obesity interventions. In general, obesity prevention efforts tend to target the modifiable behaviors thought to promote obesity, most notably food or beverage consumption or physical activity. Although more prevalent today, obesity prevention efforts are still far less common than interventions targeting already-obese children or adolescents, although as noted above, many of the cutting-edge community-level approaches include both prevention and intervention aims. This section focuses on distinct primary prevention efforts, i.e., interventions targeted at adolescents who are not already classified as obese (or overweight) or which take a population-level approach by targeting all children within a setting.

## What Works

A review of the literature did not identify any specific prevention programs that have been tried successfully three times.

## What Might Work

Of the eight interventions included in the 2011 Cochrane Collaborative Review of obesity preventions for adolescents aged 13–18 years old, only two (Ebbeling et al., 2006; Singh, Chin, Paw, Brug, & van Mechelen, 2009) demonstrated any significant impacts on obesity, and both of these were focused on reducing consumption of sugar sweetened beverages (SSBs). Both popular wisdom and a large body of academic research have linked the consumption of SSBs to obesity in both adults and children (Malik, Schulze, & Hu, 2006), prompting the American Academy of Pediatrics to suggest that reductions in consumption might be helpful in fighting obesity (Davis et al., 2007). Accordingly, researchers and policy makers have attempted to regulate the price, availability, and consumption of SSBs to both prevent obesity, although similar efforts have also targeted already-obese adolescents (Ebbeling et al., 2012).

A few experimental studies have attempted to decrease SSB consumption with the ultimate goal of reducing obesity. In the first of these, Ebbeling et al. (2006) recruited a sample of 103 adolescents aged 13–18 years from a Boston-based high school who were regular drinkers of SSBs. Participants were randomly assigned to an intervention group and control group. After filling out an order form, members of the intervention group received home delivery of low-calorie drinks (four servings per day for the participant and two servings per day for each additional household member) for 25 weeks. Intervention group members also received advice and contact from researchers. At the end of 25 weeks, intervention group participants decreased their energy consumption from SSBs by 82 %, with no change in the control group. Although there was no significant average difference in BMI change between treatment and control groups, BMI change was slower for treatment group participants with the highest initial BMIs compared to those in the control group.

In a more recent study, researchers from the Netherlands (de Ruyter, Olthof, Seidell, & Katan, 2012) conducted a double-blind, randomized

controlled trial with 641 children between the ages of 4.10 and 11.11. Participating children received a box at school containing eight beverage cans (one for each day of the week plus one extra) for 18 months. Cans contained either a noncaloric, artificially sweetened beverage or a sugar-sweetened beverage. Researchers contracted with a company to produce identical tasting beverages and teachers checked to see that children drank their can and reminded them to take cans home for nonschool days. At the end of the study period, increases in BMI-z score were significantly lower for children in the sugar-free group (−0.13 standard deviations), as were increases in mean weight, BMI, and body fat.

In a school-based randomized trial of Dutch adolescents, Singh and colleagues (Singh et al., 2009) found that an intervention targeting individual behavior (11 lessons in biology and physical education classes) and school environment (encouraging schools to offer more physical education and make healthy changes to the school cafeteria) resulted in reductions in the consumption of SSB. Both boys and girls in treatment schools consumed fewer SSBs at the 8-month (immediately postintervention) and 12-month follow-ups but not at the 20-month follow-up. Although there were no significant differences in BMI between treatment and control groups, adolescents in the treatment group had significantly better increases in skinfold thickness by the 20-month follow-up.

Policy makers have also attempted to try and prevent obesity by regulating the availability of SSB in schools, although the results of these efforts are mixed. Indeed, the academic literature is split as to whether the availability of SSB in schools actually affects consumption, with some studies finding that children with access to SSBs at school consume them less often (Johnson, Bruemmer, Lund, Evens, & Mar, 2009; Shi, 2010) and others finding no relationship between availability and consumption (Cunningham & Zavodny, 2011; Fletcher, Frisvold, & Tefft, 2010b). Some research indicates a positive impact of regulating access to SSBs. A postfacto study evaluated the impact of the Boston School District's decision to eliminate the sale of SSBs

in all schools beginning in the 2004 school year. Using data from the Boston Youth Study, researchers (Cradock et al., 2011) found that SSB consumption decreased by 0.30 servings for Boston high school students between the 2003–2004 and 2005–2006 school years at a time when there was no change in national consumption of SSBs.

However, another quasi-experimental study of school SSB provision found no impact of school-level policies that restricted access to SSBs (Blum et al., 2008). In a study of seven Maine high schools, students from four schools that volunteered to reduce or eliminate access to SSBs were compared to those from three control schools. Beverage consumption was measured at the beginning of the 2004–2005 school year and again at the end. Although availability of beverages decreased markedly in treatment schools, consumption of SSBs decreased among students in both treatment and control schools, with no significant between-group differences.

Finally, policy makers have considered implementing taxes on SSBs as a means to both prevent and reduce obesity. Although a review of the responsiveness of consumption to changing food prices concluded that an 10 % increase in soda prices ought to result in an 8–10 % reduction in consumption of soft drinks (Andreyeva, Long, & Brownell, 2010), research evidence suggests no or small to moderate effects of taxes on SSB consumption or on BMI (Fletcher et al., 2010b; Fletcher, Frisvold, & Tefft, 2010a, 2010c; Powell, Chriqui, & Chaloupka, 2009; Sturm, Powell, Chriqui, & Chaloupka, 2010). Limited empirical support for taxes has led some analysts to conclude that their magnitude (often only a few cents) is too small to induce behavior changes (Chaloupka, Powell, & Chriqui, 2011) and that larger taxes are necessary, whereas others report that young people substitute consumption of other high-calorie drinks in the face of higher soft drink prices (Fletcher et al., 2010c)

Thus, while rigorous experimental evidence provides support for the idea that interventions can reduce consumption of SSBs (and ultimately obesity), the value of larger-scale approaches such as school- or district-level policies regulating

the availability of SSBs or of state-level taxes to increase the price of soda and other SSBs is less clear. However, given the likely link between SSBs and adolescent obesity, future efforts to reduce SSB consumption may be effective means to prevent obesity.

## What Does Not Work

In general, the literature on obesity prevention among adolescents remains too sparse to make specific statements about approaches that do not work. The number of high-quality studies remains too few and various programmatic efforts have not been replicated enough times to provide good evidence about interventions that ought to be avoided. As noted above, six out of the eight studies focused on adolescents (ages 13–18) included in the most recent Cochrane review on obesity prevention (Waters et al., 2011) did not find any significant differences in BMI between treatment and control groups, although many resulted in significant improvements to behaviors related to obesity such as physical activity.

## Recommended Best Practice

Although increases in obesity in young people have slowed in recent years, a large proportion of American adolescents are either overweight or obese, and obesity remains the predominant public health problem of the modern era. Although much of the literature on obesity prevention and intervention remains hampered by lack of replication and design problems, this review identified a handful of approaches that are promising options in the fight against obesity. For one, research continues to demonstrate the value of family-based treatment programs. However, there is little indication as to the scalability of such approaches. In addition, intervention and prevention efforts aimed at reducing consumption of SSBs may be a useful avenue for schools, communities, and families in pursuit of obesity prevention and intervention. Pharmacological interventions

continue to be risky and are not recommended to treat or prevent adolescent obesity.

Despite the potential value of the approaches identified here, the complex etiology and social patterning of adolescent obesity suggest that community- or greater-level efforts may ultimately yield the best results. As the research on GXE interactions indicates, obesity is the product of a widely obesogenic environment. Approaches that attempt to alter behavior or intervene in only one segment of the environment such as schools must necessarily contend with the continued obesogenic influence from multiple other contexts like homes and neighborhoods. Thus, it is likely that approaches must target multiple contexts in order to result in pronounced and lasting decreases in adolescent obesity. In the week before this chapter was concluded, media outlets began reporting that small, but noticeable decreases in child obesity had become evident in cities such as Philadelphia, New York, and Los Angeles. The exact causes of these decreases remain unclear; however, large-scale efforts are likely responsible, and research will need to continue to delineate what aspects of these strategies are most efficient and effective to further reduce overweight and obesity among young people.

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# Eating Disorders

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## Introduction

An "eating disorder" is a set of interrelated and very unhealthy (1) eating behaviors; (2) weight management practices; (3) attitudes about food, weight, and body shape; (4) struggles with self-concept and self-control; and (5) disruptions in the neuroanatomical processes underlying hunger, satiety, and emotions. Obesity in adolescents is a risk factor for various forms of disordered eating (Neumark-Sztainer, Wall, Story, & Sherwood, 2009), and obesity may be the outcome of disordered eating in a minority of adolescents. Nevertheless, obesity is not an eating disorder per se.

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Although the prognosis for "symptom remission" after 5–10 years is good (70–80%), eating disorders are mental illnesses that severely compromise the scope and quality of people's lives (Ackard, Fulkerson, & Neumark-Sztainer, 2011; Keel & Brown, 2010; Klump, Bulik, Kaye, Treasure, & Tyson, 2009). The negative, often extremely serious, medical and nutritional effects of eating disorders, as well as the nature of less well-known eating problems in adolescents, are reviewed in Lask and Bryant-Waugh (2007a) and Le Grange and Lock (2011).

It is useful to conceptualize the eating disorders as extremes of a spectrum composed of ordinary, if not normative, components: (a) self-definition in terms of weight and shape in relation to unrealistic standards for beauty, fitness, and power; (b) fear of fat feeding a drive for thinness and leanness; (c) harsh self-surveillance and self-criticism in mutual disharmony with both intense emotional distress (e.g., shame, anxiety, and depression) and difficulties in self-regulation; (d) negative or distorted body image; (e) binge eating; and (f) unhealthy forms of weight management. These are far from harmless. For example, in adolescent girls negative body image increases risk for depression, binge eating, physical inactivity, unhealthy weight management, eating disorders, and other ill-advised weight loss strategies, including cigarette smoking, illegal drug use,

and dangerous drug-mixing (Ferreiro, Seoane, & Senra, 2012; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006). In a minority of young boys, self-comparison to an ideal created by internalization of the lean, muscular, and powerful-looking bodies promoted in the mass media generates body dissatisfaction, motivates unhealthy eating and exercise patterns, and promotes use of dangerous body-building techniques, including anabolic steroids and "nutritional" supplements (see, e.g., Smolak, Murnen, & Thompson, 2005).

## The Eating Disorders: Definitions and Epidemiology

### Anorexia Nervosa

*Definition*: AN is characterized by a fierce, obsessive, and intransigent engagement in self-starvation that results in either maintenance of a "markedly low weight" (Anticipated DSM-V Changes, 2010) or failure to achieve the weight gain expected on the basis of age, maturational status, and height. Self-starvation is attained by selective avoidance of foods and fluids that are viewed as fattening, by excessive exercising, and by "purging" via self-induced vomiting or abuse of laxatives, enemas, or diuretics. A subgroup of adolescents with AN also has episodes of binge eating and/or purging. These features, along with severity of dieting, predict problems accepting treatment and therefore more negative long-term outcomes (Steinhausen, 2011).

*Prevalence and incidence*: The period prevalence of AN among middle and high school girls is 0.1–.5% (Keel, 2010; Levine & Smolak, 2010; Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011). While the number of new cases of AN among boys does not appear to be increasing, the incidence of AN in many countries, including the USA, increased over the period 1930–1990, particularly for females ages 10–24. This trend continued into the late 1990s and early 2000s for girls ages 15–19, the peak ages of onset for AN (Keel, 2010; Norris, Bondy, & Pinhas, 2011).

### Bulimia Nervosa

*Definition*: Bulimia nervosa (BN) typically begins in later adolescence or early adulthood and is extremely rare in preteens (Norris et al., 2011; Steinhausen, 2011). BN consists of a pattern (of at least 3-month duration) of cycles of binge eating and purging. Binge eating refers to weekly (Anticipated DSM-V Changes, 2010) consumption, usually in secret, of an unusually large amount of calories (typically 1,000–2,000 kcal), often in the form of "fattening, forbidden" foods renounced during intermittent periods of dietary restraint. A "binge" is accompanied by feelings of loss of control and by temporary dissociation from painful self-awareness. In *DSM-5* the traditional concept of "purging" will likely become part of Criterion B: "recurrent inappropriate compensatory behavior" (BodyMatters Australasia, n.d.). This includes, for example, self-induced vomiting, but will be extended to fasting and excessive exercise. Most people find vomiting or laxative use unpleasant, if not disgusting; in the context of BN these behaviors become reinforcing because they restore a sense of calm and control, while replacing the frightening prospect of weight gain with immediate experiences of emptiness.

*Prevalence and incidence*: The period prevalence of BN among middle and high school girls is 0.9–2% (Keel, 2010; Levine & Smolak, 2010; Swanson et al., 2011). The incidence of BN increased dramatically for adolescent and adult females over the twentieth century, but in the past 10–15 years the number of new adolescent cases *may* have leveled off (Keel, 2010; cf. Norris et al., 2011, p. 80).

## Eating Disorders not Otherwise Specified (EDNOS) and Binge Eating Disorder (BED)

*Definitions*: The largest groups of adolescents and adults suffering from eating disorders are those with EDNOS (Le Grange, Swanson, Crow, & Merikangas, 2012). EDNOS is diagnosed when problems with body image, eating, and weight

management do not meet all the criteria for AN or BN but do embody the definition of an eating disorder. For example, a 16-year-old girl who is slender but not extremely thin, who often feels "fat" and believes others find her "obvious flabbiness" to be "appalling," and who does not binge eat but habitually "feels out of control" when eating and thus induces vomiting on average five times per week would currently be diagnosed as having an EDNOS (case adapted from Sysko & Hildebrandt, 2011). Using *DSM-5*, she would likely receive a diagnosis of Purging Disorder, one of six subcategories under a new section that replaces EDNOS and is entitled other specified Feeding and Eating Disorder. Despite its status as a residual category, EDNOS and its *DSM-5* counterpart should never be considered "subclinical." These eating disorders tend to be as severe as AN and BN in terms of eating pathology, concomitant psychopathology, and poor physical health (Le Grange et al., 2012; Thomas, Vartanian, & Brownell, 2009).

In *DSM-4-TR* (American Psychiatric Association, 2000), one of the principal forms of EDNOS was Binge Eating Disorder (BED). In *DSM-5* BED will very likely be certified as a distinct eating disorder (Body Matters Asutralasia, n.d.). In BED episodes of binge eating, including subjective loss of control over eating and overeating when not physically hungry, are habitual (self-perpetuating for at least 3 months; Stice, Marti, & Rohde, 2012). Unlike BN, there is no "recurrent inappropriate compensatory behavior." Consequently, BED is a risk factor for obesity, although only a minority of obese people suffers from BED.

*Prevalence and Incidence*: Several large-scale studies in the USA and in Spain suggest a period prevalence for BED of 2.0–2.5% for of adolescent girls and 0.3%, for boys (Ackard, Fulkerson, & Neumark-Sztainer, 2007; Machado, Machado, Gonçalves, & Hoek, 2007). Face-to-face survey data from the National Comorbidity Survey Replication Adolescent Supplement yielded a *lifetime* prevalence of EDNOS of 4.6%. Within the EDNOS category the most common subtypes were loosely defined BED followed by rigidly defined BED (Le Grange et al., 2012). According to Levine and Smolak (2006), the period prevalence of significant problems (BED, EDNOS, or any pair of negative body image, binge eating, and unhealthy weight management) along the ED spectrum is, *very conservatively* (cf. Ackard et al., 2007; Norris et al., 2011; Stice et al., 2012), 8% for adolescent girls and young women, and somewhere in the vicinity of 2–5% of adolescent boys. There is some evidence that the incidence of EDNOS (a) has increased over time and (b) is currently at an alarmingly high rate of approximately 1,500 new cases per 100,000 person years in the USA and Europe (Norris et al., 2011; Stice et al., 2012).

## Gender Differences and the Construct of Gender

There is considerable ambiguity and thus substantial controversy over the prevalence and incidence of disordered eating and eating disorders among adolescent males (Piran, McVey, & Levine, in press). The female/male ratio for AN and BN is at least 4:1, whereas the female/male ratio for EDNOS, BED, and eating disorder symptoms (disordered eating) is probably 1.5–2.0 (Hudson, Hiripi, Pope, & Kessler, 2007; Levine & Smolak, 2006; Muise, Stein, & Arbess, 2003). This gender difference does not establish "gender" as a "fixed" risk factor. Rather, it emphasizes the ways in which the roles of "young girl," "adolescent girl," and "young woman" (and their male counterparts) are socially constructed and enforced, and the different experiences—including experiences of the body-in-context—that females and males have (Piran & Teall, 2012; Smolak & Piran, 2012). Many unhealthy roles and experiences for females are amenable to social and political change. These include emphasis on personal appearance and sexual appeal as defining features of the self, a close link during adolescence between body image and negative affect (including depression), greater constraints on career opportunities, and experiences of objectification in the forms of sexual

harassment and sexual violence (Levine & Smolak, 2006; Piran, 2001, Piran & Teall, 2012; Smolak & Piran, 2012).

## Genetic and Other Biological Factors

Eating disorders are serious "biologically based" illnesses on the order of major neuropsychiatric conditions such as depression, alcohol dependence, and obsessive-compulsive disorder (Kaye & Strober, 2009; Klump, Bulik et al., 2009; Lask & Frampton, 2011). Nevertheless, it is very difficult to disentangle putative neurobiological causes from the profound neurobiological effects of eating disorders and disordered eating. Many of these disturbances dissipate with weight restoration and normalization of eating.

## Genetic Vulnerability

Three types of evidence converge to demonstrate that some individuals, clustered within certain families, are genetically vulnerable to the spectrum of eating disorders (Bulik, 2004; Wade, 2010; see also Jasper, 2007, and Levine & Smolak, 2006, Chap. 3, for critiques). First, the prevalence of eating disorders or disordered eating in female "first-degree" relatives (mother, sister, and daughter) of women with AN or BN is approximately ten times greater than in female first-degree relatives of matched samples of women without a diagnosable eating disorder (Jacobi, Hayward, de Zwaan, Kraemer, & Agras, 2004; Kaye & Strober, 2009). The increased risk is nonspecific; there is aggregation in families of AN, BN, and EDNOS, as well as mood and anxiety disorders.

Second, the concordance of eating disorders or specific eating disorder symptoms (e.g., weight preoccupation, and dietary restraint) is significantly greater in same-sex "identical" or monozygotic (MZ) twins than it is in same sex "fraternal" or dizygotic (DZ) twins (Bulik, 2004; Wade, 2010). Individual differences in risk tend to be most strongly correlated with an additive combination of *heritability* (pointing to multiple genes, each with a small effect conferring a continuum of genetic liability) and *unique* environments (i.e., experiences not shared by both twins in a set). Estimates for the proportion of variance in vulnerability *across individuals* accounted for by each are typically 30–50% (Bulik, 2004; Mazzeo et al., 2010; Wade, 2010). Finally, an adoption study of adolescent and young adult sisters ($M_{age} = 18.7$) found that biological sibling correlations for weight concerns, binge eating, and body dissatisfaction were moderate (range = +.29 to +.46), whereas none of the corresponding adoptive sibling correlations was significantly greater than zero (Klump, Suisman, Burt, McGue, & Iacono, 2009).

## Pathophysiology and Neurotransmitters

"The pathophysiology of anorexia nervosa (AN) and bulimia nervosa (BN) is poorly understood" (Kaye, Wagner, Fudge, & Paulus, 2010, p. 38). This is due in part to the sheer complexity of relationships between genetic potentials, neuronal systems in the brain, experience and neuroadaptation, and specific symptoms or syndromes (Smolak, 2012; Strober & Johnson, 2012). Serotonin has received considerable research attention. It is an important neurotransmitter in brain systems involved in hunger, satiety, mood, anxiety, obsessions, impulsivity, temperament, and behavioral inflexibility (Brewerton, Frampton, & Lask, 2009; Klump, Bulik et al., 2009). In addition, relative to males, females have serotonin systems that are more sensitive to disruption, for example, by dieting (Levine & Smolak, 2006).

At present, however, there are no longitudinal data to support a potential *causal* role for dysfunction in neurotransmission or neuronal pathways involving serotonin, dopamine, or any other neurotransmitter, either by themselves or in interaction with environmental experiences, such as prenatal maternal dieting or family-based stressors. Caution is warranted by the fact that disturbances in neurotransmitters (e.g., in endogenous opioids) tend to normalize after recovery (Kaye & Strober, 2009).

## Pubertal Development

It is unlikely that pubertal hormones play a direct or even major role in the development of eating disorders. Early maturing girls are at risk for many psychosocial problems, including body dissatisfaction—and consequently eating disorders—especially if there is significant weight gain (Smolak, 2012). And early puberty in the context of concurrent stressors (e.g., dating and beginning middle school) appears to have a cumulative effect on increased risk for disordered eating (Smolak & Levine, 1996). Yet, pubertal timing has no implications for eating disorder risk beyond mid-adolescence (Smolak, 2012).

## Temperament and Personality

There are fairly consistent positive correlations between *both* AN and BN and early neuropsychological tendencies and behavioral styles such as (a) fearfulness, worry, low levels of positive emotionality, and high levels of negative emotionality (i.e., neuroticism); (b) avoidance of harm and ambiguity, coupled with an obsessive preoccupation with order, symmetry, certainty, and perfection; and (c) low self-directedness (Cassin & von Ranson, 2005; Kaye & Strober, 2009; Mazzeo & Bulik, 2009; Strober & Johnson, 2012). In addition, AN with bulimic symptoms, BN, and BED are all correlated with novelty- and sensation-seeking, as well as impulsivity (Cassin & von Ranson, 2005).

The predisposition to anxiety, obsession, doubt and concern about mistakes, avoidance of harm and ambiguity, low self-directedness, and perfectionism could well be sources of vulnerability to disorders fueled by negative effect, weight and shape concerns, need for control, and conflicts about independence and interdependence (Cassin & von Ranson, 2005; Strober & Peris, 2011). In this regard, the temperament characteristics listed above are logically consistent with clinical features of AN, BN, and BED, they have a familial-genetic foundation, they are related to the family factors discussed below, and

they are relatively independent of body weight. There remains a need for much more of the longitudinal data that are critical in establishing a risk factor (Cassin & von Ranson, 2005; Levine & Smolak, 2006).

## Individual Factors Influencing Risk

The concepts of "risk factor" and of "cause" begin to coincide when the risk factor precedes the outcome of interest (e.g., bulimia nervosa), is a statistically significant predictor of that outcome (i.e., after controlling for other variables, including initial level of the criterion), and can within reason be manipulated systematically (e.g., in a laboratory or prevention study) in either direction in order to increase or decrease the outcome accordingly (Jacobi, Hayward et al., 2004; Levine & Murnen, 2009; Stice & Presnell, 2010). Not all potential causal risk factors, such as child sexual abuse and other trauma, can be ethically or practically studied in this way (Jacobi & Fittig, 2010; Smolak, 2009). Consequently, case-controlled retrospective designs are necessary, if necessarily ambiguous, in the process of building models of risk factors for the eating disorders. An excellent review of the status of risk factor research and risk factor models is provided by Jacobi, Morris, and de Zwaan (2004).

There is a great deal of overlap in correlates, risk factors, and causal risk factors for AN and BN, although obsessive-compulsive personality characteristics favor development of AN (Jacobi & Fittig, 2010). Table 16.1 summarizes the individual risk factors that likely set the stage for eating disorders in adolescent girls. In thinking about these factors, caution should be exercised in two ways. First, no one risk factor is necessary or sufficient; for example, not all adolescent girls with eating disorders have a "negative body image" or "a high drive for thinness." Second, distinguishing these factors as "individual" should not obscure the fact that all are embedded in multidimensional psychosocial contexts (Piran & Teall, 2012; Smolak, 2012). For example, it is unlikely that body mass per se is a risk factor for bulimic

**Table 16.1** Individual risk factors for eating disorders

| Factor | Description and comment |
|---|---|
| Negative affect or "neuroticism | A dispositional tendency to experience stress, distress, dysphoria tension, irritability, worry, despair, etc. Extends to a vulnerability to experience depression and/or anxiety disorders |
| Weight and shape concerns | Construct integrating body dissatisfaction, anxiety about fat and weight gain, drive for thinness, and dieting behavior |
| Body dissatisfaction | Construct integrating beliefs, perceptions, and feelings that one's body, and in particular one's weight and shape, is flawed because of its failure to live up to internalized standards of beauty and attractiveness |
| Internalization of the slender beauty ideal | Awareness of and investment in standards (e.g., as embodied in media figures) that proclaim thinness to be essential to feminine beauty and to feminine emblems of self-control and success. Often accompanied by experiences of pressure to be thin from media, family, peers, and the culture in general |
| Low self-esteem and negative self-concept | Construct integrating beliefs, perceptions, and feelings that one's self, or at least significant aspects of one's self in addition to one's physical appearance, is inferior, inadequate, too shy, etc. |
| Social comparison tendencies | General inclination to define and evaluate one's self, including one's body, in terms of standards set by media, peers, and others |
| Pediatric obesity | A risk factor only for syndromes including binge eating |
| Trauma from child sexual abuse | A risk factor that is stronger for syndromes with bulimic features |
| Impulsivity | Behavioral indicators (and possibly self-reports; there is mixed evidence) of generalized tendency to act, without thinking or contemplating risk, in the presence of internal impulses of feelings and/or external events (e.g., stressors). Risk factor only for syndromes with bulimic features |

*Note*: Based on research reviewed and conclusions drawn by Cassin and von Ranson (2005), Jacobi and Fittig (2010), Smolak (2012), Smolak and Levine (2007), Stice and Presnell (2010). It is highly probably that many of these risk factors are not specific to eating disorders

syndromes; rather, it is people's prejudicial responses to socially constructed categories of "overweight" and "obesity" that set the stage for negative self-concept, restriction and restraint, stress-induced overindulgence, desperate purging, etc. (Smolak, 2012).

## Dietary Restraint

Although dietary restraint is considered by many experts to be a causal risk factor for eating disorders, Stice and Presnell (2010) argue that self-reports of dieting behavior and a dieting mentality actually constitute a "proxy risk factor." Their extensive literature review reveals a perplexing but important contrast between (a) the well-documented status of scores on various measures of "dietary restraint" as predictors of subsequent increased risk for disordered eating, including binge eating versus (b) overwhelming evidence that successful or unsuccessful weight loss efforts due to actual reductions in caloric consumption tend to result in *reduced* negative affect and/or *decreased* binge eating. It is not entirely clear what accounts for this disjunction. Stice and Presnell's (2010) review suggests that the "dietary restraint" construct actually represents a tendency to struggle with behavioral inhibition and impulsivity, one manifestation of which is a sense that one is eating less than one would like, coupled with the tendency to overeat in general and in some instances to binge eat.

## Risk Factors in Males

There are some clear similarities between adolescent girls and adolescent boys in correlates and risk factors for negative body image and the ED spectrum (Muise et al., 2003; Smolak, 2009). Thus, for example, in boys higher BMIs, low self-esteem, experiences with peer teasing, and a tendency to define one's self via social comparisons to lean and muscular media figures appear to be significant but not potent risk factors. Also, as is the case for females, adolescent and young adult males are at greater risk for the ED spectrum

if they participate in competitive varsity sports that have weight classes (e.g., wrestling) or that emphasize thinness as one source of endurance (e.g., long-distance running or bicycling; Metzger, Murnen, & Smolak, 2010).

One potentially important difference is in the area of sexual orientation. Although there is a dearth of longitudinal research on the emergence of eating disorders per se in adolescent boys, there is evidence (see, e.g., Feldman & Meyer, 2007) that, across a range of ages and across Black, White, and Latino groups, males who are gay or bisexual report greater levels of disordered eating and eating disorders. In a large-scale longitudinal study, Austin et al. (2009) found that adolescent boys who did not identify as exclusively heterosexual (e.g., were bisexual or gay) reported greater levels of binge eating *and* purging.

## The Drive for Muscularity

To a significant degree, "body dissatisfaction" and "negative body image" have a different meaning for adolescent boys than for adolescent girls. A majority of adolescent boys report being "dissatisfied" with their weight and shape. However, relative to females, males are less likely to see thinness, weight, and control of hunger as essential components of self-concept. As important, many boys and young men want to be heavier, larger, and more muscular without being fat. To some degree they have internalized a muscular ideal that embodies highly valued masculine characteristics such as strength, physical fitness, athletic prowess, and the potential to dominate, or at least not be controlled by, others. Approximately 2–3% of adolescent boys will be highly motivated to lose fat and build muscle mass by constant attention to diet, selective avoidance of certain foods, by working out excessively, and by (ab)using illegal anabolic steroids and legal nutritional supplements. In extremis this may become muscle dysmorphia: an obsessive, painful, and isolating preoccupation with the "feeling" that one's body, no matter how "developed" it appears to others, falls short of the highly valued muscular ideal in ways that will be "obvious" to others (Murray, Rieger, Touyz, & De la Garza García, 2010).

## Family Factors

### Structure and Dynamics

Case–control studies reveal that families of adolescents with an eating disorder do not tend to have greater levels of dysfunction than families of adolescents without an eating disorder (Strober & Peris, 2011). Similarly, prospective studies tend to find that general measures of family environment, including communication and problem-solving styles, do not predict increases in disordered eating (Jacobi & Fittig, 2010; Le Grange, Lock, Loeb, & Nicholls, 2010). Thus, the Academy for Eating Disorders' position paper (Le Grange et al., 2010) begins: … "whereas family factors *can* play a role in the genesis and maintenance of eating disorders, current knowledge refutes the idea that they are either the exclusive or even the primary mechanisms that underlie risk" (p. 1).

This conclusion does not mean that families are irrelevant. Longitudinal and case-controlled retrospective designs (e.g., Jacobi, Morris, et al., 2004; Jacobi & Fittig, 2010; Le Grange et al., 2010; Smolak & Levine, 2007; Strober & Peris, 2011) *suggest* that *early* presence of one or more of the following increases the risk of AN or BN (a) childhood feeding problems, stressful mealtimes, and disruptions in the quality of parent–child interactions during mealtimes; (b) sexual abuse (more strongly related to subsequent binge eating and purging; see Table 16.1); (c) early childhood health problems; and (d) low levels of affection plus high levels of parental expectations and demands, as well as high levels of family conflicts, arguments, and criticism. More precisely, it appears that an insecure parent–child attachment within a very stressful family environment constitutes a risk factor, not for eating disorders in particular, but for later development of psychopathology (e.g., difficulties in self-regulation, mood disorder, and poor social skills) that accompanies and increases the risk of eating disorders.

## Social Cognitive Influences

The evidence that children and adolescents acquire body dissatisfaction, weight and shape concerns, and other essential elements of an eating disorder through observational learning of parental behaviors and attitudes is mixed and weak (Levine & Smolak, 2006; Smolak, 2012). On the other hand, there is considerable evidence that teasing (however "playful" or "well intentioned"), direct critical comments, and weight loss advice from parents and other family members contributes to negative body image and unhealthy weight management practices (Menzel et al., 2010; Smolak, 2012). Meta-analyses by Menzel et al. (2010) indicated that, in general, the negative effects of appearance-related teasing on body dissatisfaction and disordered eating were stronger for children and adolescents (vs. adults) and for girls (vs. boys). In addition, longitudinal data indicate that intense and intrusive efforts by parents to control a child's eating in early childhood predict later problems with obesity and self-regulation, both of which are risk factors for later disordered eating (Neumark-Sztainer et al., 2007; Smolak, 2012).

## Social Community Risk Factors

### Media

As heavy users of mass media (e.g., television, video games, and various aspects of the Internet), adolescents are exposed regularly to numerous, salient, overlapping, fairly consistent, and potentially unhealthy messages about (1) ideal body sizes and shapes in relation to gender and (2) attractiveness, self-control, sexuality and other forms of desire, body objectification, pleasure, morality, food, eating, weight management, and power. While engagement with mass media certainly does not *cause* eating disorders in adolescent girls in any *direct* way, an increasingly large body of research strongly suggests that mass media in general, and fashion magazines and television (e.g., music videos) in particular, do indeed play a role in generating and maintaining

disordered eating in adolescent girls. That influence is stronger for bulimic symptoms and appears to operate, with small-to-moderate effect sizes, through some of the mediating factors (e.g., internalization of the thin beauty ideal) described in Table 16.1 (Levine & Harrison, 2009; Levine & Murnen, 2009). In what is likely a self-reinforcing and potentially "vicious" cycle, the psychological processes through which media exert their negative effects also make the vulnerable adolescent more motivated to seek out media, even as she is more likely to respond negatively to it (Levine & Harrison, 2009).

*Ethnicity*: The sparse data available (Levine & Smolak, 2010; Smolak, 2012) suggest Black girls are less negatively affected than White girls, perhaps because their "differentness" obviates social comparison to the ubiquitous slender White ideal. Black and Hispanic girls who watch more Black-oriented mainstream media report *higher* levels of body satisfaction (Levine & Smolak, 2010). Conversely, a 2-year longitudinal study by Schooler (2008) found that, for Hispanic adolescent girls, watching more hours of "mainstream" television predicted greater declines in body image satisfaction.

*Males*: The ideal male body portrayed in mass media is also tall and lean, but it is more variable. Since 1970 there has been a proliferation of media images of adolescent boys or young men who are muscular and either well groomed and expensively dressed, or presented in various states of ready-for-action, objectified undress (Levine & Harrison, 2009). These images have small but consistent and unhealthy effects on boys' body image and drive for muscularity (Barlett, Vowels, & Saucier, 2008). In perhaps 2-4% of adolescent boys, negative body image and overconcern with muscularity combine to motivate use and abuse of food supplements and steroids (Eaton et al., 2012; Hoffman et al., 2008). In general, internalization of the muscular ideal is not as influential in boys as is internalization of the slender ideal by girls, probably because appearance is only one of many ways that boys can construct and extend an identity. There is a need for longitudinal research (see, e.g., Smolak & Stein, 2010) that situates media

influence in the context of other factors in adolescent development (Smolak & Levine, 1996).

## Prejudice, Discrimination, and Harassment

In Western culture, one very significant social contributor to development of the spectrum of disordered eating is prejudice, discrimination, and harassment directed toward fat people in general, and fat females in particular (Brownell, Puhl, Schwartz, & Rudd, 2005). Independent of a girl's BMI and ethnicity, peer teasing related to weight, shape, and appearance is an especially consistent and strong correlate of body shame, disordered eating, and eating disorders. Limited research indicates a significant association between peer teasing and body dissatisfaction in boys, too (Levine & Smolak, 2010; Menzel et al., 2010; Smolak, 2012).

Reports of sexual harassment of adolescents by adolescents are extremely common, and there is no consistent gender difference. However, experiences with sexual harassment clearly mean something different to female adolescents (Piran & Teall, 2012; Smolak & Piran, 2012). Many studies of adolescent girls and young women demonstrate that cross-gender experiences of sexist jokes and comments, unwanted sexual attention, weight-related prejudice, harassment, and bullying are associated with negative body image and disordered eating (Piran, 2001; Piran & Thompson, 2008; Smolak, 2012; Smolak & Piran, 2012).

These and other types of adverse experiences (e.g., teasing or bullying based on racial characteristics) are reflected in Piran's Developmental Theory of Embodiment (see Piran & Teall, 2012, Fig. 1, p. 177). This theory, supported by 20 years of mixed methods research (including a participatory action prevention program) by Piran and colleagues (see, e.g., Piran, 1999b, 2001, 2010; Piran & Teall, 2012), maintains that three "domains" of adverse social experiences create and sustain a wide variety of significant disruptions in a girl's or woman's understanding of, expression of, and care for her body. These domains are Violation of Body Ownership ("corseting" in physical domains); Internalization of Constraining Social Labels ("corseting" in social cognitive domains, including gender identity); and Exposure to Prejudicial Treatment (social disempowerment). As noted by Piran and Teall (2012), each domain has significant implications for the possibility of liberating and preventive changes in various environments within the ecology of adolescents.

## Peers

It appears that female adolescent friendship groups share attitudes about weight, shape, and appearance. In groups where a lot of attention is paid to eating and weight, individual girls have an increased level of weight concerns, which is a very significant predictor of both disordered eating and depressive symptoms (Wertheim, Paxton, & Blaney, 2009). In addition, peer factors are prospectively correlated with increases in adolescent girls' body dissatisfaction, another principal risk factor for the spectrum of disordered eating (Smolak, 2012; Wertheim et al., 2009). Peers can model unhealthy attitudes and weight management, and they can intentionally or unintentionally serve as, or champion media as, standards for unhealthy social comparisons. Some peer groups also create a subculture in which communications about "looks" (i.e., appearance), "fat," and "thin" function to organize and express themes such as emerging sexual consciousness, transitory bad feelings, and long-range personal achievement and social status (Smolak, 2012; Wertheim et al., 2009).

## Athletics

In general, athletic participation has positive, protective effects on female physical and mental health, including body image (Hausenblas & Fallon, 2006; Menzel & Levine, 2010). A meta-analysis by Metzger et al. (2010) found that adolescent girls and young women (but not males) who participate in team-oriented ball sports (e.g.,

soccer, basketball, and lacrosse) are at significantly *lower* than normal risk for eating pathology, possibly because "strength, power, and teamwork are emphasized more than appearance and the thin ideal" (p. 12). Nevertheless, in the sports world there is considerable concern about eating pathology and amenorrhea. Female athletes participating in either "judged and aesthetic sports" (e.g., gymnastics, dance, figure skating, and synchronized swimming) or "weight-class" sports (e.g., rowing, karate, and judo) tend to be at greater risk for these problems (Beals, 2004; Metzger et al., 2010). In contrast to previous meta-analytic results (see Murnen, Smolak, & Ruble, 2000, cited in Metzger et al., 2010), *elite* females athletes participating in endurance and weight-class sports are not at increased risk for disordered eating, apparently because eating and weight management are motivated more by performance concerns than by preoccupation with appearance (Martinsen, Bratland-Sanda, Eriksson, & Sundgot-Borgen, 2010). Elite status was more of a risk factor for males; male endurance athletes (e.g., long-distance running and cycling) were at very high risk for eating pathology (Metzger et al., 2010).

## Race and Ethnicity

Even though there is significant heterogeneity within each category (e.g., "Hispanic" may apply to people who trace their families to Mexico, Spain, or Chile), many people segment the major ethnic groups into European-Americans (Whites), African-Americans (Blacks), Hispanics, Asian-Americans, and American Indians. Levine and Smolak (2010) reviewed the literature on body image and eating disorders in these ethnic groups, drawing six major conclusions. First, AN remains rare among ethnic minorities, and the prevalence of BN is fairly equivalent across minority groups. Thus, clinicians and prevention specialists should keep in mind that adolescents in all minority groups are vulnerable to negative body image and to eating disorders, and that clinical manifestations are similar across all ethnic groups. Second, in all

ethnic groups girls are significantly more likely than boys to report body dissatisfaction, which, when it includes weight and shape concerns, is the strongest predictor of unhealthy dieting, binge eating, and purging across all ethnic groups. Similarly, within all ethnic groups a significant minority of adolescent girls engages in unhealthy weight control behaviors, and girls are more likely than boys to report disordered eating and be diagnosed with eating disorders.

Third, African-American girls tend to aspire to a larger ideal body size and to have a moderately higher level of body esteem, especially in terms of weight satisfaction, than girls in the other four groups, who do not tend to differ significantly from each other (Grabe & Hyde, 2006). This may explain in part why, although data are inconsistent across studies, African-American adolescent girls are in general less likely to report binge eating and dieting and other forms of weight control, including symptoms of disordered eating (with the exception of self-induced vomiting), than are White or Asian American adolescent girls. Note, however, that the Black–White difference in weight satisfaction appears to have decreased since 1990 (Grabe & Hyde, 2006).

Fourth, much more research is needed, but it appears that unhealthy eating and unhealthy methods of weight and shape management, including cigarette smoking, are alarmingly high in Native American adolescent girls and boys (Levine & Smolak, 2010). Finally, despite some intriguing ethnic differences, it is currently impossible to interpret the inconsistent data concerning the relationships among body satisfaction or disordered eating and either level of ethnic identity or extent of acculturation to the dominant White beliefs, values, and customs.

## Resilience

### Positive Body Image and Self-Acceptance

Just as negative body image is a strong risk factor for the spectrum of disordered eating, positive body image appears to have many benefits for

overall health and thus to foster resilience (see Menzel & Levine, 2010, and Tylka, 2011, for reviews). Positive body image consists of an appreciative, accepting, and respectful attitude toward the body, incorporating the dimensions of appearance, attunement, health, functionality, and enjoyment (Menzel & Levine, 2010; Piran & Teall, 2012; Tylka, 2011). People with a positive body image are less vulnerable to eating disorders because they are attuned to bodily needs and feelings, take care of their bodies, and respect what their bodies enable them to do and to accomplish (see, e.g., Avalos, Tylka, & Wood-Barcalow, 2005). They also protect their bodies from unhealthy influences such as the tendency to compare one's self to others or to media ideals. Body acceptance and appreciation are grounded in religious or other principles that define inner and outer beauty according to diverse "ideals" (Tylka, 2011).

As noted above, participation in certain sports facilitates and reinforces positive body image. In addition, at least in females ages 18 and older, regular participation in yoga reduces self-objectification and increases levels of body awareness and body responsiveness, along with other mental health benefits (see, e.g., Daubenmier, 2005). Yoga emphasizes many features of positive body image, including balance, flexibility, strength, stamina, and mind/body integration.

Although data are mixed (Grogan, 2010), a recent longitudinal study of Swedish adolescents found that higher self-esteem in general and a greater sense of emotional well-being and self-acceptance significantly each reduce risk for subsequent disordered eating (Gustafsson, Edlund, Kjellin, & Norring; 2009). The importance of self-acceptance is also seen in cross-sectional data from a large and fairly representative national sample ($N = \sim 2900$) of British girls and boys, ages 11, 13, and 15 (Fenton, Brooks, Spencer, & Morgan, 2010). Adolescents who felt their body weight and shape was "about right" tended to report feeling intelligent, to have a father present in the home and to feel they communicated easily with him, and to believe their teachers were interested in them as people.

## The Context and Patterns of Eating

Fenton et al.'s (2010) research also supports Piran's emphasis on the importance of social context for building and extending resilience. In this regard, Neumark-Sztainer et al. (2007) used data from the first 5 years of the large-scale Project EAT (www.sph.umn.edu/epi/research/eat/) to identify environmental, personal, and behavioral predictors of binge eating and of extreme, unhealthy weight control in middle school and high school girls. For girls, the only predictors of *reduced* levels of both eating disorder symptoms were a greater number of family mealtimes, a more pleasant atmosphere at family mealtime, and self-reported frequency of eating lunch. The only predictor of a *lower* level of extreme weight control for girls was self-reported frequency of eating breakfast. Two predictors of *lower* levels of binge eating for girls were belief in personal control over healthy eating and increased frequency of eating dinner. For boys, no variables predicted lower levels of extreme weight control over time. Lower levels of boys' binge eating were predicted by feeling more connected to family and friends and by greater levels of nutritional knowledge.

## What Works: Evidence-Based, Interdisciplinary Interventions

The majority of eating disorders among adolescents can be managed in the community with once weekly meetings that include medical monitoring, family-based treatment (FBT) or another appropriate psychotherapy, and consultation with a dietitian as needed.

## Assessment of Eating Disorders

Early diagnosis of eating disorders makes earlier intervention and, therefore, recovery more probable (Treasure & Russell, 2011), but diagnostic criteria are adult based, making diagnosis in children and younger adolescents difficult (Lask & Bryant-Waugh, 2007b). For instance,

children may simply stop growing rather than presenting with weight loss; absence of menstruation does not apply to boys or prepubertal girls; and presumably central attitudinal factors, such as devaluing fat and idealizing thinness, are less consistent in children and early adolescents (Smolak & Levine, 1996). Given the serious health consequences of eating disorders for developing children, such as growth retardation, lowered bone density or even osteoporosis, and possibly compromised brain development, it is important to consider an eating disorder diagnosis whenever a parent expresses concern about a pronounced change in their child or adolescent's eating behaviors.

Assessment of eating disorders involves a comprehensive evaluation of medical, nutritional, mental health, and contextual factors (Academy for Eating Disorders' Medical Care Standards Task Force, 2012). An effective assessment determines whether an eating disorder can be managed in the community or whether severity or medical instability requires partial or inpatient hospitalization.

## A Family and Interdisciplinary Approach to Treatment

Children and adolescents with eating disorders benefit from parental involvement in treatment (Le Grange et al., 2010) as delivered by an interdisciplinary team consisting of a physician, dietician, and mental health professionals (Lask & Bryant-Waugh, 2007b). The family therapist helps the parents gain an appreciation of the eating disorder and, with AN, their essential role in their child's recovery. Individual therapy might be used with BN or at a later stage in any of the eating disorders.

*Medical and nutritional management*: A thorough physical examination and laboratory work-up establish a baseline and determine the frequency and extent of medical monitoring. Regular monitoring is essential for assessing whether a change or intensification of treatment, including hospitalization, is required. If the adolescent has been starving himself or herself, then an expected weight range or initial "progress

weight" is determined by the physician in consultation with the dietitian (Lask & Bryant-Waugh, 2007b). As the child progresses in recovery, expected weight is adjusted upward to support ongoing growth. The nutritionist, preferably a registered dietitian, works to challenge disordered eating patterns and to promote adoption of the attitudes and behaviors that contribute to a healthy and flexible approach to eating.

## What Works: Family Therapy

Family therapy is the most studied and established form of treatment of adolescents with AN (Lock, 2011). Limited data support its preferential use in BN as well (Le Grange, Crosby, Rathouz, & Leventhal, 2007). Adolescents who receive FBT within 3 years of developing AN have better outcomes than those who receive individual therapy (Lock et al., 2010). If the adolescent has had an eating disorder for more than 3 years, both family and individual therapy are less effective (Treasure & Russell, 2011).

## Family-Based Treatment

In 2001, family therapy for adolescents with eating disorders was manualized so that it could be standardized and studied (Lock, Le Grange, Agras, & Dare, 2001). Known as FBT, it has three phases (Lock, 2011). The first phase focuses on managing the symptoms of AN. Parents are educated about the grave risks of AN and are given responsibility for their child's recovery. The therapist provides support and coaching as the parents work out strategies for refeeding the child. Siblings are guided to provide encouragement and distraction at meals, but not to step into a parental role. The team dietitian consults directly with the parents rather than the adolescent.

Once eating patterns have improved and weight is mostly restored, FBT moves to the second phase, in which responsibility for food intake is cautiously returned to the adolescent in an age-appropriate manner. The last phase of FBT begins when the adolescent is no longer preoccupied with and consumed by eating disorder

symptoms and thus can start or resume taking on the tasks of adolescence, including developing autonomy, again appropriate to age. Relapse prevention is addressed prior to termination.

In FBT for BN, the main difference is that the therapist facilitates a collaborative effort between parents and adolescent (Le Grange, 2011; Le Grange et al., 2007). Otherwise the phases are similar, with the focus of Phase 1 being on restoring healthy eating and curtailing binge eating and purging. A study of 80 adolescents comparing FBT with supportive psychotherapy for BN showed that significantly more adolescents in the FBT group were binge and purge abstinent at the end of treatment and at 6-month follow-up (Le Grange et al., 2007). Reduction of symptoms was also faster in the FBT group.

## Single Family Therapy

FBT can be practiced either with the whole family being seen together, or with parents and adolescent seen separately from one another. In the latter case, parents are coached similarly, whereas their child is seen individually and provided with supportive therapy (Eisler, 2005). This form of the treatment is preferred for families where parental criticism is high, particularly at the early stages of treatment, or where there are abuse issues (Eisler, Simic, Russell, & Dare, 2007).

## Multifamily Therapy

FBT is also practiced with multiple families in a group format (Asen & Scholz, 2010; Eisler; 2005; Scholz, Rix, Gantchev, & Thomke, 2005). Up to eight families work together over the course of a year, with therapists facilitating. After an introductory meeting, there is an intensive intervention period lasting 4 or 5 full days. Usually this is followed by about six single day-long sessions over the course of a year, held further apart from one another as the group progresses through the three phases of treatment. Parents bring food for their own families, but families support one another at the group meals. Break-out groups of parents, adolescents, and siblings permit discussion of issues of specific concern to them. Activities encourage family members to listen attentively to each other's perspectives and to learn from other families. Time is taken for group reflection and feedback. Advantages of multifamily therapy are that families feel less marginalized and isolated, and there is less travelling time for those who live long distances from treatment. Outcome data are being gathered (Fairbairn, Simic, & Eisler, 2011).

## What Might Work: Individual Therapy

Because of the devastating effects of an eating disorder, and especially a chronic condition, on development in a child or adolescent, rate of recovery is a critical issue in choosing a therapeutic approach. A recent randomized study of 121 adolescents who had been ill for less than 3 years found that FBT and adolescent-focused therapy were equally effective, but FBT helped restore weight more quickly and better prevented relapse at 6- and 12-month follow-up (Lock et al., 2010).

## Adolescent-Focused Psychotherapy

Adolescent-focused psychotherapy (AFP) is an outgrowth of dynamic self-psychology. It focuses on accessing and processing emotional experiences, and addressing relational and developmental tasks, while emphasizing adolescents' strengths and coping skills. AFP helps adolescents to address their difficulties positively and without resorting to eating disorder behaviors. AFP, combined with parent counseling, has shown favorable outcomes (Lock et al., 2010; Moye, Fitzpatrick, & Hoste, 2011).

## Cognitive Behavior Therapy

Cognitive behavior therapy (CBT) for AN has not been systematically used or studied with adolescents. The many studies investigating CBT for BN and BED in adults and some older

adolescents demonstrate that CBT is an effective treatment for these eating disorders (Campbell & Schmidt, 2011; Fairburn & Harrison, 2003). There are some studies supporting the effectiveness of adaptations of CBT in treating younger adolescents with BN and BED. For example, in a study of 84 adolescents (2 males), Schmidt et al. (2007) compared family therapy with CBT-based individually guided self-care and found both to be effective. Pretorius et al. (2009) found an online version of CBT also produced decreases in eating disorder behaviors and attitudes, even at 6-month follow-up.

## What Does Not Work in Community-Based Treatment

A noninterdisciplinary approach to treatment is not recommended. Treatments that do not involve the family are not generally recommended.

## What Works in Intensive Treatment: Day Hospitalization

Day hospital or partial hospitalization programs address the needs of adolescents for whom community-based treatment is not sufficient and who are not medically unstable or in a psychiatric crisis. These programs use an interdisciplinary team of a physician and/or nurse, psychiatrist, dietitian, family and individual therapists, teacher, and child and youth counselors (Boachie & Jasper, 2011; Dare & Eisler, 2000). FBT has been adapted to a day hospital setting with very good outcomes (see, e.g., Girz, Lafrance-Robinson, Foroughe, Jasper, & Boachie, 2012). Intensive work with the parents helps equip them to manage their child's eating symptoms at home. At the same time, the adolescent is able to recover weight or resolve binge eating and purging symptoms without delay. The day hospital is well suited for determining whether medication may be helpful to those adolescents whose coexisting depression, anxiety, or obsessive-compulsive symptoms do not resolve with renourishment. A significant advantage of this model over hospitalization is

that adolescents are able to continue with schooling (with a reduced study load) and to remain connected with their families and friends on evenings and weekends. This empowers adolescents and their principal sources of social support to maintain gains following discharge (Dare & Eisler, 2000).

## What Works in Inpatient Settings

Inpatient hospitalization is needed in situations of severe medical or psychiatric destabilization. Here, it is critically important that an interdisciplinary team addresses medical, psychiatric, nutritional, psychological, and family goals. Inpatient programs are generally successful in leading to weight gain in anorexic patients or in arresting a bulimic pattern during the hospital stay (Dare & Eisler, 2000). Nevertheless, if they do not equip the adolescent and the family with strategies to maintain healthy weight and eating patterns upon discharge, the desired long-term gains are unlikely (Dare & Eisler, 2000). Given the effectiveness of FBTs, inpatient hospitalization is most usefully seen as a way of resolving medical or psychiatric instability during treatment rather than as a treatment itself (Scholz et al., 2005). Residential treatment has to be balanced against the demonstrated benefits of having parents involved in treatment of AN, and the likelihood of attachment-related distress for children or adolescents being sent away from their families for extended periods of time.

## Pharmacotherapy

Experts believe that very cautious use of medication has a place in a multidimensional, comprehensive treatment program (Gowers & Bryant-Waugh, 2004).

### Anorexia Nervosa

There are no known medications that effectively treat the primary symptoms of AN. Because

coexisting depression, anxiety, and obsessive-compulsive symptoms often resolve fully or partially with renourishment, renourishment is the first line of treatment (Lask & Bryant-Waugh, 2007b). For an adolescent with severe and deteriorating levels of anxiety and obsessionality, pharmacotherapy *may* be warranted as a way of supporting the therapeutic process of renourishment. SSRIs appear to be unhelpful while weight is low (de Zwaan, Roerig, & Mitchell, 2004). However, several case series report benefits with atypical antipsychotics (specifically olanzapine, quetiapine, and risperidone), including decreased agitation and premeal anxiety, improved treatment compliance, and facilitation of weight gain (Couturier & Spettigue, 2011; McNight & Park, 2010). As a double-blind, placebo-controlled study did not confirm such benefits for risperidone (Hagman et al., 2011), caution and a conservative approach are in order. This includes close medical monitoring, because there is a high probability of adverse effects when medications are administered to severely malnourished adolescents. In this regard, it is not recommended to prescribe drugs to facilitate gastric emptying during refeeding or to prevent osteoporosis caused by starvation-induced hormonal deficiencies (Couturier & Spettigue, 2011; Gowers & Bryant-Waugh, 2004).

### Bulimia Nervosa

The SSRI fluoxetine (Prozac) is the only FDA-approved drug for treatment of BN and/or depression in adolescents, whereas bupropion (Wellbutrin) is contraindicated due to risk of seizures (Couturier & Spettigue, 2011). The only study specific to adolescents with BN, an 8-week open trial of fluoxetine and supportive psychotherapy, demonstrated significant improvement in binge eating and purging (Kotler, Devlin, Davies, & Walsh, 2003). Because medication benefits appear not to persist beyond 4–6 months, fluoxetine should never be used as the principal treatment for BN in adolescents (de Zwaan et al., 2004).

### Binge Eating Disorder

The (British) National Institute for Clinical Excellence (2004) Guidelines suggest that for adults and adolescents, CBT or dialectical behavior therapy (DBT) adapted for BED should be the primary treatment, followed, if needed, by adjunctive treatment with SSRIs.

## Prevention of Eating Disorders

There are many reviews of programs designed to prevent the ED spectrum in children, adolescents, and young adults (see, e.g., Levine & Smolak, 2006; Piran et al., in press; Stice, Shaw, & Marti, 2007). The vast majority of programs for adolescents involve curricula or other interventions in schools. On a continuum of prevention, school-based programs fall between universal (supported by public policy and intended for large, nonsymptomatic groups within the general public) and selective (focused on adolescent girls as a nonsymptomatic but high-risk population). No primary prevention program for children and young adolescents has fulfilled the stringent criteria for effectiveness outlined by the Society for Prevention Research (2004). Consequently, we review the models that have guided prevention, strategies that do not work, and strategies that represent, to date, the best practices with adolescent girls and boys.

## Prevention: Theoretical Foundations

### Social Cognitive Theory Informing Psychoeducational Approaches to Prevention

Most prevention programs for adolescent girls have been guided by either Bandura's social cognitive theory or Fairburn's cognitive behavioral theory (see Levine & Smolak, 2006, Chap. 6). These models focus prevention on (1) overvaluation of appearance and social comparison processes in constructing one's identity; (2) the

perception *and* feeling that one's body shape is quite discrepant from the culture's unrealistic beauty ideals; (3) maladaptive beliefs and negative feelings about body shape, eating, and weight loss; and (4) unhealthy or limited behaviors (e.g., calorie-restrictive dieting) motivated by body dissatisfaction and negative affect (see Table 16.1). As described above, these elements (see Smolak, 2012) are learned through indirect and direct messages, including reinforcement and punishment, from a variety of social sources. Cognitive processes are prominently involved in internalization of the slender beauty ideal, in developing organizing maladaptive beliefs about the meaning of "thin" and "fat" and "control" and "self," and in the tendency to compare one's weight and shape to the bodies of various other people, such as peers and celebrities (Levine & Smolak, 2006).

These models direct social cognitive prevention programs to decrease cognitive behavioral risk factors while increasing healthy attitudes and behaviors related specifically to body image and to healthy eating and exercising. Predetermined curricular lessons are implemented in schools by classroom teachers or by mental health professionals. Social learning is fostered and reinforced by brief lectures, observational learning, role-playing, behavioral rehearsal, social reinforcement, and guided discovery via group discussions and homework assignments

## Nonspecific Vulnerability-Stressor Models Informing Resilience-Enhancement Interventions

Different types of psychological and physical problems have similar risk factors: negative self-concept, lack of coping skills and other behavioral competencies, cumulative life stress, and lack of social support (see Levine & Smolak, 2006, Chap. 7). This *nonspecific* relationship between vulnerability, stressors, and mental and physical disorder implies that adolescents and their communities will be mutually healthier when prevention

specialists *collaborate* with various stakeholders to reduce stressors while encouraging the "5 Cs" of youth development (Lerner, Fisher, & Weinberg, 2000): *C*ompetence (life skills), *C*onnection, *C*haracter, *C*onfidence, and *C*aring (compassion). According to this nonspecific vulnerability-stressor (NSVS) model (Levine & Smolak, 2006; see "Resilience" section above), adolescents need multiple opportunities to integrate social interest and social skills with a positive sense of the self as valued, unique, competent, connected to others, and engaged in doing meaningful things, including advocating for beneficial social changes. O'Dea and Abraham's (2000) eating disorder prevention program is designed to enhance self-esteem and acceptance of self and others by involving teachers, students, peers, and family members in related activities. Improving social norms of acceptance and enhancing self-esteem also serve to deemphasize the importance of physical appearance.

## Public Health Perspectives

The *Public Health Model* seeks to "shift the whole distribution of exposure [to relevant risk factors] in a favourable direction … to alter some of society's norms of behavior" (Rose, 1985, p. 37). However, research has concentrated far more on individual differences in risk factors than on population-level causes of eating disorders (McLaren & Piran, 2012). Nevertheless, because exposure to the thin ideal is a ubiquitous risk factor in developed countries, McLaren and Piran (2012) suggested that a population health approach to prevention could involve legislation against use of thin and airbrushed model images in the media, or development of financial incentives to those companies that promote healthier ideals for girls and women. To date, initiatives that promote such broad public health perspectives have not been enforced through legislation and have relied mainly on voluntary compliance by different media organizations (Piran & Mafrici, 2011).

## Critical Social Perspectives

The Critical Social Perspectives (CSP) was developed by Piran (2001, 2010). Its core assumption is that prevention has to be informed by, and address, at least at institutional levels, the ways in which social structures of privilege and power, infused with widely accepted dominant values, shape the body experiences of specific vulnerable groups. Based on the Adverse Social Experiences Model (ASEM; Piran & Thompson, 2008) and the Developmental Theory of Embodiment (DTE; Piran & Teall, 2012) described above, the CSP emphasizes the need to transform aspects of the social environment of youth, such as their school. Participants are encouraged to engage in relational dialogues facilitated by an adult mentor. These discussions enable girls, as well as boys or coed forums, to explore and reflect upon context-specific factors that shape their body experiences. This dynamic process of "consciousness-raising" provides critical knowledge about both adverse and facilitative social experiences relevant to creating healthier group norms and practices, and to establishing objectives and strategies for changes within the larger school system. In this way, multiple discourses of analysis and resistance become the foundation for collaborative efforts by the mentor and the program participants (students, teachers, coaches, and staff) to transform not only how they are thinking and behaving, but also some of the significant contexts of their lives. Research has shown that adolescent girls engaged in such a process shift from a place of embodied individual shame and helplessness to embodied self-care and agency in transforming their social environment (Piran, 1999a, 1999b, 2001).

## Prevention: What Might Work

### A Whole School Approach

Several promising programs have targeted the school environment for change, enhancing positive experiences, such as supportive peer norms, while minimizing adverse experiences, such as weight- and body-based teasing. The *Dance School Participatory Prevention Program* (DSPPP; Piran, 1999a, 1999b, 2001) and the *Very Important Kids* (VIK) program (Haines, Neumark-Sztainer, Perry, Hannan, & Levine, 2006) applied principles of the Health Promoting School model (see Levine & Smolak, 2006, Chap. 15) in transforming the school environment. The DSPPP used ongoing focus groups with students to assess aspects of an elite Canadian residential ballet school that disrupted positive body image. Piran then worked with students and staff to improve multiple aspects of their school experience, including peer relations, school policies, curriculum, staff training, and the physical environment. All-school surveys conducted over a 10-year period revealed that, as predicted, the systemic changes documented in intensive case study analysis (Piran, 2001) facilitated significant reductions in negative body image, disordered eating patterns, and eating disorders (Piran, 1999a, 1999b). Haines et al. (2006) implemented the VIK Program in an inner city school in the USA. Incorporating suggestions and other input from students and staff, the program focused on reducing peer weight teasing by integrating guided discussions of students' responses to teasing with school-wide training, a no-teasing campaign, and a theater production for students and parents. The VIK program led to reduced body-based teasing compared to a control group, though no follow-up information was gathered.

Another promising development is the Comprehensive School Health model. McVey, Tweed, and Blackmore (2007) applied this model in developing and implementing a multicomponent, all-school intervention in middle schools (ages 11–14). The *Healthy Schools-Healthy Kids* curriculum addresses healthy eating, an active lifestyle, self-esteem, and coping with stress. The curriculum was linked to and augmented by small peer support groups, staff training, a school play, and workshops and newsletters for parents. At 6-month follow-up, girls in the intervention schools reported greater reductions in awareness

and internalization of the slender beauty-ideal compared with girls in control schools.

The ATHENA (Athletes Targeting Healthy Exercise and Nutrition Alternatives) program is designed to change the ecological context of high school athletic, cheerleading, and dance teams through psychoeducation, positive norms development, media literacy, and promotion of drug resistance and life skills (Elliot et al., 2006, 2008). ATHENA, which is delivered to groups of girls in the context of their athletic participation, also emphasizes leadership (role modeling) and program implementation by peers (captains) and coaches. ATHENA is adapted from the highly successful ATLAS program for preventing use and abuse of steroids and food supplements by male high school athletes (Goldberg et al., 2000). A randomized controlled trial revealed that ATHENA participants were less likely than control athletes to use unhealthy weight management practices, though not all gains were maintained at 1–3-year follow-up (Elliot et al., 2006, 2008).

Interestingly, a whole school approach to preventing and reducing obesity, entitled *Planet Health*, was found to reduce the incidence of extremely unhealthy weight management (Austin, Field, Wiecha, Peterson, & Gortmaker, 2005). This program applies social cognitive theory to curriculum development, staff training, and other aspects of middle school in order to increase fruit and vegetable consumption, enhance physical activity, and decrease television viewing and consumption of high-fat foods. The program did not prevent obesity, but, unexpectedly, reduced initiation of purging and of use of diet pills.

## Critical Resistance Skills: Media Literacy and Cognitive Dissonance

Several promising interventions have focused on countering media-generated messages that idealize a thin appearance. Neumark-Sztainer, Sherwood, Coller, and Hannan (2000) implemented a media literacy program for Girl Scouts groups, including troop leaders. The intervention included identification of messages and persuasive

strategies embedded in advertisements, critical evaluation of real and virtual body types, a media letter campaign, and a theater production for parents. Although there was no change in dieting behavior, the program reduced internalization of the slender ideal while it improved other media-related attitudes and choice of magazines, gains that were maintained at 3-month follow-up. Wilksch and Wade (2009) implemented and evaluated *Media Smart*, an intensive 8-lesson media literacy program developed for mixed-sex audiences. This interactive program integrated media literacy, activism, and advocacy. A large-scale randomized controlled study with grade 8 students in four schools revealed a positive effect on shape and weight concern and on dieting at 30-month follow-up for girls and at 6-months follow-up for boys.

Stice, Rohde, Shaw, and Gau (2011) studied the effect of their Cognitive Dissonance (CD) approach on weight preoccupied adolescent girls. CD is a well-established, effective targeted prevention program for "at-risk" weight-preoccupied university students (Stice, Marti, Spoor, Presnell, & Shaw, 2008). Participants write essays, design resistance strategies, and participate in role-plays that aim to counter media-generated pressures for internalization of the thin ideal. Stice, Rohde et al. (2011) found that, compared with controls, adolescent girls who participated in the CD program showed greater decreases in body dissatisfaction at 2-year follow-up and in eating disorder symptoms at 3-year follow-up. Mediation analyses by Stice, Marti, Rohde, and Shaw (2011) indicated that the CD program worked by reducing both internalization of the thin ideal and body dissatisfaction. They argue that the most promising next step is implementing the CD program on a larger scale, utilizing a peer leader model.

## Prevention: What Does Not Work

Didactic programs, focusing on delivery of information about healthy eating or about the media, do not seem to be efficacious in preventing eating disorders (Levine & Smolak, 2006; Stice et al., 2007). In fact, didactic formats for administration

of prevention programs, without involving youth in interactive and critical discussions, is less likely to be associated with positive outcome. In addition, "one shot" interventions that typically focus on clinical eating disorders as very risky behavior do not lead to the prevention of eating disorders. In this regard, although there is little evidence that eating disorders prevention is iatrogenic (Stice et al., 2007), providing students with information about potentially dangerous methods of weight control should be approached very cautiously (O'Dea, 2002). Finally, programs that target individual students without transforming the social environment, at least at the peer level, are unlikely to produce sustainable positive outcomes (Levine & Smolak, 2006).

## Recommended Best Practices

With regard to *best practices in treatment* of adolescents, we recommend that clinicians:

- Assess and treat eating disorders using an interdisciplinary team approach.
- Integrate individual therapy, nutritional counseling, and established forms of family-based therapy; families do not cause eating disorders, but they play a critical role in sustained recovery.
- Use pharmacotherapy with great caution, particularly for adolescents with anorexia nervosa.
- Be authoritative: well-informed, patient, and optimistic. Although prognosis for eating disorders in adolescence is better than it is in adults, complete and sustainable recovery may require 5–7 years.

With regard to *best practices in prevention*, we recommend that:

- Psychoeducation should help adolescents to think critically about ways in which biology, psychology, and culture interact to influence a spectrum of issues pertaining to gender, body image, embodiment, eating, and weight management.
- Programs should be individually tailored to combine a general, research-based understanding of risk and protective factors with a careful contextual analysis of the particular factors operating in the lives of adolescents and other stakeholders in that program.
- Programs should eschew didactic lessons in favor of a variety of techniques that engage adolescents and adults (e.g., teachers and mentors) in relational dialogues, consciousness-raising, life skill development, a critical analysis of cultural pressures, activism, and advocacy.
- Programs should adopt an ecological perspective designed to clarify and then change unhealthy media, norms, values, practices, and other aspects of the environment so as to promote healthier attitudes and behaviors in regard to gender, weight, shape, eating, activity, etc.
- Selective and targeted programs for high-risk and protosymptomatic adolescents should use dissonance-based programs.

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# Autism

Peter W. Dowrick

## Introduction

Autism is an important worldwide concern, with the reported incidence growing at a remarkable rate. On 12 January 2013, Miss Montana Alexis Wineman finished in the top 16 of the Miss America competition, in which she was noted as the first woman with autism ever to compete. Is more than one person in a hundred really autistic? If the present rate of increasing incidence were to continue, more than one child in ten would be receiving services for autism within 45 years (unlikely, but see below). The complexity of autism as a disability and/or an asset continues to grow. Its tendency to cause distress with low probability of solution is another inconvenient truth.

Whatever the reasons for increased identification, the realities are overstretched resources and alarming costs. Autism is a disorder of the brain, difficult to live with, which pays no heed to the social or economic context. Hence, many imaginative, some ludicrous, approaches to prevention and intervention have been tried, pursued, and even celebrated with variable attention to scientific evaluation. The occurrence of autism is probably unaffected by race and ethnicity. Early intervention is clearly important, but expense and difficulties in intervention leave very large numbers of adolescents and adults with behavior problems deriving from autistic symptoms. Adolescents with or without autism learn differently from younger children, but this is seldom taken into account in the development of promising practices.

## Definitions

*Autism* is not like many brain disorders, such as *Down syndrome*, for example, which is determined by the elision of a specific chromosome. Rather it is a result of many, small brain differences, not all present in any one individual, so that we end up with a "definition" (diagnosis) based on a list of behaviors thought to be manifestations of the brain differences. Autism is a neural developmental disorder distinguished by odd or poor social-communication skills and restricted, repetitive behavior. The condition-potential, though inborn, is generally not evident until 1–3 years of age, and often not accurately recognized till age 5–8.

In this chapter, I use the term "autism" in the classic sense, which includes some intellectual disability and language delay, or in the broad

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sense of a "spectrum," as context will make clear. Increasingly (and unfortunately, in my opinion—but see DSM-5 below) autism can refer to the *autism spectrum* or autism spectrum disorders (*ASD*), which include Asperger syndrome and other "pervasive developmental disorders," to which I also give attention. *Asperger syndrome* (or simply *Asperger's*) is a milder variant with normal intelligence and language milestones, though often including peculiarities of speech. *Pervasive developmental disorders*, *not otherwise specified* (*PDD-NOS*) is diagnosed when the criteria for classic autism and Asperger's are not quite met, and other disorders have been ruled out (e.g., Rhett's syndrome).

There have been but a few descriptions of children or adults with autistic features over previous centuries. The most famous is the "wild boy of Aveyron" in southern France, plucked from the forest in early adolescence in 1799. His behavior was consistent with autism and social isolation: shifting, expressionless gaze; no imitation nor speech sounds; rocking motions; mostly showing seriousness but with outbursts of laughter. He was taken to Paris about the time Jean Itard became Chief Physician at the National Institution for Deaf Mutes. Itard saw potential in "Victor," as he named him, and developed an intensive program and the first *individualized education plan* including behavioral goals for socialization and the development of language and imitation. Over 5 years, Victor did not learn to speak, but he did become affectionate, he loved learning, and he communicated nonverbally and with written words and symbols (Wolff, 2004).

The term "autismus" (German) was coined by Swiss psychiatrist Eugen Beuler in 1910, in describing the withdrawal into oneself occurring in schizophrenia. Hans Asperger used the term in a 1938 lecture in Vienna, published the same year, and in his journal article of 1944 (Asperger, 1938; 1944). Independently, Leo Kanner at John Hopkins University introduced *early infantile autism* in the now classic 1943 paper describing 11 children (Kanner, 1943). Reading no German, Kanner did not acknowledge Asperger—but then he cited no references, not even in his 1971

follow-up article (Kanner, 1971). His well-argued positions that autism is inborn and not related to schizophrenia were drowned out for about 30 years by contrary convictions that autism was caused by poor parenting and/or a type of schizophrenia (Wolff, 2004).

## Diagnosing Autism and ASD

Identification or diagnosis of autistic conditions is not made directly from the DSM (Diagnostic and Statistical Manual of mental disorders), but in most countries the criteria published in the DSM or the ICD (International Classification of Diseases; World Health Organization, 1990) are used as the authoritative reference for testing and assessment instruments in practice. For example, one popular assessment is the CARS (Childhood Autism Rating Scale; Schopler, Van Bourgondien, Wellman, & Love, 2010); it is highly useful for clinical diagnosis of autism, as it gives severity information that can guide clinical choices and indicate progress. Research in autism frequently uses either the ADI-R (Autism Diagnostic Interview-Revised; Lord, Storoschuk, Rutter, & Pickles, 1993) or the ADOS (Autism Diagnostic Observation Schedule; Lord et al., 2000). These instruments, based on parent or informant interviews and/or behavioral observation of the individual being tested, emphasize measurement. By contrast, the DSM and ICD are categorical and conceptual. For example, autism is defined in the DSM-IV-TR as showing a minimum number of symptoms in the main categories of social-communication impairment and restricted/repetitive behavior (American Psychiatric Association, 2000). Assessment tests, on the other hand, may have a series of yes/no questions (e.g., does the child like to do the same thing over and over again, in the same way …), which are scored, and "autism" is determined by a cutoff. In the USA, DSM-5 replaced DSM-IV-TR in May 2013. ICD-10 was also set to replace its predecessor (version 9) in 2013, but has been postponed until September 2014, because of its divergence from the DSM. The US Department

of Health and Human Services requires ICD codes to be used for some insurance purposes and had often accepted DSM-IV-TR because of its similarity with ICD-9. Health professionals apparently need a year to make the adjustment to ICD-10.

## Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5)

The DSM has had a large responsibility for increases in the recognized prevalence, the understanding, and the development of clinical and educational services for autism. In 1980, the DSM-III introduced *infantile autism* within the category of pervasive developmental disorder, distinct from *childhood schizophrenia*. It required a set of symptoms to be met in its entirety. The revision in 1987 required only a subset of the criteria to be identified, thus broadening the scope. Estimated prevalence was reckoned at about 5 per 10,000 children, and services improved from increased attention to the specific features of autism. In 1994 (and text revision in 2000), the DSM-IV introduced Asperger's and broadened the scope of PDD to include a greater range of intellectual and language development (American Psychiatric Association, 1980, 1987, 1994, 2000). Reported prevalence has since steadily increased to 1 per 100 in many countries, notably those countries with high levels of intervention and support (e.g., Baron-Cohen et al., 2009). Positive developments are also notable in research, and service and professional development.

DSM-5 presents a single diagnostic category of ASD, with different levels of severity (American Psychiatric Association, 2013). This is in contrast to DSM-IV, which distinguishes among the three types of autism—and bundles all three plus Rett syndrome and child disintegrative disorder in the overall PDD category. Some research indicates 90 % of children diagnosed with autism in 2011 would meet the DSM-V criteria (e.g., Huerta, Bishop, Duncan, Hus, & Lord, 2012), whereas other research indicates 60 % or

fewer (e.g., McPartland, Reichow, & Volkmar, 2012). Thus either many children who may need autism services will not receive them, and/or many providers will ignore the new DSM in favor of the earlier edition. Diagnosis is most often made between the ages of 2 and 8 years, so adolescents and adults will be largely unaffected for 5–10 years or so, by which time another revision will be under debate. Anyone with an existing diagnosis will not be reclassified because of changing criteria, unless they have a dramatic change in symptoms, which will remain rare until there is a treatment that substantially affects the underlying neurology.

## Prevalence Rates

As indicated, prevalence appears to increase every year, and has done for at least 20 years. Current estimates based on special education services in US and UK, show more than 1 in 100 (ASD), in contrast to 4 in 10,000 in 1978 (classic autism only) (Maenner & Durkin, 2010; Rutter, 1978). Field-based studies in some other countries show comparable estimates. For example, a study in Goyang City, near Seoul South Korea, claims 2.6 % (Kim et al., 2011); Parner et al. (2011) reported .7 % for Denmark and .5 % for Western Australia. As long ago as 1999, Kadesjö, Gillberg, and Hagberg (1999) found evidence for 1 % in Sweden, using Gillberg-devised criteria, anticipating ASD. In a 2009 review of 43 epidemiological studies, Fombonne (2009) remarked that widespread evidence for a rate of 7 per 1,000 at that time, made PDD "one of the most frequent childhood neurological disorders" (p. 591).

The graph in Fig. 17.1 is based on data from US "Child Counts" of children with autism served under the Individuals with Disabilities Education Act and US census estimates of the general population—cf. Fig. 17.2 attributed to "Eubulides" in Wikipedia (Epidemiology of Autism, 2013). Visual appreciation of the bar graph data struck me as likely to fit a parabola, for verification of which I thank my colleague Paul Corballis. I measured each bar of the graph
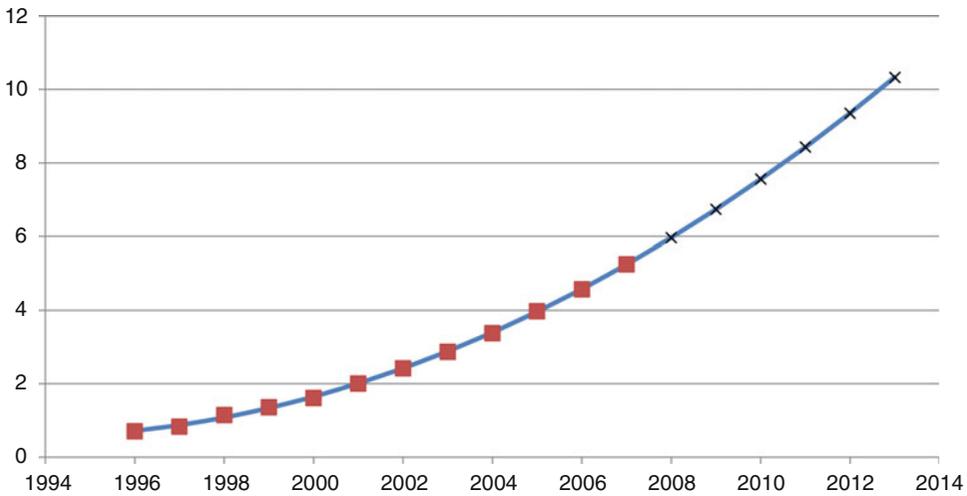
**Fig. 17.1** Curve fitted to data in Fig. 17.2, extended to 2013 (children with autism per 1,000 of 6–17-year-olds in Wisconsin Public Schools). *Note*: Polynomial of $y=0.0256x^2+0.1304x+0.7122$ fits the 1996–2007 data (*solid squares*) remarkably well ($R^2=0.9996$). Extended to the year 2013 gives an incidence of 1.03 per 100, matching current data. Extended to 2191, the incidence would be 99.96 per 100. Figure created by the author, copyright © 2013 Peter W. Dowrick
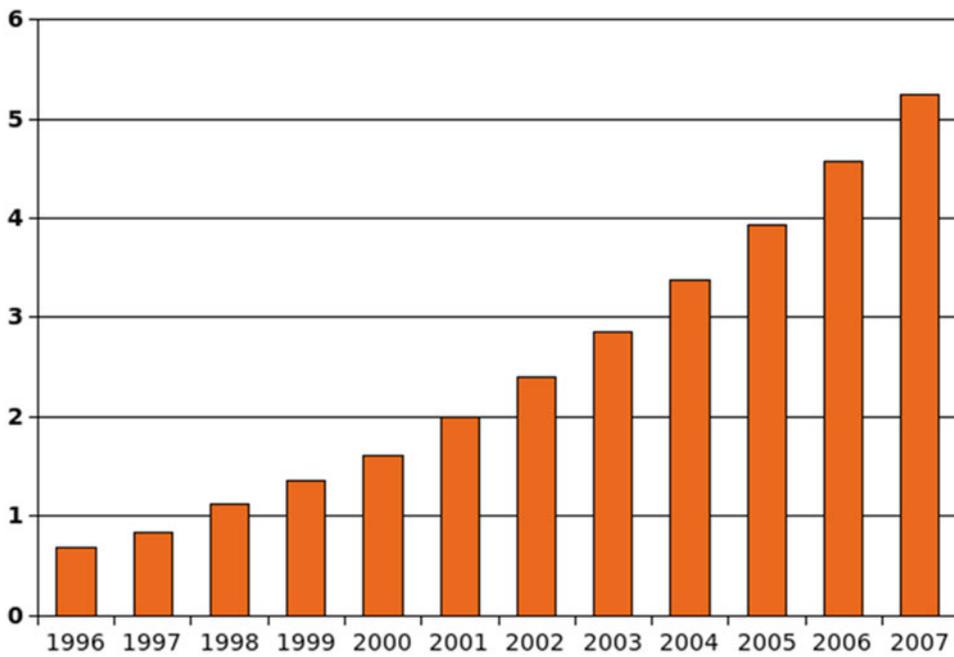


**Fig. 17.2** Incidence of autism per 1,000 of 6–17-year-olds, 1996–2007. *Note*: Attributed to "Eubulides" in Wikipedia (13 October 2008), based on US IDEA Child Counts and census data in Wisconsin public schools, special education classifications. Permission is freely granted to reproduce this image under the terms of the GNU Free Documentation License. Retrieved on February 15, 2013 from https://en.wikipedia.org/wiki/File:US-autism-6-17-1996-2007.png

in fractions of a millimeter, from which he produced a polynomial with almost perfect fit (see Fig. 17.1). Extending the graph based on 1996–2007 data to 2013 confirms the current incidence of 1.03 per 100; extending the data to 2191, the incidence reaches 99.96 per 100. That implies *everyone* would be labeled autistic or PDD within 170 years from this publication (!), which in turn implies this curve is unlikely to last. Indications of a ceiling are already discernible from a closer look at regional data. Maenner and Durkin (2010) examined school districts in Wisconsin and found great variability in autism prevalence in 2002 (.5–11 per 1,000) narrowing to half the range (7–12 per 1,000) by 2008. Almost without exception, the growth rate was inversely proportional to the initial frequency, such that the highest rate increased by 1.0 per 1,000 and the lowest by 6.5 per 1,000. In other words, where rates are already about 1 in 100, there is little change. Meanwhile other areas are rapidly catching up—to suggest that there have been great differences in the willingness to identify autism, with the most conservative steadily becoming less so. Thus the prevalence growth curve, far from getting ever steeper as in Fig. 17.1, could flatten and asymptote at about 1.5/100, perhaps? If DSM-V restricts the classification of autism, as some predict, the rate will be lower. Even so, the need for resources and far better prevention and interventions, remains pressing among what is now the most prevalent of all behavioral disorders in childhood and adolescence.

ASD has comorbidity rates generally reported lower than for those of other psychiatric disorders, as reported in surveys of established diagnoses (e.g., Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). This finding may be because ASD overshadows other diagnoses and may even preclude them, as argued by Simonoff et al. (2008). They sampled 112 10–14-year-old London-based children with ASD diagnoses for comprehensive assessment. They found a high rate of comorbidity (70 %) in which social anxiety disorder, oppositional defiant disorder, and ADHD were each identified at a rate of a little over 28 %.

## Biological and Genetic Factors

It is curious that a disorder should be recognized as unitary, when it is indicated not by biology but by variable clusters of characteristic behaviors with a predicted potential. Curious that is, when it is so completely agreed to be of neurological origins. If your older brother has autism, you are 25 times as likely to have the same symptoms by your second birthday, indicating a strong genetic connection. But the effect is from numerous chromosome deletions, inversions, and duplications, etc., each with a small impact; no limited group of genetic variations makes any major contribution to any ASD. Nonetheless, research is pointing to increasing accountability from genetic factors, some of which may be reversible in adulthood (Geschwind, 2009). It is also agreed that autism and the ASD are expressions of genetics that are environmentally influenced, without good evidence for what the interactions are. Unfortunately, many environmental "causes" have been put forward with wide media coverage, from pesticides to vaccines, only to be found to be unsupported or even fraudulent (Godlee, Smith, & Marcovitch, 2011).

There are other biological conditions associated with autism. The brain and cranium usually grow abnormally fast in the first year, after which the growth rate reverses and symptoms worsen (Hazlett et al., 2011). Other brain differences include excess neurons and over connectivity; synaptic dysfunction; excitation-inhibition imbalances; reduced size of the corpus callosum, cerebellar connections, and frontal-temporal connectivity. There are no known, specific relationships among these conditions and autistic symptoms. There could be some functionally important structural brain differences, and some mere by-products of the genetic conditions of ASD.

There is considerable interest in the likelihood that the *mirror neuron system* (MNS) is deficient in ASD. This system is normally active during motor functions when either performed *or* observed (I scratch my nose *or* see you scratch your nose). Research in the last decade has

increasingly implicated mirror neurons in cognitive activities, too—for example, recognition of facial expressions or spoken language. Not only is the act observed, but also the intent. Failure of the MNS in ASD has several times been cited as responsible for the autistic lack of ability to understand another person's thoughts ("theories of mind") and feelings (empathy). There are even greater implications for prevention and intervention from the evidence that the MNS may function normally in autism (at least for youth with normal-range IQ) when observing video images of oneself but not of images of strangers (see Ramachandran, 2012).

## Risk and Resiliency

Very little is known to influence the risk of autistic development. Resiliency can be influenced in the sense of reducing the magnitude and impact of distressing behavior. Where procedures can have a significant effect, they are discussed below in the "Prevention of Behaviral Disorders in Autism" section.

## Individual Factors

Increased risk for neural development leading to autism has been attributed to the age of parents. Low birth weight may also add to the risk. It is a reasonable speculation that genetic liabilities could lead to risk during later-in-life marriage or childbearing, or age could add to the genetic liability. Studies show simply that disproportionate numbers of parents older than 35 have children with autism. In a Danish study of nearly 10,000 autistic children, not only was parental age associated with greater risk of ASD, but a sibling analysis ruled out accounting for autism by the family genetic and environmental factors (Parner et al., 2012).

There is also the consideration of risk factors caused by, rather than leading to, autism. For example, high rates of bullying victimization (four times the national av.) have been reported in adolescents with ASD, although significantly less

than for adolescents with intellectual disability, on average. Whatever the risk factor, preventive interventions need to target key deficits of social communication and the common comorbid condition of attention-deficit/hyperactivity disorder (e.g., see Sterzing, Shattuck, Narendorf, Wagner, & Cooper, 2012). Another common, accompanying condition of autism in adolescence is epilepsy (Tuchman & Rapin, 2002).

## Family Factors

As noted, having a family member with autistic symptoms, and having a parent over 35 years of age, add to the risk of autism somewhat. Other family or community interactions can considerably affect the severity or otherwise of symptoms. My colleagues and I have found it advantageous to include the family members in interventions; for example, teaching a child to redirect a younger brother with autism who interferes with solitary play, at the same time teaching this young child to accept the redirection (unpublished case report, Kitami & Dowrick, 2010).

Early intervention for social communication and imitation skills is so intensive it can have a huge impact on the family. It typically includes 20–40 h per week of 1–1 interactions, and may involve several family members and additional therapists or aides. Siblings and parents can suffer neglect, to the point of family breakdown. There have been claims of increased rates of parental depression and divorce (see Olivier & Ah Hing, 2009), but recent articles dispute these claims as exaggerated (Baeza-Velasco, Michelon, Rattaz, Pernon, & Baghdadli, 2013). There is also evidence for some families growing stronger throughout the adjustment to autism (e.g., Bayat, 2007).

## Social and Community Factors

There is no evidence for social and community factors influencing the occurrence of autism. However, attitudes and responses towards autistic behavior greatly influence the participation of families in society. For example, I met many

families in Alaska, through the development of services promoted by the Center for Human Development, and the support and advocacy group Parents of Autistic Children. Difficulty with air travel was frequently in the conversations, because many parts of the state are accessible only by airplanes, including the capital Juneau, the scene every year of a march for and by people with developmental disabilities. And visiting other states always involves long hours in restricted and unfamiliar environments. Many parents told stories of being grounded for years in the 1970s, and how travel became increasingly more possible as tolerance and helpfulness improved along with general accessibility.

In the *Australian Autism Handbook*, Benison O'Reilly and Seana Smith (2008; both parents of children with autism) devote a chapter to *Finding the right school*. Another chapter describes a needed journey *From grief to self-care*. While most of the book is devoted to interventions and resources, the authors give considerable attention to choosing friends, medical care, diet, exercise, music, TV and electronic game access, and other environmental factors in living with autism.

## Evidence-Based Interventions for Autism

There are no interventions that reliably, or even frequently, eliminate all the symptoms of autism. There are some interventions designed to ameliorate the major characteristics that lead to an ASD diagnosis: social communication and language skills, and restrictive or repetitive behaviors. These are discussed below in the section on "Prevention of Behavioral Disorders in Autism". The difficulty in establishing therapies that work, more than just a little, is so great that there are numerous descriptions publicized. Therefore, only a judicious selection will be described in this chapter.

### What Works

*Communication skills*: Programs specifically for teaching speech have little impact: they simply

do not work with classic autism, and it is not an issue with high functioning adolescents. Thus interventions have focused on communication skills rather than language production. In the prevention-that-works section below, I describe early intervention with discrete trial training, which includes some emphasis on communication. I also describe video modeling for communication and other skills. In this section, the focus is on more specific approaches. One example of social skills training with 13–17 year olds, mostly high functioning, is reported by Laugeson, Frankel, Mogil, and Dillon (2009). They taught conversation, hosting get-togethers, and handling socially awkward situations (e.g., teasing) in 12 90-min group sessions. The program, following a detailed protocol (manual), produced improved social skills as reported by parents, compared with a wait-listed control group. Unfortunately, direct observations of social skills were not systematically measured. The same researchers have done more convincing studies with younger children (7–10 year olds; Frankel et al., 2010). Whether interventions are developed for specific or general (preventive) purposes, the most effective are those that promote learning from the future rather than the past (Dowrick, 2012a, 2012b). That is, skills can be learned that are categorically different (superior) but built from component behaviors in the repertoire, rather than tweaking old skills to make marginal improvements.

Sign language may be more easily acquired than oral speech, for various reasons. There are persuasive arguments that human language evolved through signs and gestures (Corballis, 2003). Infants can learn sign language months earlier than speech. Both spoken and gestural language involve Broca's and Wernicke's areas in the brain, where there may be interconnectivity deficits in autism. Whatever the reason, higher levels of *communication* may be achieved through sign language—provided there are sufficient sign language speakers in the environment, which unfortunately is seldom the case.

For children and adolescents with low verbal or nonverbal skills, augmentative communication frequently offers possibilities. It is

common in schools to teach the use of picture sets. Most widely used is the Picture Exchange Communication System (PECS; Bondy & Frost, 2002), which comes with a highly specific operant-based training protocol. Several efficacy reviews have been published, including Flippin, Reszka, and Watson (2010). Training time and volume are highly variable, from 2 to 3 weeks (with, say, 250 brief trials over many hours; Charlop-Christy, Carpenter, Le, LeBlanc, & Kellet, 2002) up to 2 years with untold numbers of trials (Schwartz, Garfinkle, & Bauer, 1998). My colleagues and I at the University of Auckland conducted a study of a PECS-derived system to see if training could be achieved more rapidly and efficiently using video feedforward (self modeling; VSM). In a multiple baseline intervention, two children with autism and one adult with Down syndrome were taught to initiate requests, etc. (2–4 levels of PECS) with VSM. That is, very short videos were filmed and edited to show situations, responses with cards, and outcomes (e.g., constructive response by an adult) at an advanced level; that is, a future level of skill. These vignettes were viewed by the participant, usually three times, until the new skill was spontaneously demonstrated. In all, it took 4–10 viewings spaced over several days to gain the next level of PECS. Previously, participants had failed to learn even one level of PECS, with up to 2 years of regular training by agency personnel. See Smith, Hand, and Dowrick (2014).

## What Might Work

Incidental teaching, used with young children, does work. There is no reason not to use it with adolescents, but there are such few studies. A recent exception (Hsing, Wilder, & Abellon, 2011) showed effectiveness with three children with autism, ages 8–10 years, almost adolescent. Incidental teaching involves taking opportunities to teach something about an object (color, shape, position, etc.) with which the child is engaged. For example, "Your iPad has several colors on the screen, here: *orange* and *purple*" or "… your iPad is *on top of* the cushion." Hsing et al. taught caregivers incidental teaching methods, who in

turn used these methods to teach the children skills, such as singing or selection of picture cards to ask for desired snacks.

Other behavioral methods that do work for children may work well with adolescents, but studies are few, as confirmed in a review by Walton and Ingersoll (2013). Methods include "pivotal response training" (see Koegel & Koegel, 2006; Handleman & Harris, 2006). In one promising study, Koegel et al. (2012) used perseverative interests of three boys, aged 11–14, as a type of preferred activity, to promote social interactions with typically developing peers.

Other "classic" behavior modification methods do work with autism and intellectual disabilities, for serious self-injury, and extremely disruptive or antisocial behavior. But these methods require precise, expert intervention and controlled environments, and are thus effective only in inpatient facilities, such as biobehavioral units of children's rehabilitation hospitals. These procedures include a careful functional analysis to determine patterns of antecedents, responses, and consequences. It could, for example, indicate that head-banging typically provides an escape from the demands of an unwanted social interaction. From these efforts, a therapeutic procedure is planned, which must be followed consistently by everyone in the child's environment. The best of these programs frequently have outcomes positive enough for the child to go home to a better quality of life, although with some chance of relapse (Lalli, Mace, Wohn, & Livezey, 1995).

The Makaton Language Programme was designed in the 1980s with a hierarchical "core" vocabulary (over 400 concepts) communicated through a combination of speech, signs, and symbols. The program moves in stages, beginning with basic needs (e.g., "sit," "drink"), through to more complex and abstract vocabulary such as time and emotions. Potentially, Makaton can support speaking and writing with thousands of advanced resource concepts. Research showed promise in the 1990s (Grove & Walker, 1990). Skeptics may ask, if it might work, why is it not now widely demonstrated? Early research has not been systematically followed up (but see small study of eight 9–12 year olds from Mumbai, by Lal, 2010).

Many other programs have been reported to show some benefits (often hard earned) for specific issues. Occupational therapy is used for gross and fine motor skills, and balance, but more with children than adolescents with autism (Tomchek & Case-Smith, 2009). Various physical approaches are practiced in attempts to reduce repetitive self-stimulation and injurious behavior, from music to martial arts (e.g., Bahrami, Movahedi, Marandi, & Abedi, 2012). Some kinds of sport improve health and quality of life, if not making large effects on major features of the autistic disorder. For example, some studies have indicated that individual sport skills can be learned and engaged in with benefits to health and some reduction of maladaptive and repetitive behaviors (e.g., swimming; Pan, 2010—but note, participants were 6–9-year-olds).

A general *strategy* that might work, versus procedures specific to target behaviors, is to incorporate technology. Keyboards and keypads hold promise. It has been claimed in media reports that there is 100 % saturation of iPads by the autism community in New Zealand. Certainly the rate of use of screen and keyboard devices is very high wherever the economy makes it possible, indicating the potential to build educational and clinical interventions. Recent claims include the use of robots as pets, companions, and facilitators. This approach is new, requiring the collaboration of computer scientists or engineers and clinical or educational psychologists. Initial basic questions include, what should it look like, an animal or a machine? How big? Mobile or fixed to a table? For what purposes: social interactions and analysis, even diagnosis? (See Scassellati, Admoni, & Mataric, 2012).

## What Does Not Work

There are too many to list. A high profile example is *sensory integration therapy*, for which 25 studies were recently reviewed by Lang et al. (2012). They reported that 14 studies showed no benefits, and 8 mixed results. The three studies indicating effectiveness "had serious methodological flaws" (p. 1004).

Perhaps the most notorious in the early 1990s was "facilitated communication." This program promised startling outcomes for classic autism, spreading rapidly across North America. Advocates proposed that normal intelligence and social sensitivity could be released by facilitating a person's communication by steadying his or her hands at a keyboard or letter board. There were dozens of reports, including public demonstrations, from anecdotes of their inner lives to dizzying poetry. However, researchers found anomalies; for example, children could answer (simple) questions only when the facilitator knew the answer. In a short time, numerous studies showed that properly controlled facilitated communication simply did not work. In 1994, the American Psychological Association issued a resolution that there was "no scientifically demonstrated support for its efficacy" (American Psychological Association, 2003 webpage).

For matters of vaccination, peptides, water supplies, etc., see section "What Does Not Work" under section "Prevention" below.

## Psychopharmacology and Autism

Psychotropic medications are widely used by adolescents with autism spectrum disorders—and increasingly so. In a recent study over a period of 4.5 years in Massachusetts and Wisconsin:

- 24 % increasing to 30 % took antipsychotic drugs (risperidone and others)
- 29 % increasing to 42 % took antidepressants (fluoxetine/Prozac and many others)
- 8 % increasing to 11 % took anxiety pills
- 16 % reducing to 10 % took stimulants (e.g., methylphenidate/Ritalin)
- 21 % increasing to 25 % other psychoactive medications

See Esbensen, Greenberg, Seltzer, and Aman (2009).

In the total group, adults and adolescents took an average of 1.6 medications, increasing to 2.4 medications less than 5 years later. Medications are sometimes prescribed for core features of ASD, but are very seldom effective; they are more often prescribed with positive effect for important

**Table 17.1** Commonly occurring side effects to medications

| Medication | Prescribed for | Side effects include |
|---|---|---|
| (a) Selective serotonin reuptake inhibitors (SSRI; e.g., fluoxetine) | Tantrums, aggression, self-injurious, repetitive, or self-stimulatory behavior<br>Irritability, obsessive compulsive symptoms<br>Anxiety | Nausea, sedation, sleep disturbances, agitation |
| (b) Atypical antipsychotics (e.g., risperidone) | Tantrums, aggression, self-injurious, repetitive, or self-stimulatory behavior<br>Irritability, obsessive compulsive symptoms<br>Hyperactivity, impulsivity, inattention | Weight gain, sedation or tremors |
| (c) Mood stabilizers (e.g., valproate) | Tantrums, aggression, self-injurious, repetitive, or self-stimulatory behavior<br>Irritability, obsessive compulsive symptoms | Changes in appetite and bowel movements, dizziness, drowsiness or trouble sleeping; damage to liver or pancreas |
| (d) Stimulants (e.g., methylphenidate) | Hyperactivity, impulsivity, inattention | Irritability, loss of appetite, poor sleep |
| (e) Alpha-2 adrenergic agonists (e.g., clonidine) | Hyperactivity, impulsivity, inattention; Sleep dysfunction | Tremors, hypertension, or hypotension |
| (f) NMDA antagonists (e.g., amantadine; evidence weak) | Hyperactivity, impulsivity, inattention | Agitation, insomnia, exacerbates seizures |
| (g) Melatonin | Sleep dysfunction | Mild daytime sleepiness, dizziness, or headaches |
| (h) Antihistamines (evidence weak, but very low risk) | Sleep dysfunction | Negligible |

*Note*: Table created by the author, Peter W. Dowrick (2013)

associated behaviors (Myers, 2007). Note that in Esbensen et al.'s (2009) sample, more than two-thirds had another diagnosis (excluding intellectual disability) in mental health (most frequently, anxiety and/or obsessive compulsive disorder) and/or developmental disability (far most frequently, epilepsy). Table 17.1 lists frequently occurring, associated problem behaviors, medications for which there are four or more good quality published studies with positive outcomes, and their most likely side effects, which are frequently significant and require monitoring.

For more information, see Esbensen et al. (2009), Elvins and Green (2010), Hollway and Aman (2011), McCracken et al. (2002), and Myers (2007).

## Prevention of Behavioral Disorders in Autism

Some autism may be "completely" prevented by the extreme measures of not giving birth to children when risk factors prevail (e.g., parents aged over 35; potential older sibling with autistic features). But these risks are too low for the majority of potential parents to consider. The best that prevention can offer at this time, is to attempt comprehensive promotion of adaptive skills that mask significant deficits that cannot currently be "cured."

## What Works

*Intensive Behavioral Intervention*, also referred to as Discrete Trial Training (DTT) or the Applied Behavior Analysis approach, from which it derives. This early intervention targets communication skills and imitation when they are virtually absent: ages 2–4 years, or later if not diagnosed early. When successful, it is reported to prevent serious autistic problems in later childhood and adolescence, with high probability of a better lifetime. A landmark study by Ivar Lovaas (1987) included 19 preschool children (av. 32 months, IQ 53) who received 40 h or more of behavior therapy per week for at least 2 years. Therapy was one on one with an adult, often a parent,

trained in highly precise operant procedures to shape attention to the adult, then to imitation of simple motor movements and words. The intervention was designed to progress through developmentally appropriate skills, beginning in those areas most affected by autism—social and communication skills and reduced repetitions and self-injury—and progressing to adaptive daily living if possible: play, self-care, even academics. Each skill was taught using "discrete trials" in three components: instruction to the child; child's response; feedback, in an attempt either to reinforce or to extinguish approximating responses or errors. This intervention was compared with another group of 19 children matched for age and almost for mental age (slightly lower) but nonrandomly assigned, who received less than 10 h per week of the intensive therapy.

Lovaas reported 9 of the 19 children in intensive treatment "recovered" in that they successfully completed first grade without any special supports and their IQ increased 30 points or more into the "normal" range. Only one child in the comparison group made comparable progress. All children were originally, independently diagnosed with autism (DSM-III-R). In a follow up study (McEachin, Smith, & Lovaas, 1993), the children were in early adolescence (av. 11.5 years). All treatment gains were maintained for IQ and regular classroom placement, and none of the control group improved.

Publicity from the results of these studies, claiming that virtually half of children with serious autism could be almost "cured" if treated early enough, intensively enough, and long enough completely changed the pressures on services in the USA and to some extent in many other countries. Families spent untold hours and dollars pursuing and delivering interventions that took over some people's lives for years. Although there is wide agreement among many professionals that DTT can frequently improve autistic symptoms, many dispute the size of the claims, and almost no one claims the likelihood of "cure." A number of partial replications have been published, most of them significantly flawed. Possibly the most positive study comes from colleagues at Lovaas's UCLA clinic (Smith, Groen,

& Wynne, 2000). Their study was of similar scope to Lovaas (1987) with some important differences. The experimental group had fewer hours of intervention (25/week or less, vs. 40 or more originally); in the comparison group, parents were trained to provide 5 h per week of DTT, plus these children received 10–15 h/week of independently provided special education services at school. About half the children in each group had autism diagnoses, half PDD-NOS—not a consideration in 1987. Once again, the experimental group had significantly better outcomes. However, the degrees of difference versus the 1987 study were considerable. IQ gains were halved (15 vs. 32 pts in treatment); only 2 of 15 experimental children, and one in the comparison group, achieved "recovered" status. Moreover, gains were conspicuously more for PDD-NOS than for classic autism; notably, almost *all* the gains in IQ were for children with PDD-NOS in intensive treatment (25 pts average).

*Video Modeling for Social, Communication, and Daily Living Skills*: By 2007, a sufficient number of good quality efficacy studies had been published for a meta-analysis. In a review of self, peer, and other video modeling, Bellini and Akullian (2007) claimed this general procedure to meet criteria for evidence-based practice (see Horner et al., 2005). A total of 23 single-subject studies with 73 children and adolescents, aged 3–20 years, addressed primarily social-communication skills (Buggey, Toombs, Gardener, & Cervetti, 1999; ages 7–12) and some daily living such as brushing one's teeth (and other, including washing, greeting, play; Charlop-Christy, Le, & Freeman, 2000), shaving, making a sandwich, and other (Lasater & Brady, 1995), and social aspects of shopping (Haring, Kennedy, Adams, & Pitts-Conway, 1987). These were analyzed on the basis of non overlapping data points from repeated measures during intervention vs. nonintervention phases (percent; PND). On average, PND was 80 %, range 29–100. Eighteen studies reported high levels of maintenance (PND 83 %) and seven studies, good generalization (PND 74 %). Overall, we can predict a solid prevention effect into adolescence. A number of

studies have been reported more recently, continuing the high rate of efficacy and broadening the range of skills targeted (e.g., Smith et al., 2014). Note, these procedures, when effective, are very rapid; video clips can be very short—those reviewed above were 30 s to 13.5 min, median 3 min.

## What Might Work

The system of intervention called *TEACCH* is singularly important as the first large scale attempt, in the 1960s, not only to dispute the prevailing notion that parents were responsible for autistic disorders, but to empower these parents to be teachers and co-therapists. "Treatment and Education of Autistic and related Communication-handicapped CHildren" has since become known by its curious acronym, TEACCH (Schopler, Brehm, Kinsbourne, & Reichler, 1971). In this program, caregivers or teachers are trained to provide individualized skills and anticipation training, following thorough assessment. These applications are often supplemental to behavioral early intervention provided in an agency, with studies showing parents and providers learn the teaching skills to good effect (e.g., Ozonoff & Cathcart, 1998). While Mesibov and Shea (2011) claim evidence-based practice, they note limitations in many studies. These methods are seldom extended to adolescents (for an [Italian] exception, see Panerai et al., 2009).

*SCERTS* (Social Communication, Emotional Regulation, and Transactional Support) is a promising recent example of attempts to deliver comprehensive intervention. While not yet demonstrated as effective, it is not new but rather built on a number of procedural elements, each with substantial evidence of efficacy in its own right. They claim "the SCERTS Model is informed by findings from published efficacy research studies (both group treatment and single case designs) in the fields of applied behavior analysis, developmental psychology, speech-language pathology, special education, neurodevelopmental science, occupational therapy, and mental health" (p. 1). See their summary and description available on

the web (Prizant, Wetherby, Rubin, & Laurent, 2010). Their first focus is for large scale studies of intensive early intervention in agency and school settings with 2–7 year olds. The only development with adolescents of which I am aware was a collaboration with Easter Seals, my colleagues, and me in Hawaii, to teach social skills for work and postsecondary settings to youth leaving high school. The primary procedure was video feedforward in which the youth made videos for themselves for different skills every week for 10 weeks in group training meetings (Dowrick, Kitami, & Rajouria, 2011).

Some programs for general health could qualify for "what might work" in prevention, because they can reduce the severity of the condition and improve the quality of family life. Promising research is reported in diet and fitness (see meta-analysis of 16 studies by Sowa & Meulenbroek, 2012). For example, Pitetti, Rendoff, Grover, and Beets (2007) describe an extensive treadmill walking program for adolescents with severe autism. In 9 months, participants were able to maintain the program, reduce weight, and increase exercise capacity and other health parameters.

## What Does Not Work

Avoiding vaccines, injecting secretin, and following other falsely claimed remedies for autism, naturally do not prevent it. From time to time, there is publicity about "causes," especially in places where there have been recent rapid increases in the rates of diagnosis. Vaccines for mumps is a notorious example (Godlee et al., 2011), as noted above. Another is secretin, intravenously administered to assist diagnostic endoscopies. A media story of three autistic children whose social and language skills reportedly improved, resulted in so many thousands of families requesting this treatment that there was a secretin shortage in the USA. Several studies claimed to indicate a neuropeptide effect on the brain. But Levy and Hyman (2005) note that many well-designed studies with data on hundreds of children have been published, indicating no treatment effects. In fact they claim secretin

has been the subject of "one of the largest series of controlled trials of intervention for any disorder of childhood" (p. 133)—all to confirm no effect. However, it is worth noting the power of the placebo for useless but medically backed treatments: parents look for and reinforce approximations to behavioral improvements that would otherwise be overlooked. Such gains are small and of modest comfort.

Given the incomplete genetic and familial evidence for a cause of autism, the search continues for what environmental factors contribute to or complete the expression of autism(s). The possibility of it being something in the drinking water is increasingly remote.

## Recommended Best Practice

- Very early diagnosis and intervention, before the age of 3 years if possible, is the best way to reduce the problems of autism in adolescence.
- Seek target behaviors that are key (pivotal) to the developmental stage of the individual; for example, planning near-future activities in adolescence.
- Seek target behaviors that are key to the defining conditions of autism: communication; repetitive or restrictive behavior, with a view to limiting their impact.
- Seek target behaviors and medical conditions that are key to individual-specific features of the disorder. These may include self-injury, self-care, seizures; anxiety, and hyperactivity.
- Create new positive (pivotal) behaviors and routines, incompatible with negative symptoms; include anything nondestructive for which the individual indicates a passion (from my clinical experience: a young man wanting to tie his own shoelaces; a teenager gaining comfort from seeing video of herself in her future school setting).
- Much of the above can be partially addressed by behavioral methods, including but not limited to contingency management.
- Methods that include learning from the future: especially self modeling; video modeling; picture prompts (photo activity schedules).

- Such methods can include complex novel skills, provided that they are composed of component behaviors within the learner's repertoire.
- Medications for comorbid behaviors, especially seizures, ADHD, anxiety, and depression.
- Medications should begin at a low dose (per kg of body weight), and be increased slowly with careful monitoring of effects and side effects.
- Other methods may be tried on a case-by-case basis (e.g., music, hugs, robots), monitored for palliative (vs. time-wasting) effects.

When contingency management is included, it must be based on the highest quality functional analysis and expertly consistent attention to context and consequences. When instruction or video modeling, etc. are used, accurate selection of component behaviors in context and presentation of valued outcomes are essential. For milder forms of autism, the prospects are good. For more serious forms, moderate changes can be achieved with hard and exacting work.

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# Autism Spectrum Disorder in Adolescents

# 18

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## Introduction

Autism spectrum disorder (ASD) is characterized by impaired social-communicative abilities, as well as restricted or repetitive behavior, unusual sensitivity to environmental stimuli, and in some cases severe challenging behavior (Heward, 2012). The presentation varies greatly depending on the person's chronological age, cognitive functioning, and developmental level as well as environmental conditions. For example, the same individual may show appropriate social skills in a highly structured environment in which the "social rules" can be anticipated but may show severely impaired social interactions under less predictable circumstances.

Treatments are generally (although not exclusively) associated with three broad theoretical or biological perspectives including behavioral, relationship-based, and biomedical or complimentary and alternative medicine (CAM). In a behavioral approach to ASD, excesses and defi-

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cits are considered the result of some type of skill deficit or relation between the person and their environment (Ghezzi, Williams, & Carr, 1999). Although genetic or biological factors are assumed to play a role in symptom presentation, these factors are either not the direct focus of treatment or are considered in relation to environmental conditions. For example, a behavior analyst may determine that an adolescent with ASD is "hand flapping" because this behavior provides physiological stimulation; a treatment might substitute a second behavior (e.g., flicking a bracelet) that is more appropriate for a teenager but still provides physiological stimulation. Interventions that may be formulated from a behavioral theoretical standpoint include Pivotal Response Treatments (PRT; Koegel & Koegel, 2006), Discrete Trial Training (DTT; Smith, 2001), Natural Environment Teaching (NET; McGee, Morrier, & Daly, 1999), and a number of additional treatment packages that incorporate the principles of applied behavior analysis (ABA). In general, interventions that have been formulated from a more behavioral theoretical perspective have the most robust scientific support (National Autism Center, 2009) and will serve as the primary focus of the sections on intervention and prevention in this chapter.

Relationship-based approaches are those that are based in social or developmental theoretical frameworks. These frameworks attribute the occurrence of behavioral excesses or deficits to

cognition or social-emotional well-being (Hall, 2013). Interventions derived from this theoretical perspective include Developmental Individual-Difference Relationship-Based (DIR; Greenspan & Weider, 1997), and Relationship Development Intervention (RDI; Gutstein, Burgess, & Montfort, 2007). In these interventions, the goal is to facilitate a stronger sense of self (i.e., DIR) or to build a stronger relationship with others (i.e., RDI), which directly impacts overall adaptive functioning of the individual. In contrast with interventions from a behavioral approach, relationship-based approaches have not been submitted to rigorous scientific investigation, but some may be classified as promising (Odom, Boyd, Hall, & Hume, 2010).

Biomedical, CAM, or pharmaceutical approaches are based on the premise autism and may result from a biological imbalance ranging from defective neural connections (e.g., sensory integration dysfunction) to the inability to absorb specific nutrients (e.g., gluten- and casein-free diet; GFCF diet), or that neurochemical imbalance (i.e., psychopharmacology) intervention may ameliorate some of the symptoms of ASD. Interventions that may be derived from this theoretical approach may include risperidone administration, mega-vitamin therapy, chelation, GFCF diets, or sensory-integration therapy. Given the extreme diversity of intervention with the biomedical and psychopharmacology approach, there is considerable variability in terms of empirical support. Previous reviews have demonstrated a range of outcomes from possibly negative (e.g., chelation and GFGC diet; Davis et al., 2013; Elder et al., 2006) to positive or tentatively positive results (e.g., drug regimens; Cohen et al., 2013).

## DSM-5 and Incidence/ Prevalence rates

### Prevalence Rates

Published prevalence rates typically target younger children or adults so adolescent data specific are not available. Approximately 1% of the population has ASD, and this estimate is similar for children and adults (Brugha et al., 2011; Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5); American Psychiatric Association, 2013). There is no reason to suspect the prevalence of ASD among adolescents is different for those reported for children or adults. The prevalence of ASD among children aged 6–17 in 2011–2012 was estimated at 1 in 50 (Blumberg et al., 2013), which represented an increase from 1 in 86 reported in 2007. The largest increase in prevalence during this period was among males and adolescents aged 14–17. This is likely an artifact of increased awareness of a homogeneous presentation among older individuals with ASD. Individuals first diagnosed in adolescence were more likely to display milder forms of ASD, with only 1% of those receiving a diagnoses falling in the severe range.

## DSM-5

The DSM-5 published by the American Psychiatric Association (2013) recently revised the classification criteria for ASD. Many professionals and parents saw the revisions as substantial and reported concerns about the potential for decreasing the number of individuals who would receive a diagnosis of ASD, potentially resulting in decreased eligibility for services (Taheri & Perry, 2012). The revisions were the result of extensive literature reviews and were prompted, in part, to concerns that accurately discriminating between individuals with one subtype of ASD from another was problematic (Lord & Jones, 2012; Ozonoff, 2012). The most substantial changes by the DSM classification criteria as outlined and discussed by Ozonoff (2012) and Lord and Jones (2012) are listed in Table 18.1. Despite the fact the revisions are based on an extensive review of the literature, considerable research is needed to further clarify terminology and to demonstrate the clinical usefulness of the revised classification criteria (Lord & Jones, 2012).

The DSM-5 also recognizes that symptoms presented early in development may not be as obvious during adolescence or adulthood.

**Table 18.1** Substantial changes to diagnostic criteria in the Diagnostic and Statistical Manual for Mental Disorders, Fifth Edition

| | |
|---|---|
| 1. | The DSM-5 uses the name Autism Spectrum Disorder instead of Pervasive Developmental Disorder |
| 2. | Autistic Disorder, Asperger Disorder, Childhood Disintegration Disorder and Pervasive Developmental Disorder Not Otherwise Specified within the DSM-IV (American Psychiatric Association, 2000) are now subsumed within the single classification of Autism Spectrum Disorder |
| 3. | The social, communication, and repetitive symptom domains are now collapsed into two primary domains, which include social-communication and repetitive behaviors |
| 4. | The development of a separate and new Social Communication disorder that recognizes that many individuals who present with social-communication problems often do not display repetitive and stereotyped behaviors has been added to the DSM-5 |

Adapted from Ozonoff (2012) and Lord and Jones (2012)

Adolescents may learn coping strategies resulting in milder or masked symptoms. This may be especially true for higher functioning adolescents or those who have received intensive treatments. Therefore, the complexity of making an initial differential diagnosis during adolescence requires an experienced clinician and a well-designed evaluation plan (Trammell, Wilczynski, Dale, & McIntosh, 2013).

## Biological/Genetic Factors

There is strong consensus that ASD is genetically linked (Abrahams & Geschwind, 2008; Lichtenstein, Carlstrom, Rastam, Gillberg, & Anckarsater, 2010), with heritability estimates ranging from 60% to 90% (Ronald & Hoekstra, 2011). Approximately 10–20% of children classified with ASD have a detectable genetic etiologic diagnosis (Myers et al., 2011). Several chromosomes and genetic loci have been implicated; however, no single gene has been specifically linked to ASDs (Bauer & Msall, 2011). Therefore, as Bauer and Msall (2011) noted, "In general, genetic causes of ASD are comprised of specific genetic syndromes, mutations, and de novo copy number variants (CNV) such as

microdeletions (i.e., Loss of a tiny piece that may be too small to see readily through a microscope from a chromosome.) or microduplications (i.e., A rare aberration of a chromosome or to gain a tiny piece of a chromosome)." Research has begun to focus on de novo mutations (i.e., A genetic mutation that neither parent possessed nor transmitted or a new genetic mutation.), with some researchers suggesting that the majority of ASDs are due to these new mutations (Zhao, Leotta, Kustanovich, Lajonchere, & Geschwind, 2007) or should at least be considered as significantly increasing the risk of an ASD (Neale et al., 2012). There is an increasing focus on gene-environmental correlates and how different types of environmental exposures and exogenous variables should be considered when conducting genetic research (Meek, Lemery-Chalfant, Jahromi, & Valiente, 2013). Although the interaction between environment and genetic factors has long been debated, Meek et al. (2013) noted that the bidirectional influences of environment and genes and their interactional influence on behavior are now widely accepted. The best available evidence, to date, suggests ASD is a complex multigenic disorder and it may involve hundreds of genetic mutations that will require a multidisciplinary research approach to ultimately understand the genetic basis of ASD (State & Levitt, 2011).

Adolescents who are currently diagnosed with an ASD may or may not have had genetic testing at time of initial diagnosis. Historically, the request for genetic testing has been inconsistent and dependent upon the healthcare professional making the initial diagnosis. For example, most psychologists will conduct extensive developmental histories and use a variety of measures when assessing individuals for a suspected ASD and refer to a physician if they suspect a heredity linkage or suspect the presence of another syndrome (e.g., Fragile X, Angelman syndrome, Cowden syndrome). Even among physicians the referral for genetic testing is often inconsistent and often dependent on available resources. With recent technological advancements and targeted genetic testing, clinicians should strongly consider requesting genetic evaluations as a means

of better understanding the genetic etiology of ASD (Bauer & Msall, 2011). Because many adolescents were diagnosed more than 10 years ago, adolescents, parents, and clinicians may want to consider having genetic evaluations conducted at this time because these methods may now produce more detailed information. However, it is important to weigh the costs along with the benefits and consequences of a definitive diagnosis. For example, despite advances in technology, only a small percentage of individuals classified with an ASD have detectable genetic etiologic diagnosis. A definitive diagnosis might be a relief to many parents and individuals with ASD and allow them to pursue specific resources. It also might streamline the evaluation and diagnostic process. However, parents might experience guilt from knowing they passed on a specific condition. Therefore, genetic counseling and other supports for the family and adolescent should be strongly considered (Bauer & Msall, 2011).

## Individual Factors Influencing Risk and Resiliency

The most established individual risk factor for ASD is sex; males are diagnosed with ASD at a higher rate than females (Yeargin-Allsopp et al., 2003). For the purposes of this chapter, we define resiliency as variables that are most associated with long-term positive outcomes. The best available evidence suggests children typically have more robust long-term outcomes when they receive an early diagnosis and participate in early intensive intervention (i.e., at least 2 years of individualized treatment that targets communication, social interaction, stereotypy, academic, and adaptive skills for a minimum of 25 h per week; Reichow, 2011). Data show that positive outcomes are retained over a significant period of time (Eikeseth, Smith, Jahr, & Eldevik, 2007); however, longitudinal data have been gathered through early adolescence and data on sustained positive outcomes are not available through adulthood. Given the complexity of social communicative demands in adolescents and adulthood, it is likely most adolescents with ASD will require a number of supports and involvement from significant others (Howlin, Goode, Hutton, & Rutter, 2004).

The absence of comorbid conditions and communication proficiency are also individual factors associated with more favorable long-term outcomes. Diagnosis of a comorbid disorder (e.g., affective disorders, schizophrenia, etc.) may complicate efforts for intervention and community involvement (Simonoff et al., 2008). Given efficacy studies rarely include comorbid conditions, the scientific literature tends to offer fewer answers for adolescents with a dual diagnosis including ASD. Adolescents with severe communication impairments have poorer outcomes because they are more likely to engage in maladaptive behaviors resulting in poorer access to preferred activities, which may include social isolation, perseverative speech, as well as challenging behavior. Although maladaptive behavior may present some obstacles, severe challenging behavior (e.g., aggression, self-injury, vocal aggression) results in further limits on both educational and social opportunities. However, remediation of the communication deficit typically increases the likelihood of community involvement and is associated with a higher quality of life (Horner, Carr, Strain, Todd, & Reed, 2002).

## Family Factors Influencing Risk and Resiliency

As noted previously, many genes have been implicated for the ASD population. In addition, preliminary data suggest parental factors influence the risk for ASD. Available evidence suggests there may a connection between ASD and pre- or peri-natal complications (Gardener, Spiegelman, & Buka, 2009) as well as advanced maternal and paternal age (Reichenberg et al., 2006; Sandin et al., 2012). Emerging evidence also suggests parents of children with ASD engage in higher rates of behaviors consistent with a broader autism phenotype, even when a formal diagnosis has not been rendered (Bernier, Gerdts, Munson, Dawson, & Estes, 2012). The

fact children are at increased risk for ASD when at least one parent is diagnosed with any psychiatric illness (Sullivan et al., 2012) further suggests a familial link.

The functioning of the family unit is likely a source of risk or resiliency for many adolescents with ASD. Despite reports of high divorce rates (e.g., 80%) among parents of individuals with ASD in popular media, this is not the case. Although no adolescent-specific data have been reported, the divorce rate among parents of individuals with ASD is no greater than the general population. However, parents of adolescents with ASD often demonstrate more indicators of parent-related stress (Abbeduto et al., 2004) or marital dissatisfaction (Rodrigue, Morgan, & Geffken, 1992) than parents of neurotypical children (i.e., individuals without ASD). Stress may be greater among parents of adolescents as they begin to worry about long-term planning and employment (Johnson, Frenn, Feetham, & Simpson, 2011).

## Social and Community Factors Influencing Risk and Resiliency

The ability to implement and maintain sound programming that is based on the best available evidence is one quality of the community that may impact risk and resiliency among adolescents. Implementation science for adolescents with ASD involves translating the best available evidence regarding treatment effectiveness into programming that is sustainable (Cook & Odom, 2013). These services should cover the adolescent years as well as the entire life span and address the unique social communicative skills required by adolescents with ASD so they can fully access their communities in meaningful ways (Gerhardt & Lanier, 2011). These supports may range from social activity groups to vocational supports (i.e., job coaches) and require well-trained practitioners to fully support and encourage active engagement in the community. Inadequate access to these services may result in poorer outcomes for people who could otherwise become contributing members of their communities.

## Evidence-Based Treatment Interventions for Autism Spectrum Disorders in Adolescents

### What Works

A literature review did not uncover treatments that met the criterion of three randomized clinical trials for adolescents with ASD.

### What Might Work

For the purpose of this chapter, "what might work" is defined as multiple well-controlled group and/or single-subject research design studies that have been conducted but the criterion of three randomized clinical trials has not been met. We briefly review treatments that have been used to ameliorate symptoms associated with ASD, symptoms that have already presented a problem for the adolescent with ASD. We reserve our discussion of interventions designed to *avoid* the occurrence of problems associated with ASD for the prevention section of this chapter. However, a combination of these consequent and antecedent interventions is typically required.

In this section, we have predominantly restricted our discussion to behaviorally based interventions because these consequent-based strategies have research support throughout the adolescent years (NAC, 2009). We have given particular emphasis to differential reinforcement (i.e., treatments that involve providing reinforcement for appropriate target behaviors but putting problem behaviors on extinction) and/or function-based treatments (i.e., interventions that tie the reason the adolescent engages in the behavior directly to the consequences that are delivered). However, we endeavored to provide exemplars that are unique to the adolescent population.

### Social Communication

Development and appropriate contextual use of social communication skills is essential for a successful transition from childhood to the adult years. In this section we discuss social

communication skill development in its own right as well as how it relates to employment and sexuality education.

*Social skills interventions*: Social skills instruction consists of interventions designed to build social competence among adolescents with ASD. Given the complicated nature of social relationships during the adolescent years, clinicians should assume they should address social skills for their clients with ASD even if they have been successful socially during their childhood years. Social skills instruction is often designed to break down tasks associated with social relationships (e.g., making friends, turn taking, conversation skills, and conflict management) into discrete steps adolescents with ASD can learn as replacement behaviors for the problematic social behaviors they exhibit (Cappadocia & Weiss, 2011). Social skills instruction may consist of social skills groups, Social Stories™ (Gray & Garand, 1993) and technology-based interventions. Instruction in social skills groups can improve the conversational skills of adolescents with ASD with both peers and family. Adolescents with ASD have learned to initiate and maintain appropriate conversations that are not limited to their highly restricted interests (Mackay, Knott, & Dunlop, 2007), as well as improve turn taking skills and socializing within a small group through social skills instruction (Cappadocia & Weiss, 2011).

*Social Stories™*: Social Stories™ are short stories that can prevent future occurrence of problem behaviors that have already been demonstrated by giving specific instruction in the appropriate replacement behavior (Gray & Garand, 1993; Kokina & Kern, 2010). Social Stories™ consist of text written at a person's functioning level and from their perspective. They are often paired with pictures to present information about how to appropriately behave in the context of a specific social situation or how to problem solve during a social interaction (Test, Richter, Knight, & Spooner, 2011). Adolescents with ASD who have been exposed to Social Stories™ that clearly state what the student "should do" (e.g., stand up when everyone else

does, keep objects out of mouth) have reduced their problem behaviors in school-based inclusion settings (Graetz, Mastropieri, & Scruggs, 2009) and increased appropriate conversation skills and mealtime behavior (Bledsoe, Myles, & Simpson, 2003; Rogers & Myles, 2001).

*Pivotal response treatment* (*PRT*): PRT targets "pivotal" behaviors that are likely to produce a watershed effect for other important skills that can be broadly applied across contexts. Pivotal behaviors include social communication, self-initiation, self-management, and responsiveness to multiple cues in the environment. PRT is effective with children with ASD (NAC, 2009), but evidence suggests this same intervention can be adapted to adolescents. School-aged adolescents have been taught to improve verbal (e.g., perseveration of topic) and non-verbal (e.g., mannerisms, voice volume) socially based (e.g., affect, eye gaze) behavior with others as a result of PRT (Koegel & Frea, 1993). Recently, the methods of PRT have been extended to older college-aged students (Koegel, Ashbaugh, Koegel, Detar, & Regester, 2013). By developing a multicomponent treatment that included (a) weekly social planning sessions that focused directly on student interests, and feedback regarding their participation in social activities and (b) organizational skills training, college-aged students with ASD increased the number of social events they attended per week and their quality of life improved. In addition, untargeted areas (e.g., non-structured social interactions, grade point averages, and employment) also improved. Although the target population was older college-aged students in their early twenties, there is strong reason to believe the challenges faced by adolescent college-aged students parallel those experienced by these participants. Yet, additional research is necessary to determine the parameters of effectiveness for adolescents during their college years.

*Employment*: Adolescents with ASD often experience more difficulty obtaining and maintaining employment than their typically developing counterparts (Howlin et al., 2004; Taylor & Seltzer, 2011). Obtaining employment during adolescence

should be a primary goal for adolescents with ASD (Wilczynski, Trammell, & Clarke, 2013), particularly because employment in high school is one of the best predictors for post-secondary employment (Carter, Austin, & Trainor, 2012). Deficits in social skills continue to be a major barrier to employment for adolescents with ASD (Orsmond, Krauss, & Seltzer, 2004). Training for adolescents with ASD to learn to communicate in a socially appropriate manner both during the interview process and once a job position has been secured is essential for adolescents with ASD. The direct instruction and practice of social skills can help individuals with ASD attain improved employment outcomes (see social skills instruction in this chapter). However, the vast majority of employment training programs rely heavily on antecedent interventions (see section "The Prevention of Autism Spectrum Disorders in Adolescents").

*Sexuality education*: Like their typically developing counterparts, adolescents with ASD are often interested in sexual relationships. Although there are clear physiological aspects of sexual relationships, the most complicated dimension of these relationships is socially based. The social aspects of sexual relationships involve reciprocity and the capacity to understand the consequences of one's actions based, in part, on their impact on others. Given deficits in perspective-taking often demonstrated in adolescents (and others) on the autism spectrum (Rehfeldt, Dillen, Ziomek, & Kowalchuk, 2007) and impairments in the quality of social relationships (DSM-5), sexuality education should not be ignored for this population.

Despite the obvious need for intervention, a dearth of treatment literature exists regarding sexual relationships among adolescents with ASD. In fact, sexuality education for adolescents with ASD more typically results from some perceived deviation from a typical expression of sexuality or risk of some type of sexual abuse or inappropriate behavior (e.g., public masturbation; Gerhardt & Lanier, 2011). Because building skills related to sexuality and sexual relationships (e.g., masturbate when you are alone in your bedroom) simply represents a different set of skills

than other behaviors (e.g., keep your electronic toys in your bedroom), many experts in sexuality education recommend using the same behaviorally based treatment strategies that are used to effectively teach adolescents with ASD any range of skills. In addition, many sexuality education curricula do not include technology-based sources of problems surrounding sexuality. For example, "sexting" (i.e., taking nude pictures of oneself and sending them to others or writing sexually explicit text messages) and online dating may result in abuse for the adolescent with ASD, either as perpetrator or victim (Tullis & Zangrillo, 2013). Clinicians are encouraged to consider the behaviorally based treatments that have successfully improved skill acquisition for adolescents with ASD (e.g., differential reinforcement, task analysis, shaping, and chaining, successive approximations; NAC, 2009).

## Stereotypic and Other Maladaptive Behaviors

One of the defining features of ASD is a restricted and repetitive nonfunctional pattern of behavior, interest, and activity. Often, this presents in the form of stereotypic behaviors (i.e., non-purposeful repetitive behavior). Stereotypic behaviors are often the subject of treatment because they interfere with skill acquisition as well as social engagement. Several treatments based on accurate identification of the function of behavior have been effective in reducing stereotypic behaviors. Although stereotypic behaviors may serve any function (purpose), most cases of stereotypy are assumed to involve automatic reinforcement (i.e., the reinforcer is directly controlled by the behavior; Vaughan & Michael, 1982). When behavior serves an automatic function, it can be extremely challenging to develop an effective treatment as compared to behavior that is maintained by social reinforcers. This is because it is easier to control various forms of attention (peer or adult, verbal or non-verbal) than it is to control reinforcers that are most typically associated with "feeling good." Although stereotypic behavior maintained by automatic reinforcement can be difficult to decrease because the adolescent controls the reinforcing properties of the behavior,

there are several treatments that have been successful in decreasing stereotypic behavior.

*Competing stimulus*: Introducing a competing stimulus can effectively decrease stereotypic behavior for some adolescents with ASD (Ahearn, Clark, DeBar, & Florentino, 2005). Competing items are those that increase engagement with an alternate item that is incompatible with stereotypy (i.e., such that the child cannot engage with the item and in stereotypic behavior at the same time). The most effective competing items are identified through a competing items assessment during which levels of item interaction and levels of stereotypy are recorded. Those items associated with high levels of engagement and low levels of stereotypy are considered effective competing items. However, clinicians must also consider the developmental and age appropriateness of alternative stimuli. An alternate stimulus that results in greater stigmatization is not likely to be appropriate for an adolescent with ASD if (a) a more developmentally and age-appropriate stimulus could produce a similar outcome or (b) the reduction in stereotypic behavior is not reduced to near zero levels.

Competing items can either match the sensory consequence of the stereotypic behavior or produce a different (unmatched) sensory consequence. Matched stimuli reduce stereotypic behavior and increase item interaction more effectively than unmatched stimuli (Ahearn et al., 2005). However, finding developmentally appropriate matched stimuli may be far easier when working with younger children than adolescents with ASD. For example, a Sit "n Spin®" would be considered a matched stimulus for a child who stands in the middle of the room and spins in circles, but it would be inappropriate for an adolescent. Instead, it might be necessary to teach an adolescent to spin as part of a complex dance routine that occurs only when music is playing.

*Removing reinforcing properties*: Response blocking reduces stereotypic behavior among adolescents with ASD by removing the reinforcing properties of the response specifically by eliminating the target behavior altogether (e.g.,

popping pimples; Lerman, Kelly, Vorndran, & Van Camp, 2003). Response blocking is also not always possible because stereotypic behavior may occur before the change agent (i.e., parent, teacher, etc.) can intervene. For this reason, many clinicians plan for response interruption instead of response blocking. However, the extent to which reinforcing properties are truly eliminated influences the likelihood the response blocking or interruption may be effective for adolescents with ASD. In a study of two adolescents with ASD, Kliebert, Tiger, and Toussaint (2011) demonstrated that high levels of treatment fidelity were associated with low levels of stereotypic behavior but when a therapist was not present or implementation was delayed, higher levels of repetitive behavior occurred. Sensory extinction is an alternate method of removing reinforcing properties; however, despite evidence with children and adults, research has yet to be conducted with adolescents with ASD.

*Other function-based treatments*: In addition to stereotypic behaviors, many adolescents diagnosed with ASD engage in other forms of maladaptive behavior (e.g., aggression, self-injury, property destruction, extreme emotional outbursts, etc.; Mazurek, Kanne, & Wodka, 2013). This may be particularly problematic for adolescents whose behaviors are influenced not only by immediate contingencies but also by changes in hormone levels. There is obviously no "treatment" for maturation, but this does not mean that effective treatments cannot be developed. Even in the presence of such biological factors, adolescents with ASD's behavior are still best explained by four functions (purposes) of behavior (Carr, 1994). Treatments that are clearly tied to the function of behavior (or function-based treatments) are most appropriate for all individuals with ASD, although the stimuli serving as reinforcers may vary for adolescents.

Functional communication training (FCT) is the most well-researched function-based treatment for reducing maladaptive behavior among adolescents with ASD (Hagopian, Kuhn, Long, & Rush, 2005). FCT begins with the identification of the function of the maladaptive behavior (i.e.,

attention, escape, tangible, automatic) as well as an appropriate method for requesting the items that correspond with that function. Clinicians use differential reinforcement to teach the adolescent with ASD to request a preferred item or activity. When the adolescent makes a request it is honored and, ideally, maladaptive behavior is put on extinction (i.e., it is no longer reinforced). For example, an adolescent that throws objects in his room when he is not allowed to play his music loudly may be taught to request loud music for short periods of time. He would not be allowed to listen to loud music outside times when he has appropriately requested loud music and been given permission to do so.

## What Doesn't Work

Many treatments have not yet been experimentally submitted to rigorous investigation and an exhaustive review of these treatments is beyond the scope of this chapter. Instead, we focus on treatments where there is some empirical evidence of harm. Additional research is necessary to verify the identified harmful effects, however.

### Facilitated Communication

Facilitated communication (FC) is a treatment that was very popular in the 1990s but is still considered useful by a subset of the autism community. FC involves a facilitator supporting the hand or arm of an individual with a severe disability in order to facilitate the use of a keyboard to communicate with others. Research has not been conducted specifically on the adolescent ASD population. However, many organizations have provided specific warnings against FCs use. It is believed to be a threat to the civil and human rights of individuals with severe communication impairments (American Psychological Association, 1994), primarily because it has been shown that facilitators unwittingly guided the hands of individuals with disabilities when typing their "messages." This is worrisome in all cases but particularly problematic when allegations of abuse are reported.

## Psychopharmacology and Autism Spectrum Disorders in Adolescents

The use of psychopharmacological treatments with adolescents who have not responded to educational, psychological, and behavioral interventions is fairly common (Floyd & McIntosh, 2009; Matson & Dempsey, 2008). Typically, prescribed medications are intended to address associated behaviors (e.g., inattention, aggression, self-injurious behavior, hyperactivity) rather than the core features of ASD (King & Bostic, 2006). Adolescents who also present with comorbid psychiatric conditions (e.g., anxiety, depression, bi-polar disorder) are often prescribed medication. Although there are no curative psychopharmacologic agents, medication can reduce the severity of some of the core symptoms and address many of the comorbid conditions. In general, psychotropic interventions can address some of the core behaviors of ASD. For example, risperidone resulted in improvements in restricted, repetitive, and stereotyped patterns of behavior, interests, and activities (McDougle et al., 2005) and irritability and hyperactivity (Siegel & Beaulieu, 2012) but had little, if any, effect on social interaction and communication (McDougle et al., 2005). Similarly aripiprazole also improved symptoms of irritability and hyperactivity as well as stereotypy (Siegel & Beaulieu, 2012).

Using psychopharmacological treatments is not without risks because some medications have significant side effects (e.g., weight gain, sedation, hyperglycemia). Parents and physicians will want to weigh history of medication responsivity and severity of behavior before deciding to implement a trial period of medication. Additional research on the use of medications for adolescents with ASD is clearly warranted. In fact, the majority of medications are prescribed "off-label." Off-label prescribing is considered an acceptable medical practice (Weeden, Ehrhardt, & Poling, 2013); however, the FDA approved the medication for other purposes (e.g., depression, anxiety, hyperactivity) and not for specific use for

adolescents with ASD so frequent and ongoing monitoring of effects and side effects is critical.

The use of psychopharmacological treatments for adolescents with ASDs appears to be increasing as physicians recognize their utility in addressing some of the core and associated symptoms. However, more research needs to be conducted exploring the efficacy of psychopharmacological treatments and their long-term effects on adolescents with ASDs. Also, as Matson and Dempsey (2008) noted, studies that combine well-conducted ABA programs in conjunction with drug trials are warranted.

Potential for Harm. In addition to psychopharmacological treatment, we have considered other medical or CAM treatments that may be associated with harm in this section.

*Gluten-free/Casein-free diet* (*GFCF*): The GFCF diet consists of removing gluten and casein from the individual's diet and is based on the assumption that individuals with ASD develop antibodies against gluten and casein. There is evidence to suggest the GFCF diet is ineffective in the reduction of maladaptive behavior (Knivsberg, Reichelt, Hoien, & Nodland, 2002) and preliminary evidence suggests it may result in reductions in bone density (Heiger et al., 2008) and nutritional deficiencies (Arnold, Hyman, Mooney, & Kirby, 2003). Issues of diet can be particularly challenging during the adolescent years given both the rapid changes in body morphism that occurs and the possibility of weight gain as a side effect of medication.

*Vaccinations*: The measles, mumps, and rubella (MMR) vaccine has received considerable attention since a 1998 article published in *The Lancet* suggesting an association between the vaccine and ASD (Wakefield et al., 1998). *The Lancet* published a retraction in 2010, noting that the article erroneously associated vaccines with ASD (McGuinness & Lewis, 2010; "Retraction," 2010). Despite this retraction and numerous well-designed studies demonstrating no association between ASD and the MMR vaccine (or thimerosal, a mercury-containing preservative used in vaccines; Price et al., 2010; Taylor, 2006), many parents remain resistant to vaccination. In fact, one study found approximately half of parents surveyed discontinued or changed vaccination practices due to their belief that vaccines contributed to ASD (Bazzano, Zeldin, Schuster, Barrett, & Lehrer, 2012).

Vaccines are considered a primary prevention toward reducing the long-term complications of having measles, mumps, or rubella. There is increased long-term risk of encephalitis, seizures, testicular problems, infertility, and cognitive deficits among people who receive these diagnoses (McGuinness & Lewis, 2010). The children of parents who made the decision to avoid vaccinations 10–15 years ago are now adolescents; a number of these adolescents have been diagnosed with ASD and are at risk for contracting measles, mumps, or rubella in outbreaks. Not only could the illness have a direct impact, but it may setback behavioral and educational treatments as well. Avoidance of vaccination has the potential for long-term consequences as well. Ironically, women who are not vaccinated as children are at greater risk for maternal rubella during their pregnancy, which results in fetal birth defects (e.g., hearing impairments), and symptoms often associated with ASD (e.g., stereotypic behaviors and intellectual disabilities; Freij, South, & Sever, 1998). Therefore, medical professionals have consistently advocated for vaccinations, citing the low risk of vaccines and their preventative purposefulness.

## The Prevention of Autism Spectrum Disorders in Adolescents

### What Works

Although there is no known method for preventing ASD, there are antecedent interventions, which are strategies for preventing symptoms associated with the disorder. A search of the research literature did not uncover an antecedent intervention that met the criteria of three successful trials.

## What Might Work

Antecedent interventions involve altering situational conditions to (a) increase the likelihood skills will be acquired or used in appropriate contexts or (b) avoid the occurrence of maladaptive behavior. We have provided exemplars of how antecedent interventions apply to the unique needs of adolescents with ASD. In addition to the social communication and stereotypic or maladaptive behaviors we addressed in the treatment section, we have added "independence" as a critical goal for adolescents with ASD that can be targeted through antecedent interventions.

## Social Communication

In terms of antecedent interventions, we restrict our discussion to employment and sexuality education. However, many of the interventions discussed in the treatment section also include an antecedent component.

*Employment*: Technology-based antecedent interventions have been used to help adolescents with ASD navigate the social aspects of job interviewing. Virtual reality practice of interviewing using programs such as Second Life has resulted in the acquisition of the requisite social skills to successfully interview for a job, which has traditionally been a barrier to employment for adolescents with ASD (Kandalafat, Didehbani, Krawczyk, Allen, & Chapman, 2013). JobTIPS, another technology-based antecedent intervention designed to combine computer-assisted instruction of interviewing skills and virtual reality practice of interviewing, was used with 11 adolescent males with ASD in a randomized control study. Adolescents participating in five sessions with the JoBTIPS program consisting of video models, video quizzes, and worksheets followed by a virtual reality interview practice session had significantly better performance on the postintervention simulation interview than the control group (Strickland, Coles, & Southern, 2013). Despite the fact that many technologies to improve employment-related skills (e.g., videomodeling/prompting, prompting on iPods, etc.) have been used, the social communication component of employment remains an under-investigated area which has clear long-term implications for quality of life.

*Sexuality education*: A number of curricula target sexuality for individuals with intellectual and developmental disabilities, but only a handful are specific for adolescents with ASD (e.g., Mesibov, Shea, & Schopler, 2004; Wrobel, 2003). Sexuality curricula vary based on the needs of the individual and can include relatively basic skills (e.g., body part identification) or more complex sets of skills (e.g., conversation on a date). They are not always appropriate to the adolescent with ASD being served so individualized modification may be necessary. Adolescents with ASD often experience trouble discriminating social cues to either initiate or terminate an interaction with other people (Stokes, Newton, & Kaur, 2007). Further, adolescents with ASD often engage in repetitive behavior that in some dating situations may be socially off-putting at a minimum, and in some instances interpreted as stalking (Stokes et al., 2007). This is especially important in a dating situation or an intimate relationship where pursuing further contact with someone else can, in some instances, have adverse consequences.

Antecedent interventions for sexuality education often involve teaching skills that minimize the probability that abuse will occur. Deficits in self-care skills represent both a risk factor for sexual abuse and a major barrier to successful social interactions for many adolescents with ASD (Gerhardt & Lanier, 2011). Adolescents who are unable to independently bathe, dress, and address toileting needs are often left partially nude alone with any number of adults, which increases their risk of sexual abuse. Given many adolescents with ASD have a limited capacity to communicate their experiences and/or they are not able to understand that a pleasurable feeling actually represents abuse, efforts to prevent their possible exposure to sexual abuse through antecedent interventions is essential. Adolescents with ASD have been taught to successfully acquire self-care skills such as performing routine menstrual care skills using parent-implemented task analyses and Social Stories™

(Gray & Garand, 1993; Klett & Turan, 2012). However, the predominance of sexuality education literature focuses on male masturbation that either occurs excessively (Sullivan & Caterino, 2008) or in inappropriate places (e.g., grocery stores). Although most treatment of this nature is reactive, it is far more advisable to develop antecedent interventions to avoid the occurrence of socially inappropriate sexual behavior.

## Stereotypic and Other Maladaptive Behavior

*Environmental enrichment*: Environmental enrichment is an antecedent intervention that involves providing multiple activities in which the adolescent is likely to engage. Horner (1980) examined the effects of environmental enrichment on maladaptive behavior (i.e., hitting others). Overall, environmental enrichment decreased maladaptive behavior; however, a differential reinforcement component was needed to obtain further decreases. Given antecedent interventions are often tied to consequent-based treatments, this outcome is not surprising. When selecting the stimuli required to enrich the environment, the clinicians must consider both the availability of preferred items, activities, attention, etc. and the developmental and age appropriateness of the materials. If the stimuli have meager effects independently and they are socially stigmatizing, the clinician should continue working to identify more appropriate stimuli.

*Noncontingent reinforcement*: Noncontingent reinforcement involves delivering the reinforcer that maintains maladaptive behavior on a time-based schedule, irrespective of behavior. Noncontingent escape was combined with instructional fading to reduce self-injury, aggression, and tantrumming for a 13-year-old girl with ASD (Butler & Luiselli, 2007). However, it is important to gradually re-introduce demands so adequate learning opportunities are available. Otherwise, an early adolescent with ASD is unlikely to acquire critical communication, social, academic, and self-care skills as he or she develops.

Independence. Independence is tied directly to quality of life for people with severe disabilities (Wilczynski, 2011). Self-management involves a set of strategies for organizing, evaluating, and handling relevant aspects of one's life. These antecedent interventions have been successfully applied in a variety of settings such as home, school, and the community. Self-management may involve pictures, text, or videos that prompt task completion and assist with transitions between tasks or settings. Self-management has successfully helped adolescents with ASD to accomplish targeted tasks at the appropriate time while simultaneously reducing problem behavior when transitioning between tasks or settings (Cihak, Wright, & Ayres, 2010). Technology has afforded new socially acceptable methods for teaching independence. Video-based self-directed prompts have been presented via a variety of technologies (e.g., iPads®, smartphones, and personal digital assistants) and have improved both daily living and vocational tasks (e.g., Bereznak, Ayres, Mechling, & Alexander, 2012).

## What Doesn't Work

Although many interventions designed to "prevent" symptoms of ASD from interfering with life functioning are likely to be ineffective, scant well-controlled research has suggested specific techniques to be ineffective or cause harm.

## Recommended Best Practices

Behaviorally based and psychopharmacological treatments enjoy the strongest research support so we restrict our recommendations to these alternatives.

- Make sure targets are developmentally appropriate and not just based on the diagnosis. Appropriate targets for adolescents include but are not restricted to social interactions at home, school, work, and community (e.g., dating), stereotypic or other maladaptive behaviors, and independence. Treatments should be altered with the client's age in mind to minimize or eliminate stigmatization.

- Consequent-based treatments should be used for adolescents with ASD. These include but should not be restricted to social skills training (including direct instruction, Social Stories™, and Pivotal Response Treatment), sexuality education (including technology-based features of sexual relationships), presentation of competing stimuli or removal of reinforcing properties for maladaptive behavior (including sensory extinction and response blocking), and functional communication training. Often, the complex skills required to successfully navigate adolescence will often mean the skills will need to be broken down into their component parts and taught individually. However, without teaching adolescents how to integrate these components in a meaningful way isolated skills will not work in natural contexts.

- Antecedent interventions should be used for adolescents with ASD. These include but should not be restricted to virtual reality and computer-assisted instruction, self-care skill development (including task analysis, chaining, and Social Stories™) to reduce risk of sexual abuse, environmental enrichment and NCR for addressing stereotypic and other maladaptive behaviors, and self-management to increase independence.

- Psychopharmacological treatment should be considered when maladaptive behaviors or symptoms of ASD significantly influence the quality of life.

- Consequence, antecedent, and psychopharmacological treatments should be monitored to ensure that they produce the intended effect and side effects are minimized or eliminated.

- Consider avoiding treatments that have some evidence of causing harm, even if some of the research involves participants outside the adolescent ASD population. These include the GFCF diet and facilitated communication. Similarly, avoidance of vaccinations brings tangible physical risks, but can also interact with existing treatment programs in a way that attenuates benefits of treatments that can produce favorable outcomes.

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# Schizophrenia

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## Introduction

Schizophrenia is characterized by hallucinations, delusions, speech impairments, reduced pleasure and motivation, disturbances to attention and cognition, and social difficulties (American Psychiatric Association [APA], 2000). As schizophrenia and other psychotic spectrum disorders are typically associated with substantial functional impairment and health comorbidities throughout the lifespan of affected individuals, the impact of this illness is felt by not only those with schizophrenia, but also their families and communities (Harvey et al., 2009). Individuals with schizophrenia are at heightened risk for early mortality due to suicide and a number of medical comorbidities that commonly arise during the course of illness (Saha, Chant, &

McGrath, 2007). The economic burden incurred by schizophrenia within the United States alone was estimated as $62.7 billion annually in 2002, accounting for direct health care costs as well costs associated with chronic disability (Wu et al., 2005). Despite the substantial morbidity and mortality associated with this illness, pharmaceutical, cognitive behavioral-, and community- and family-based interventions can help to manage symptoms and promote recovery among those with schizophrenia (Dixon et al., 2010).

Schizophrenia is usually first diagnosed in young adults and is less common among adolescents than other mood and behavioral conditions (e.g., ADHD, depression). There are several compelling reasons, however, for adolescent mental health practitioners to develop skills for identification and treatment of this disorder. First, the incidence of first-episode schizophrenia may be higher among older teens than previously thought, with up to 20 % of those who develop schizophrenia experiencing onset by age 18 (Schimmelmann, Conus, Cotton, McGorry, & Lambert, 2007). Second, the majority of people on a trajectory toward schizophrenia experience a "prodromal" phase of illness, which may present as attenuated or subthreshold psychotic symptoms beginning in adolescence (Cornblatt, Green, Walker, & Mittal, 2009). Third, for young people experiencing new psychotic symptoms, early intervention offers the best chance of remission and recovery. Treatment delays during the early

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course of psychosis are associated with poorer treatment response and greater long-term disability (Marshall et al., 2005). Increasing providers' knowledge about schizophrenia and related spectrum disorders has been shown to reduce the duration of untreated psychosis (DUP) for individuals experiencing a first psychotic episode (Friis et al., 2005).

Although early onset schizophrenia (typically defined as beginning before age 18) is rare, teenagers with schizophrenia face a difficult convergence of clinical and developmental challenges. Adolescents without mental illness encounter developmental hurdles such as managing their increasing independence and responsibilities, navigating new social relationships (e.g., dating), and mastering practical concerns like learning to drive and finishing school. Struggling with schizophrenia during this time can interfere with these developmental milestones, so that teens with early onset schizophrenia can be delayed—in some cases, indefinitely—in acquiring important life skills (Röpcke & Eggers, 2005). Developmentally sensitive treatment for youth with schizophrenia can help teens to achieve independence and prepare for the future while learning to manage mental illness.

## Incidence, Prevalence, and Anticipated Changes in DSM-5

### Epidemiology

Worldwide, 0.5–1.5 % of the adult population is estimated to suffer from schizophrenia (APA, 2000), with global annual incidence or new cases of schizophrenia within the range of 7–40 individuals per 100,000 people (Tandon, Keshavan, & Nasrallah, 2008). Onset of schizophrenia most often occurs in late adolescence and early adulthood (~ages 18–25). Infrequently, psychotic disorders occur before age 14, with prevalence rates around 0.1 in 100,000 in ages 2–12 (Asarnow & Asarnow, 2003). Rate of onset increases through adolescence, with a marked increase in prevalence between ages 15 and 17 (Kessler et al., 2007). A recent epidemi-

ological study found that 20 % of a first-episode cohort experienced illness onset prior to the age of 18 (Schimmelmann et al., 2007).

The prevalence of psychotic-like symptoms, including hallucinatory experiences, is more common than diagnosable psychotic disorders, with around 5 % of adults in the general population reporting occasional symptoms (e.g., transient hallucinations or perplexity) (van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009). These symptoms are even more prevalent in childhood and adolescence. According to a meta-analysis conducted by Kelleher et al. (2012), 17 % of children ages 9–12 and 7.5 % of adolescents ages 13–18 experience psychotic-like symptoms. Although most children who experience isolated symptoms will not develop schizophrenia or a related disorder, persistent symptoms may reflect an unfolding of illness among youth who go on to develop psychotic disorders (Rubio, Sanjuán, Flórez-Salamanca, & Cuesta, 2012).

### Diagnosis

Within the current diagnostic classification system (*DSM-IV-TR*; APA, 2000), criteria for a diagnosis of schizophrenia are consistent for adolescents and adults (see Table 19.1); however, clinicians should be sensitive to developmental norms when considering a diagnosis of schizophrenia. Teens usually "grow out of" typical childhood experiences such as fantasy, pretend-play, and isolated hallucinatory experiences, but some adolescents may endorse experiences or preoccupations (e.g., intense interest in a character or imaginary world) that can be difficult to distinguish from psychosis. For ethnic or cultural minorities, culturally accepted beliefs that fall outside the mainstream may also contribute to diagnostic confusion, and clinicians should assess whether unusual ideas are accepted or encouraged by a teen's family and others in their religious or ethnic group. Mood-congruent thought distortions and the effects of substance use may also mimic psychosis. Finally, adolescents endorsing psychotic symptoms should receive a

**Table 19.1** DSM-IV-TR diagnostic criteria for schizophrenia

A. Characteristic symptoms (two or more of the following): delusions; hallucinations; disorganized speech; grossly disorganized or catatonic behavior; negative symptoms (i.e., affective flattening, alogia, avolition)

B. Social/occupational dysfunction in one or more areas including school, work, self-care, relationships

C. Duration of symptoms at least 6 months

D. Prominent mood symptoms (depression, mania) are absent

E. Disturbance are not directly caused by substance use or a medical condition

F. In the context of autism or a pervasive developmental disorder, a diagnosis of schizophrenia is only given if prominent delusions or hallucinations are present for at least 1 month

Adapted from APA by author (2013)

physical evaluation to rule out potential medical causes for symptoms. Teens' rapid cognitive, social, and physical development contributes to the overall complexity of differential diagnosis in this population, and alternative diagnostic conceptualizations should be explored for children who appear to present with psychosis (Algon, Yi, Calkins, Kohler, & Borgmann-Winter, 2012).

DSM-5 is expected to reflect revisions to the diagnostic category "Schizophrenia Spectrum and Other Psychotic Disorders." The schizophrenia subtypes (paranoid, disorganized, etc.) will be eliminated due to their limited clinical and research value (Linscott & van Os, 2010). Criterion A will be revised so that one of the two symptoms necessary for diagnosis is hallucinations, delusions, or disorganized thinking. Diagnostic criteria for other disorders included within the schizophrenia spectrum (delusional disorder, schizoaffective disorder) may also be revised in order to better capture the population of interest.

A new category, Attenuated Psychosis Syndrome (APS), will be added to DSM-5 in Section III, "conditions that require further study" (Yung et al., 2012). In order to meet the proposed criteria for APS, an individual must experience at least one subthreshold "positive" symptom (i.e., delusional ideas, perceptual anomalies) that began or worsened within the past year; maintain intact reality testing (a key differential from full psychosis); and report that

his or her symptoms are distressing enough to warrant clinical attention (for youth, the parent/guardian may be the person initiating evaluation and treatment). Those designated as APS are often identified in adolescence and considered to be high-risk for a future psychotic spectrum disorder. A true "prodromal" individual will likely experience APS prior to a first-episode of psychosis; however, research to date suggests that a majority (~75 %; Fusar-Poli et al., 2013) of individuals meeting APS criteria are not expected to develop a psychotic disorder within a predictable time frame. Because of this uncertainty regarding APS outcomes, the condition will be included in Section III of DMS-5 rather than being added as a formal diagnosis.

## Biological and Genetic Factors

### Neurodevelopmental and Degenerative Models

Biological and genetic features associated with schizophrenia can help to illuminate the etiology and mechanisms of psychosis, and to highlight how these changes present during different stages of development. Current conceptualizations of schizophrenia emphasize a neurodevelopmental model reflecting the impact of disturbances to central nervous system growth and development. The "two-hit" neurodevelopmental model posits that schizophrenia results from the interaction of early prenatal insults (first hit) with environmental stressors (second hit) that trigger illness onset (Rapoport, Giedd, & Gogtay, 2012). Although the process is not fully understood, available evidence suggests that genetic predisposition and prenatal environmental factors can interrupt the typical process of neural development, leaving the individual vulnerable to developing schizophrenia later in life. Stressors such as obstetric complications, viral infections, childhood adversity, or drug use might then compound this vulnerability and lead to active psychotic illness.

Distinct from the neurodevelopmental theory, some researchers have posited a neurodegenerative model of schizophrenia, with symptoms

caused and exacerbated by cell death and synaptic disturbances accumulating in the brain over time (Thompson et al., 2001). As there appear to be multiple mechanisms and risk factors that can play a role in initiating or exacerbating the trajectory of illness (e.g., family history plus drug use; prenatal infection plus childhood adversity), the concept of "equifinality"—multiple pathways leading to a similar clinical outcome—is important when considering potential causes of this disorder. Most research into the etiology of schizophrenia assumes substantial overlap between the biological mechanisms of adult- and childhood-onset illness.

## Genetic Contributions to Schizophrenia

Over the past several decades, family study research has firmly established that schizophrenia is a highly heritable disease, with progressively elevated estimates of risk for relatives who share greater genetic overlap with affected individuals. Relative to the approximate prevalence of 1 % within the general population, illness prevalence within first degree relatives such as monozygotic twins (~50 %), siblings (~9 %), and children (~13 %) of individuals with schizophrenia appears to be substantially higher (Cornblatt et al., 2009). Comprehensive meta-analyses and reviews of twin studies have yielded summary heritability estimates of approximately 80 %, indicating that a large majority of the variation in schizophrenia can be attributed to additive genetic factors (Girard, Dion, & Rouleau, 2012; Mulle, 2012).

Despite the extensive literature supporting the heritability of schizophrenia, mixed results from molecular genetic studies leave unanswered questions with regard to specific genetic mechanisms responsible for the transmission of illness. Classic linkage and genome-wide studies have not been successful in consistently isolating any particular risk gene with a large effect (Girard et al., 2012; Mulle, 2012). Consequently, the current understanding of schizophrenia assumes the influence of many genes on the development of illness.

Linkage and association studies have suggested several different candidate genes associated with schizophrenia, though findings have yielded only small effects (Mulle, 2012). Some of the most promising genetic regions are located on chromosome 1p (miR-137), 1q (DISC-1), 2q (ZNF804A), 6p (DTNBP1), 8p (NRG1), 18q (TCF4), and 22q (COMT) (Girard et al., 2012; Mulle, 2012). Research on chromosome 22q11 has yielded replicated findings that the rate of 22q11 deletions in adult-onset schizophrenia is higher than that of the general population (0.2–5.3 % versus less than 0.01 %); further, adults with 22q11.2 Deletion Syndrome (22q11DS) have a 22–30 % risk of developing schizophrenia (relative to a general population prevalence of less than 1 %) (Mulle, 2012; Prasad, Howley, & Murphy, 2008). Research into 22q11 is of particular interest from a developmental standpoint as findings have indicated that individuals with childhood-onset schizophrenia (COS) may have an even greater rate of 22q11 deletions (approximately 5–6 %), suggesting a particular threat associated with this gene (Hoogendoorn et al., 2008). Though 22q11DS is a substantial risk factor for schizophrenia, given that the vast majority of individuals with schizophrenia do not have 22q11DS, this association does not inform our understanding of most phenotypes of the illness (Mulle, 2012).

The findings from 22q11DS studies have sparked investigation into other rare genetic variants in schizophrenia. Recent research has suggested that the prevalence of various "de novo" mutations (spontaneous mutations that are not heritable) may be higher in individuals with schizophrenia, however, the samples of mutations seen in this population are heterogeneous (Girard et al., 2012; Mulle, 2012). Although de novo mutations appear to confer more substantial risk than other genetic factors, these variants are not passed down between generations, and thus provide little insight into the mechanisms behind the high rates of heritability in schizophrenia (Mulle, 2012). Nonetheless, further investigation along this new line of genetic research is warranted and may provide valuable information pertaining to different expressions of schizophrenia.

## The Prenatal Environment

In addition to genetic factors, several prenatal events are associated with increased illness risk. Most studies include both adult and adolescent-onset populations, so findings related to prenatal factors are not known to be distinct to either cohort. According to Cannon, Jones, and Murray (2002), the risk for schizophrenia is doubled (approximately 2 %) when complications of pregnancy interfere with or alter neurodevelopment. The most influential prenatal factors are fetal hypoxia (due to preeclampsia, bleeding, or asphyxia during birth), maternal stress, viral infection, maternal nutritional deficiency, maternal diabetes, and exposure to lead (Brown & Derkits, 2010; Cannon et al., 2002; King, St-Hilaire, & Heidkamp, 2010). Bleeding during pregnancy has been shown to be associated with early-onset psychosis specifically (Moreno et al., 2009) and birth asphyxia may be a distinct risk factor for early onset compared to later-onset illness (Rosso et al., 2000).

Fetal growth deficiencies that negatively impact birth weight and head circumference have also consistently shown associations with schizophrenia (Clarke, Harley, & Cannon, 2006). However, because growth is likely impaired by fetal insult, it is unclear whether fetal growth problems are directly linked to schizophrenia susceptibility or are spuriously associated due to other genetic and biological mechanisms (Rapoport et al., 2012). Despite the compelling evidence that links prenatal insult and schizophrenia, prenatal factors alone do not account for the development of this illness. In line with a diathesis-stress model, it is likely that genetic susceptibility coupled with environmental stressors compound vulnerability over time. Future research focused on interactions between genetic factors and environmental influences may help elucidate the mechanisms behind this complex illness.

## Findings from Neuroimaging Research

An extensive brain imaging literature has highlighted many structural abnormalities and volumetric reductions in brain tissue among adults with schizophrenia, and imaging research on adolescents with psychosis or psychosis risk factors is expanding. Evidence supporting a neurodegenerative hypothesis has come from research demonstrating cortical thinning and gray matter loss occurring at an accelerated rate in individuals with schizophrenia, even among teens in early stages of the disorder (Vidal et al., 2006).

Longitudinal studies have shown that more extensive deficiencies due to progressive grey matter loss are seen in COS when compared to later-onset variants of the disease (Arango et al., 2008), suggesting that COS may herald a particularly severe course of illness. Among COS individuals, significant reductions are seen in parietal and frontal regions from early ages, with additional grey matter loss in the temporal lobe seen by adulthood (Gogtay, Vyas, Testa, Wood, & Pantelis, 2011; Thompson et al., 2001), indicating a process of neurodegeneration over time. Similar structural patterns have been seen in male adolescents with psychosis, with grey matter reductions seen across the brain (Reig et al., 2011). Additionally, increases in cerebral spinal fluid (CSF) have been found in both male and female adolescents with psychosis (Reig et al., 2011). The emergence of grey matter deficits prior to the emergence of positive symptoms suggests degenerative processes occurring throughout the development of illness.

## Individual Factors Influencing Risk and Resiliency

The identification of characteristics or behaviors that increases risk for illness is central to practitioners focusing on adolescent health. Clinicians working with teens have the opportunity to influence future outcomes and potentially prevent illness by discouraging risky behavior and promoting resilience among these youth. In addition to biological and genetic factors that have been identified as potential causes of schizophrenia, individual characteristics and behaviors can intensify or minimize the likelihood of schizophrenia. Many of these factors also appear to influence treatment effectiveness and outcomes after the emergence of illness. For example,

patients with greater cognitive ability, better childhood functioning, and later age of onset tend to maintain better social and occupational functioning despite their illness (Perlick, Stastny, Mattis, & Teresi, 1992); unfortunately, these resilience-enhancing features cannot necessarily be imparted through treatment or effort. Factors that are potentially modifiable are of particular interest, since they may represent opportunities for informed and targeted interventions among high-risk youth.

*Substance use*: Substance abuse is highly comorbid with schizophrenia, and rates of cannabis use within this population are particularly notable (Lambert et al., 2005). Although the vast majority of people who use illicit drugs or alcohol do not develop schizophrenia, substance use appears to aggravate symptoms and speed psychosis onset among individuals who are already at heightened risk for the disorder. Within a sample of "clinical high-risk" (CHR) youth (mean age of 18 years), those with a substance abuse disorder were more likely to develop psychosis within the study's 36-month follow-up period (Cannon et al., 2008). Cannabis use, in particular, appears to be a salient risk factor for a subset of genetically high-risk individuals (Caspi et al., 2005). In addition to exacerbating risk for illness, drug and alcohol abuse that persists following psychosis onset and treatment is quite prevalent (in one large sample of first-episode patients, 36 % continued to abuse substances after 18 months of treatment, decreased from 62 % at treatment initiation) and appears to impede treatment effectiveness (Lambert et al., 2005). Given the rise in drug and alcohol use that occurs among typically developing youth as they reach adolescence (Swendsen et al., 2012), substance use may be a particularly salient risk factor for teens already experiencing mental health difficulties or with known family history of schizophrenia.

*Trauma*: The relationship between trauma and serious mental illness has been controversial. Epidemiological research has suggested elevated prevalence of childhood trauma among people with schizophrenia relative to other populations; however, confounds associated with retrospective reporting (people with mental health problems recall more negative events) and illness effects (psychosis may increase risk for victimization) make it difficult to trace a clear directional path between these variables (Morgan & Fisher, 2007). The interwoven threads of parental mental illness, poverty, exposure to traumatic childhood events, difficult child temperament, poor premorbid functioning, and eventual illness are difficult to disentangle. Some researchers have proposed that chronic adversity—for example, repeated childhood exposure to abuse or violence—may increase physiologic stress reactivity, exacerbating vulnerability to psychosis over time (Lardinois, Lataster, Mengelers, van Os, & Myin-Germeys, 2011). Although childhood abuse and other adverse experiences appear to be risk factors for future psychopathology, and may be linked to increased experience of psychotic or psychotic-like symptoms (Tessner, Mittal, & Walker, 2011), a causal relationship between trauma and schizophrenia has not been firmly established and the direction of effects is still under investigation.

*Sex*: Although biological sex is non-modifiable, its role in schizophrenia development and course has received a great deal of attention. The disorder appears be more prevalent in men than women, with a recent meta-analysis reporting a ratio of 1.4:1 across epidemiological studies (Aleman, Kahn, & Selten, 2003). Most studies have found that, relative to their male counterparts, women with schizophrenia experience fewer negative symptoms, less comorbid substance abuse, and better premorbid functioning, all of which are associated with better prognosis (Abel, Drake, & Goldstein, 2010). Age of onset also appears to diverge between men and women, with men experiencing somewhat earlier onset in general. For both sexes, the most common age of onset occurs around 21–22 years; however, this peak is more pronounced for men, with women demonstrating a broader distribution of incidence across their 20s and 30s (Abel et al., 2010). Thus, males comprise the majority of adolescents with early-onset schizophrenia.

*Duration of untreated psychosis*: DUP, or the amount of time lapsing between psychosis onset and treatment initiation, is associated with multiple meaningful outcomes including symptom severity, overall functioning, and quality of life, with shorter DUP predicting better outcomes in all domains (Marshall et al., 2005). Thus, early intervention has the potential to promote recovery and resilience among young people with schizophrenia. Greater social skills and social support represent additional modifiable factors promoting resilience among people with schizophrenia (Brekke, Kay, Lee, & Green, 2005). Programs of prevention and intervention have capitalized on these recognized protective factors to design interventions for people at risk for, or struggling with, schizophrenia and other spectrum disorders.

## Family Factors Influencing Risk and Resiliency

Studies comparing high-risk to low-risk children have found that, for children with heightened genetic vulnerability, parental instability, family conflict, and/or institutional rearing are associated with increased risk for eventual illness (Mednick, Parnas, & Schulsinger, 1987; Tienari et al., 1987). Associations between these family factors and later psychosis have not emerged within samples that do not include a genetically high-risk group (Schiffman et al., 2001). Thus, family-level risk factors may serve as a "second hit" toward illness development. As in any investigation of the interactive influence of genes and environment, however, it remains difficult to parse the direction of effect within these findings. As a function of early biological predisposition, individuals with genetic liability to mental illness may express premorbid subclinical behavioral symptoms, which can exacerbate family discord as well as portend an already established pathway towards schizophrenia. In this scenario, family factors would not act as a second hit, but rather would be an epiphenomenon to a previously established biological process already in motion.

In those with established schizophrenia, family factors appear to influence the course of illness over time. In a classic 1972 study, Brown, Birley, and Wing (1972) demonstrated that the number of critical comments made by family members of individuals hospitalized for schizophrenia about their ill relative predicted nine-month relapse patterns with surprising accuracy. The predictive strength of this critical attitude, termed "expressed emotion" in subsequent literature, has been replicated across many studies and is considered a reliable and valid predictor of relapse after index hospitalization (for review see Hooley, 1985). This may be particularly true for adolescents, who may be more likely to reside with and depend on adult caregivers than adults with schizophrenia. Caregivers of teens with schizophrenia describe substantial stressors relating to raising adolescents with schizophrenia, ensuring their safety, and obtaining appropriate mental health services (Knock, Kline, Schiffman, Maynard, & Reeves, 2011). A diagnosis of schizophrenia can be devastating for families; therefore, it is important to keep in mind that expressed emotion and family stress may in fact stem from (rather than give rise to) children's symptoms.

Unfortunately, the field's emphasis on identifying family-level risk factors that appear to exacerbate risk and course of illness can obscure the key roles that family members often play in promoting recovery for relatives with schizophrenia. Overall, family involvement appears to be a positive prognostic indicator. Relative to consumers with low family support, consumers with high levels of family support are more engaged in mental health services (Compton, 2005), abuse drugs and alcohol less often (Fischer et al., 2008), and maintain better functional and symptomatic outcomes over time (Harvey, Jeffreys, McNaught, Blizard, & King, 2007). Despite the known benefits of family involvement, some parents of adolescents with schizophrenia report feeling alienated or disempowered by the mental health system (Knock et al., 2011). Interventions aimed at increasing parents' knowledge about mental illness and facilitating families' involvement in care have been established as best practices in the treatment of schizophrenia for both adolescent and older patients (Dixon et al., 2010).

## Social and Community Factors Influencing Risk and Resiliency

The question of whether and to what extent sociocultural context influences schizophrenia's course and recovery has been somewhat controversial. A seminal study initiated by the World Health Organization in the 1960s followed participants with schizophrenia from eight cities representing a mix of industrialized and non-industrialized locations for up to 25 years. Over time, patients from India and Nigeria appeared to show better clinical course (i.e., less time acutely psychotic) and better social functioning relative to those in European countries (World Health Organization [WHO], 1979; Leff, Sartorius, Jablensky, & Korten, 1992). On the basis of the WHO findings, the idea that people with schizophrenia in less-developed parts of the world fare better over time due to greater social support and less cultural stigma became axiomatic in the field of cross-cultural psychiatry (Cohen, Patel, Thara, & Gureje, 2008).

A recent review of the international literature, however, challenged the major conclusion of the WHO, namely that, patients in the developing world experience a less severe trajectory of illness (Cohen et al., 2008). Cohen notes that in cross-cultural comparison of mental illness outcomes, there is as much within- as between-group variability within these samples (that is, it is overly simplistic to argue that all Indian or Nigerian families are alike in providing high levels of support to relatives with schizophrenia). Further, unemployment, divorced or never-married status, and elevated mortality rates are significantly more common among people with schizophrenia relative to population norms across all cultures that have been studied (Cohen et al., 2008). These findings, as well historical trends toward increased globalization, call for a more nuanced approach to understanding cultural differences in the experience and treatment of schizophrenia and other psychoses.

Despite the lack of a consensus regarding the influence of culture on prognosis, research on other social and community factors has yielded more consistent findings. Among children, lower socioeconomic status and ethnic minority or first/second generation immigrant status have been associated with modestly increased risk of later schizophrenia (Coid et al., 2008; Harrison, Gunnell, Glazebrook, Page, & Kwiecinski, 2001). These factors may impact schizophrenia risk directly, through a stress-mediated pathway toward illness, or indirectly, for example through increased rates of obstetric complications among disadvantaged groups (Eagles, 1991). Urban environments have also been associated with increased risk for schizophrenia above and beyond differences accounted for by obstetric complications and socioeconomic disadvantage (Harrison et al., 2003). Although the mechanisms linking social and community factors to specific disease processes are unclear, the compelling associations between community characteristics and illness risk merit further study.

For most adolescents on a trajectory toward or experiencing first symptoms of schizophrenia, the two most immediate community-level influences on their relative risk or resilience may be access to high-quality, affordable mental health care, and culturally sanctioned knowledge and beliefs about mental illness. The availability and quality of mental health care has obvious implications. Improving access to a well-trained mental health evaluation service has been shown to reduce DUP (Friis et al., 2005). Unfortunately, even in relatively affluent countries (e.g., the United States), many areas lack mental health care providers, and some providers may be reluctant to incorporate empirically supported practices for assessment and intervention (Staller, 2008).

Knowledge and beliefs about mental illness held by an individual and his or her family, community, and culture can also influence that person's likely trajectory of illness. Concerns about stigma (negative beliefs about mental illness and mentally ill people) can discourage people from seeking treatment, even in cases of acute psychosis (Franz et al., 2010). For those with diagnosed illness, internalized stigma may lead to social isolation and depressive symptoms (Yanos, Roe, Markus, & Lysaker, 2008). Because stigma

emerges from socially constructed ideas about normality, deviance, and the causes of unusual behaviors, the quality and severity of stigma may vary across subcultures or over time. Adolescents, who are often self-conscious about peer perceptions and fitting in, may be particularly vulnerable to the effects of stigma. Interventions designed to decrease stigma among people with mental illness, their families, service providers, and the general population may support resilience among people with schizophrenia by creating an environment more conducive to acceptance and recovery (Compton, Esterberg, McGee, Kotwicki, & Oliva, 2006). Increasing public awareness and knowledge about symptoms of schizophrenia can also lead to community-wide improvements in the prompt provision of services to teens and adults with schizophrenia (Friis et al., 2005).

## Evidence-Based Treatment Interventions for Schizophrenia

*What works*: The concept of recovery, or the goal of leading a satisfying life as a contributing member of the community, serves as a guiding principle for best-practice treatment of schizophrenia (Liberman, 2012). Recovery-oriented interventions should promote consumer choice, long-term goal setting, and community integration, with an understanding that most adolescents with schizophrenia will require psychosocial, educational, and/or vocational supports beyond psychiatric medication management (McClellan et al., 2001; Schiffman, Chorpita, Daleiden, Maeda, & Nakamura, 2008). Thus, practice parameters for individuals with schizophrenia emphasize a multidimensional approach to treatment involving complementary services to support recovery from acute illness (Dixon et al., 2010; McClellan et al., 2001). Practitioners encountering adolescents with recent-onset psychosis should be aware that suicidal behavior is a major concern for this population. Within a 282-person incidence sample of patients with first-episode psychosis (FEP) (mean age at illness onset of 21 years), 61 patients (22 %) experienced at least one suicide attempt during the 7 years following diagnosis; of these 61, 12 (4 % of the total sample) completed

(Robinson et al., 2010). Although the vast majority of people with schizophrenia do not commit violent crimes, the diagnosis is associated with an increased risk for violent behavior relative to the general population, particularly among those with comorbid substance abuse (Fazel, Langstrom, Hjern, Grann, & Lichtenstein, 2009). Establishing safety and stabilization during acute illness is important for comprehensive treatment planning (McClellan et al., 2001).

Although inpatient hospitalizations may be necessary to manage acute crises and initiate treatment, long-term care for adolescents with schizophrenia should take place in the "least restrictive environment" where teens can safely live, socialize, and attend school. In other words, most teens with schizophrenia do not require residential treatment or lengthy hospital stays (Dyer, 1998). Maintaining (or establishing) connections to natural support systems is important for both young and older consumers with schizophrenia. Although safety is an important concern for this vulnerable population, many youth with schizophrenia can receive effective treatment in outpatient settings. Comprehensive programs such as Assertive Community Treatment (ACT) were designed specifically to support individuals with significant need who are at risk for hospitalization.

Unfortunately, the evidence base for psychosocial interventions applied specifically to adolescents with schizophrenia is slim. Clinicians treating adolescents with schizophrenia are encouraged to adapt empirically supported treatments developed for adults with schizophrenia to address the needs of younger clients (McClellan et al., 2001). Psychosocial treatments with established efficacy among adults with schizophrenia include psychoeducation, ACT, vocational support, skills training, behavioral modification, and cognitive behavioral therapy (CBT) (Dixon et al., 2010). These interventions are outlined briefly below, with references for further reading.

*Pharmacotherapy*: Antipsychotic medication (APM) is recommended as an essential component of multimodal treatment of schizophrenia (Carlisle & McClellan, 2011). Side effects commonly associated with APMs should be carefully monitored,

since there is evidence to suggest that teens may be particularly vulnerable to adverse medication effects (Correll, 2008). Further information about APMs is provided in the psychopharmacology section of this chapter.

*Psychoeducation*: Learning about the causes and symptoms of schizophrenia, as well as about effective treatment options, can help to alleviate anxiety among both adolescents and their families. Although some consumers warn that "too much/too fast" can be overwhelming, effective psychoeducation can build a strong therapeutic relationship between consumers and providers, empower consumers to advocate for high-quality services, and reduce stigma and distress for both identified patients and their families (Green, Wisdom, Wolfe, & Firemark, 2012). Psychoeducation can be delivered as a part of traditional clinical treatment, but may be particularly effective in a multifamily group setting (Dixon et al., 2011; McFarlane, Dixon, Lukens, & Lucksted, 2003).

*Assertive community treatment*: Young people with schizophrenia will likely receive support from multiple sources; for example, one teen may interact with a psychiatrist, a psychotherapist, regular and special education teachers, a school social worker, a primary care pediatrician, and a vocational counselor. "Systems of care" that are poorly coordinated can cause frustration for patients and families. ACT aims to coordinate efforts within a multidisciplinary treatment team so that all providers are working to advance the same treatment goals. Practitioners working within the ACT model emphasize consumer choice and community integration. Services are organized around consumers' long-term recovery goals (e.g., living independently, getting a job) rather than goals that are more narrowly focused on mental illness management (e.g., symptom reduction). Among patients with schizophrenia, ACT has been found to significantly reduce homelessness and hospitalizations (for review see Coldwell & Bender, 2007).

*Vocational and educational support*: Explicit instruction in skills for social interactions, self-care and household tasks (e.g., hygiene and chores), and vocationally oriented tasks can help prepare young people with schizophrenia to live and socialize independently, and to achieve education and employment goals (Lehman et al., 2002). Vocational support interventions should focus on competitive (not disability-focused) employment, avoid setting "readiness" criteria for job-seeking, provide assistance with job-seeking immediately upon entry to the program, integrate vocational support within the existing team of mental health providers, allow consumers to choose which job to pursue, and provide indefinite (not time limited) support (Killackey, Jackson, & McGorry, 2008). For adolescents, completing education may be a primary goal; assisting teens in finding an appropriate educational placement, improving study skills, and working with teachers to accommodate students' needs may be helpful toward promoting academic success and preventing drop-out (Nuechterlein et al., 2008).

*Behavior modification*: Behavioral interventions rely on operant learning to encourage the performance of desired behaviors. Behavior plans use reinforcement (in the form of praise, privileges, tangible rewards, or "tokens" that can be used toward future rewards) to encourage adolescents to engage in appropriate and productive behavior. For example, teens might earn an allowance or computer time by completing homework, practicing social skills, or remembering to perform daily hygiene tasks and household chores. Non-desired behaviors can be discouraged through loss of rewards or privileges. Token economies and other programs of behavior modification have been widely used in adults with schizophrenia, as well as among youth with diverse mental health and behavioral concerns (Dickerson, Tenhula, & Green-Paden, 2005). Similar to adolescents with other mental health diagnoses, teens with schizophrenia are likely to benefit from well-designed, individualized behavioral interventions.

*Cognitive behavioral therapy*: CBT combines behavioral modification with therapeutic interventions that help patients to identify and challenge distorted or unhelpful thought patterns. CBT has been widely applied to many disorders

of adolescence and adulthood, and there is good evidence to suggest that CBT for psychosis (CBTp) is more effective than "treatment as usual" for reducing positive, negative, and general symptoms among people with schizophrenia (Sarin, Wallin, & Widerlöv, 2011). Preliminary evidence suggests that CBT modules that are not specific to psychosis can be adapted to effectively treat medication-refractory symptoms among adolescents with schizophrenia (e.g., Nakamura, Schiffman, Lam, Becker, & Chorpita, 2006).

*Ongoing assessment*: Throughout treatment, ongoing assessment of both clinical symptoms and daily functioning are important to ensure that interventions yield the intended effects. Clinicians should monitor psychotic symptoms along dimensions of frequency (*How often are you hearing the voices*?), intensity (*How real do they seem to you*?), distress (*How much does that bother you*?), and effect on functioning (*Can you ignore them*? *Do you do anything differently because of the voices*?). Standardized assessment tools, such as the Brief Psychiatric Rating Scale (BPRS; Overall & Gorham, 1962) and the Positive and Negative Syndrome Scale (PANSS; Kay, Fiszbein, & Opler, 1987) can be useful for this purpose; however, these clinician-administered tools require specialized training to establish reliable use.

## What Might Work

There are several exciting areas of clinical research that may ultimately represent effective new approaches to the treatment of schizophrenia. Three areas with compelling theoretical grounding that have demonstrated some successes in early trials are cognitive remediation, peer support, and early intervention.

*Cognitive remediation*: Cognitive deficits (e.g., problems with attention, memory, problem-solving, and information processing) are hallmark symptoms of schizophrenia, and the severity of these deficits is strongly associated with impairments in social and occupational functioning for individuals struggling with schizophrenia

and related disorders (Green, 1996). Cognitive remediation refers to psychological interventions designed to improve cognitive skills, with the hope that improvements in neuropsychological performance may translate to improved real-world functioning. Several remediation techniques have been developed and tested. Some rely on computer-based learning and problem-solving tasks, and others consist of individual or group sessions conducted by a therapist who leads exercises. Trials to date have yielded mixed results (for review see Keefe et al., 2011).

*Peer support*: Peer support refers to interventions delivered by individuals with schizophrenia. These consumer-providers may serve in many roles such as case managers, vocational counselors, and psychoeducational group leaders. Across important outcomes such as hospitalizations, homelessness, symptom severity, and satisfaction with services, no significant differences have been found among patients receiving services from peers and those receiving services from providers who did not have schizophrenia, suggesting that peers can be as effective as "traditional" non-peer providers (Davidson, Chinman, Sells, & Rowe, 2006). There may, in fact, be tremendous value added by virtue of the fact that peers understand the experience of serious mental illness and function as models of coping and recovery. Adolescents, who are likely to be particularly sensitive to peer perceptions, may find the role model component of peer-led interventions to be especially beneficial.

*Early intervention*: Given the unique concerns of patients experiencing a first psychotic episode, and the clinical imperative to initiate treatment as soon as possible, some researchers have investigated the use of specialized services for young people FEP. To date, about a dozen randomized controlled trials have examined the effectiveness of interventions specifically for first-episode psychosis, including APMs, behavioral and CBTs, vocational placement and support, motivational treatment for comorbid substance use disorders, omega-3 fatty acids, behavioral family therapy, interventions intended to enhance medication

adherence, and combined treatments (Marshall & Rathbone, 2011). See Marshall and Rathbone (2011) for a comprehensive review of clinical trials targeting outcomes after FEP.

## What Doesn't Work

Expressive and psychoanalytic therapies (e.g., play therapy) are not recommended for the treatment of schizophrenia in adolescents. There is some evidence to suggest that stimulant medications may exacerbate psychotic symptoms (Berman, Kuczenski, McCracken, & London, 2009). Due to concerns about the potential for long-term cognitive side effects, the use electroconvulsive therapy (ECT) is discouraged for adolescents; however, ECT may be considered for severe, treatment-refractory cases in which other treatment options have been exhausted (McClellan et al., 2001). Projective assessment techniques (e.g., Rorschach tests) are not recommended for the assessment or monitoring of psychotic symptoms (McClellan et al., 2001).

## Psychopharmacology and Schizophrenia

APMs are the primary pharmacologic treatment for schizophrenia (Carlisle & McClellan, 2011). The more commonly prescribed APMs to adolescents are referred to as Second Generation Antipsychotic (SGA) medications. These medications are listed in Table 19.2. It is important to note, however, that SGAs are not exclusively prescribed for schizophrenia or other psychotic illnesses. Some SGAs have Food and Drug Administration (FDA) approval for pediatric treatment of irritability due to autism and treatment of manic/mixed bipolar mood episodes. Further, most SGA treatment of children and adolescents is for "off-label" management of severe aggression and irritability target symptoms. Another type of APM, referred to as First Generation APM, may also be prescribed to address efficacy or tolerability concerns with SGAs.

A major challenge in pharmacologic treatment of individuals with schizophrenia is that

**Table 19.2** Second generation antipsychotic (SGA) medications

| | |
|---|---|
| Risperidone[a] | Ziprasidone |
| Olanzapine[a] | Asenapine |
| Quetiapine[a] | Paliperidone |
| Aripiprazole[a] | Clozapine[c] |
| Iloperidone[b] | |

Created by author (2013)
[a]FDA approved for treatment of schizophrenia for adolescents 13–17 years old
[b]FDA approved for treatment of schizophrenia for adolescents 12–17 years old
[c]Not recommended as a first-line agent because of side effect concerns

adherence to medication is often poor. Individuals may not take medication because of feelings of stigma about the diagnosis, difficulty tolerating side effects, impact of disorganized behavior and disordered thinking (e.g., paranoid delusions) on taking medication consistently, and practical considerations (cost, challenges getting to psychiatric appointments). Possible side effects include obesity related side effects (weight gain, abnormal blood sugar and cholesterol), sedation, involuntary movements (e.g., tremor). Periodic blood work is recommended for safety monitoring, and some medications require ECG monitoring to assess for increased risk of potential cardiovascular side effects (Correll, 2008). APM side effects can be especially challenging to adolescents because of social stigma associated with weight gain and involuntary movements.

Before starting a medication, it is important to discuss with adolescents and their parents any concerns or thoughts they have about medication treatment. Families have unparalleled access to information through the internet, but unfortunately information they review may be outdated or incorrect and any information may raise questions or new fears/concerns. Helpful websites for reputable information include the National Institute of Mental Health (www. nimh.nih.gov/health/index.shtml; National Institutes of Health, 2013), the Food and Drug Administration (www.fda.gov; United States Department of Health & Human Services, 2013), and there are local and national family support/advocacy programs such as the National Alliance on Mental Illness (www.nami.org;

**Table 19.3** Question for providers about new medications

- Why is this medication being prescribed?
- What are the common and serious side effects associated with this medication, and how will side effects be monitored in my child?
- When will the medication start to work?
- How will we know whether the medication is working?
- If the medication works, how long do kids usually stay on this medication?
- Will the medication interact with any of the other medications my child is taking?
- How can I help my child remember to take this medication at the same time every day?
- Can you please send an update to my child's other providers about this medication change?

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National Alliance on Mental Illness, 2013) that also have training/informational programs available to consumers and families.

Medication discussion with parents and adolescents should be an ongoing dialogue since the risk to benefit ratio for treatment may change over time with emergence of new scientific information or changes in the patient's health (symptoms and side effects). Medication tolerability can be improved by changes in dosing, switching medication, strategic use of side effect medication, or making changes to the adolescent's environment or routine (e.g., reducing high caloric beverage consumption to help with weight gain). Adolescent patients may be more comfortable raising medication concerns with their therapist first, since the patient may have more contact with the therapist and he or she may feel uncomfortable voicing negative feelings about the medication to the prescriber. Unfortunately, patients may require treatment with other types of medications to target challenging symptoms or co-occurring mental illness (e.g., antidepressant medication to treat depression episodes). Since medication adherence is a modifiable and important predictor for future health outcomes, it is important for the treatment team to monitor this issue and coordinate efforts to address problems early as they arise. Questions that families may want to ask a prescriber are included in Table 19.3.

## The Prevention of Schizophrenia

### What Works

Indicated prevention is an approach that targets potential interventions for individuals at heightened risk of transition to psychosis, in order to prevent, delay, or ameliorate the negative effects of psychosis and chronic schizophrenia (Fusar-Poli et al., 2013). Although there is compelling rationale for adopting a prevention orientation, a search of the published literature to date does not indicate any one intervention that meets the criteria of three successful trials. The relatively new subfield of CHR or "prodromal" schizophrenia has made enormous gains in the past 20 years toward the identification of high-risk populations.

The CHR phase is thought to be characterized by the appearance of attenuated psychotic-like symptoms occurring with increasing frequency and intensity in the months and years prior to the onset of schizophrenia; however, the construct is not yet refined enough to overcome the ethical dilemmas involved in the possible misidentification and overtreatment of false-positive cases. More research is necessary before effective evidence-based practices can be identified for individuals who are identified as CHR for schizophrenia. Clinicians encountering this patient population are encouraged to monitor psychotic or psychotic-like symptoms and treat comorbid problems (e.g., anxiety, substance use) using empirically supported treatments (Fusar-Poli et al., 2013). Self-report measures of "prodromal" or attenuated psychotic symptoms have been validated against clinician interviews, and may be useful for the purpose of monitoring symptoms over time (Kline et al., 2012).

### What Might Work

Most interventions aimed at preventing the onset of schizophrenia have recruited adolescents and young adults reporting attenuated psychotic symptoms or brief, limited psychotic symptoms, which are thought to characterize the "prodromal" phase

of illness (Cannon et al., 2008). The primary outcome in such studies is the rate of "conversion" (that is, onset of a diagnosable psychotic disorder) in intervention versus control groups. To date, only a handful of research centers have conducted trials within this vein of research (see Marshall & Rathbone, 2011). Promising strategies requiring further replication are outlined below.

*Antipsychotic medications*: Three randomized, placebo-controlled trials have investigated the potential of APMs to prevent or delay the onset of psychosis in identified CHR groups. Olanzapine and risperidone, used either alone or in combination with cognitive behavioral or "needs-based" psychotherapies, have shown some promise toward delaying the onset of psychosis (McGlashan et al., 2006; McGorry et al., 2002; Yung et al., 2011). Across these studies, low rates of conversion among inactive treatment groups have raised significant concerns regarding the possibility that many CHR participants recruited for APM trials may be exposed to potentially harmful side effects without clear benefit. Thus, APMs do not appear to be a viable treatment option for populations meeting CHR parameters as currently defined. As the field works to improve high-risk identification strategies beyond the 20–35 % true-positive rate achieved in the existing literature, APMs may be revisited as a potential intervention for individuals meeting more stringent criteria for CHR status.

*Antidepressant medications*: Although no randomized controlled trials to date have investigated the effectiveness of antidepressant medications to prevent schizophrenia, two independent research groups have noted that within their CHR samples, those taking antidepressants demonstrated lower rates of conversion relative to other naturalistically followed participants (Cornblatt et al., 2007; Fusar-Poli, Valmaggia, & McGuire, 2007). It is possible that low rates of conversion among participants taking antidepressants may be due to misidentification of CHR status (i.e., these participants were never truly high-risk) rather than the effectiveness of antidepressants for preventing psychosis. Given the lower side effect profile

of antidepressants relative to APMs, further investigation of the effectiveness of antidepressants to prevent or delay schizophrenia among CHR patients could be beneficial to the field.

*Cognitive and cognitive behavioral therapies*: To date, evidence on the use of cognitive and CBT for the prevention of schizophrenia among CHR patients has been mixed. Cognitive therapy for CHR patients emphasizes cognitive strategies for coping with hallucinations and thought distortions. In one study comparing the efficacy of cognitive therapy (CT) treatment versus clinical monitoring for preventing onset of schizophrenia among 58 CHR participants, researchers observed a significantly lower conversion rate in the CT group (6 %) relative to the monitoring group (22 %), as well as significantly reduced positive symptoms in the CT group relative to the control group, following 6 months of treatment (Morrison, French, Walford, et al., 2004). Unfortunately, these benefits were not maintained over 3 years (Morrison, French, Parker, et al., 2007). A more recent randomized controlled trial investigating the effects of CT plus risperidone (*n*=43) versus CT plus placebo (*n*=44) versus supportive therapy plus placebo (*n*=28) failed to detect significant differences in either rates of conversion or secondary clinical outcomes (e.g., symptom severity) among the randomized treatment groups (Yung et al., 2011).

CBT also appears to be a viable intervention for the prevention of schizophrenia in high-risk adolescents and adults; however, more evidence is needed to support the usefulness of this approach. Bechdolf et al. (2012) randomized 128 help-seeking outpatients meeting high-risk criteria to either a specialized, "integrated psychological intervention" (IPI) which included CBT, skills training, cognitive remediation, and family psychoeducation, or to a "needs-based intervention" intended to reflect treatment as usual, for 12 months of treatment. At both conclusion of treatment and 1 year post-treatment, the rate of conversion to psychosis was significantly lower in the IPI group (6 %) relative to the needs-based therapy group (20 %; Bechdolf et al., 2012). In a randomized controlled trial comparing CBT to treatment as

usual (N=201), van der Gaag et al. (2012) also found reduced rates of conversion to psychosis (11 % versus 22 %) and greater symptom remission among patients receiving CBT over the 18-month follow-up period. A third group, however, used a similar design (CHR patients randomized to supportive therapy versus CBT), but found no significant between-group differences in conversion rates or magnitude of symptom reduction after 1 year (Addington et al., 2011).

*Omega-3 polyunsaturated fatty acids*: Given some evidence that omega-3 polyunsaturated fatty acids (PUFAs) can reduce symptoms in schizophrenia, convey beneficial effects to the brain, and have no known adverse effects, Amminger et al. (2010) designed a randomized, double-blind, placebo-controlled trial to evaluate the effectiveness of omega-3 PUFAs to prevent progression of psychosis. Participants meeting CHR criteria randomly received either active treatment (n=41) or placebo (n=40) for 12 weeks and were re-evaluated at 6 and 12 months following the intervention. After 1 year, participants in the active treatment group had a significantly lower rate of conversion to psychotic disorder (5 % versus 28 %) and had significantly better functioning relative to those in the placebo group. There were no between-group differences in reporting of adverse effects. Although these results call for replication, omega-3 PUFAs show promise as a safe and effective treatment for CHR symptoms.

*Specialized treatment centers*: Given the unique concerns of adolescents and young adults meeting CHR criteria, some researchers and clinicians have created specialized facilities to treat and conduct further research within this population (e.g., Schultze-Lutter, Ruhrmann, & Klosterkötter, 2009; Yung et al., 2007). Services focused specifically on adolescents and "transition-age" young adults may be more successful at keeping this vulnerable population engaged in mental health treatment than traditional systems, which typically bifurcate at the age when schizophrenia development begins to peak. Early psychosis treatment centers offering wrap-around services including educational support, vocational training, pharmacologic management, and cognitive behavior therapy within an adolescent-friendly context appear to be effective for increasing consumer engagement and improving clinical status among high-risk youth (Granö et al., 2009; Yung et al., 2007).

## What Doesn't Work

The prevention of schizophrenia is a quickly developing field, and practice guidelines are likely to change within the coming years as the clinical literature grows. Clinicians encountering youth who appear to be "high-risk" should be cautioned against overtreating adolescents who report attenuated and occasional psychotic symptoms, but do not meet established criteria for a psychotic disorder. A vignette-based survey of practitioner perceptions and approaches to treating adolescents presenting with symptoms characteristic of CHR status demonstrated that many clinicians would diagnose and treat attenuated symptoms similarly to full-blown psychosis (Jacobs, Kline, & Schiffman, 2011, 2012). Because most youth reporting attenuated symptoms are *not* expected to progress to schizophrenia (Fusar-Poli et al., 2013), we advise a conservative treatment approach that minimizes the likelihood of unnecessary exposure to APMs.

## Conclusion

Although adolescent-onset schizophrenia is considered to be a serious mental disorder, evidence-based treatments can help most teens to not only manage symptoms but also focus on long-term recovery. Early recognition and treatment of psychotic symptoms has emerged as a vital component of effective intervention. Expanding knowledge about schizophrenia among practitioners familiar with adolescents' needs and goals can help to ensure that these youth receive services that are both developmentally appropriate and consistent with established best practices.

## Recommended Best Practice

For the assessment of schizophrenia or other psychotic disorders:

- Use standardized assessment tools and ask questions in a neutral, developmentally sensitive manner.
- Rule out possible medical, behavioral, or substance-related causes for symptoms.

For the treatment of suspected "prodromal" schizophrenia or attenuated psychotic symptoms:

- Monitor symptoms regularly to track changes in frequency, intensity, or distress.
- Address comorbid problems using established, empirically supported treatments.

For the treatment of acute psychosis in adolescents:

- Assess for safety concerns such as suicidal thoughts, grossly disorganized behavior, serious substance use problems, plans that may pose danger to self or others, and inability to provide basic self-care.
- Determine appropriate level of care for initiating treatment.
- Achieve psychiatric stabilization using an APM approved for use in adolescents. Second generation APMs are generally preferred due to their lower side effect profile. Monitor regularly for possible side effects.
- Provide psychoeducation to adolescents and their parents about what is known regarding the causes, symptoms, and effective treatments for schizophrenia. Instill hope.

Once acute concerns subside, focus on recovery:

- Match teens with appropriate educational and vocational services.
- Identify and work to improve areas of skill deficits such as socialization and self-care.
- Use behavior modification techniques to encourage adaptive behaviors.
- Coordinate care through frequent communication with families and other providers.
- Assist clients in developing a crisis plan in case of relapse into acute illness.
- Assess treatment effectiveness and client satisfaction through ongoing data collection.

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# Part III

# Problem Behaviors

# Adolescents and the Media

Elisabeth Bailey and Christopher M. Young

## Introduction

Anyone who has observed a teenager fully absorbed in a live, online video game or texting on a cell phone knows that these technologies play an increasingly central role in their lives. This entry provides an overview of problematic media use and addiction in adolescence and approaches for working with adolescents on these issues.

Media can be broadly divided into "old" media including television, movies, and magazines and "new" media which encompasses computers and the Internet, video games, cell phones, iPods/MP3 players, etc. (Strasburger, Jordan, & Donnerstein, 2010). Most research into problematic media behaviors in adolescents has focused on Internet use and video games. These will be the types of media most frequently referenced in this entry though it is broadly accepted that overuse of all types of media can negatively impact youth. With each new technological iteration,

there are more opportunities for adolescents to access media. This surge in access has coincided with an increase in the amount of time young people spend with media from an average of 6 h 21 min per day in 2005, to a startling 7 h 8 min daily on average in 2010 (Rideout, Foehr, & Roberts, 2010). In their national study, Rideout et al. (2010) report that when media multitasking is taken into account, for example using a computer while watching TV, young people consume a combined total of 10 h 45 min of media time daily on average. Clearly, these trends point to a powerful shaping force at crucial stages of development.

As with other behavioral problems, there appears to be a spectrum of severity from those adolescents who are minimally impacted, to those who develop addictive patterns and have significant functional impairment. Researchers looking at problematic media use have approached the issue from a behavioral addictions perspective (Grant, Potenza, Weinstein, & Gorelick, 2010). The working hypothesis is that addictive patterns of media use are similar to gambling addictions in their underlying etiology and that similar treatment strategies may be effective. This theoretical approach, diagnostics, and evidence base for treatment will be explored later in this entry.

Perhaps the most important question to consider is why are we concerned about these increasing trends in adolescents' media exposure and the sub-set of adolescents who develop media

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addiction? Ybarra et al.'s (2008) analysis of data that included 1,588 children and teenagers, ages 10–15 years found a strong relationship between an adolescent's media exposure to violence and self-reported violent behaviors. Those respondents who reported that most of the websites they frequented featured real people involved in violent acts were significantly more likely than their peers to report "seriously violent behavior, including (1) shooting or stabbing someone, (2) aggravated assault, (3) robbery, and (4) sexual assault (Ybarra et al., 2008, p. 929)." Further, Rideout et al. (2010) found that heavy media users reported lower grades and lower personal contentedness than medium or light media users. Several studies looking at the impact of media exposure to sexual content on teens' behavior have found that heavy exposure is related to earlier and more rapid progression of sexual activity, and higher risk for sexually transmitted disease and unplanned pregnancy (Bleakley, Hennessy, Fishbein, & Jordan, 2008; Collins et al., 2004; Strasburger et al., 2010). With media exposure impacting nearly every aspect of adolescents' development, it is critical to develop a deeper understanding of who is most at risk for serious negative impact and how parents, providers, and communities can respond.

## DSM-5 and Incidence/ Prevalence Rates

There are no behavioral addictions specifically named or outlined in the DSM-IV, with the exception of Pathological Gambling, which is included under Impulse-Control Disorders Not Elsewhere Classified. Proposed changes in the DSM V include the broadening of the category of addictive disorders to "Substance Use and Addictive Disorders" (American Psychiatric Association, 2012), and shifting Gambling Addiction to this diagnostic category. Internet Use Disorder has been proposed as a diagnosis for further study to be included in an appendix of the newest DSM. At this point, there is no proposed category for general media overuse or addiction.

For research purposes, most have adapted the DSM-IV criteria for pathological gambling to look at problematic video game or Internet use. This allows for a conceptual framework based on similar problematic patterns of behaviors related to entertainment, and for differentiation between those who are heavy media users without significant impairment, and those for whom heavy use is associated with functional problems across settings. For example, Gentile (2009) used an 11-item scale based on pathological gambling criteria to determine which youths crossed the threshold from heavy video game use to addiction. In order to qualify as addicted, users had to meet 6 of 11 symptoms, as well as demonstrating Brown's core facets of addiction:

> *salience* (the activity dominates the person's life, either cognitively or behaviorally), *euphoria* or *relief* (the activity provides a "high" or the relief of unpleasant feelings), *tolerance* (over time, a greater amount of activity is needed to achieve the same "high"), *withdrawal symptoms* (the person experiences unpleasant physical effects or negative emotions when unable to engage in the activity), *conflict* (the activity leads to conflict with other people, work, obligations, or the self), and *relapse and reinstatement* (the person continues the activity despite attempts to abstain from it) (as cited in Gentile, 2009, p. 2).

Because these are emerging diagnostic categories related to types of media and means of access that are continually evolving, obtaining accurate incidence and prevalence rates is challenging. Based on a Harris Poll survey of 1,178 American youth between the ages of 8 and 18 years, the prevalence of pathological video game use, based on criteria explained above, was about 8 % (Gentile, 2009). In a 2-year, longitudinal study of 3,034 students in grades 3–8 in Singapore, Gentile (2011) found that prevalence of pathological video game use was approximately 9 % and pointed out that "other samples in other countries yielded similar proportions, including 10.3 % in China, 8.0 % in Australia, 11.9 % in Germany, and 7.5 % in Taiwan" (p. e320).

Using responses to the Young Internet Addiction Test, and Strengths and Difficulties Questionnaire to stratify youth into categories of potential problematic Internet use and problematic

Internet use (PIU), Kormas, Critselis, Janikian, Kafetzis, and Tsitsika (2011) found that 19.5 % of the study sample of Greek adolescents (mean age 14.7 years) demonstrated behaviors consistent with potential PIU, and 1.5 % met the study criteria for PIU. Using similar instruments, Milani, Osualdella, and DiBlasio (2009) found that prevalence of PIU in a sample of 98 Italian adolescents ages 14–19 years was 36.7 %. This wide range of prevalence rates was also observed by Moreno, Jelenchick, Cox, Young, and Christakis (2011) in their review of PIU research looking at adolescents in the US; this review showed that of the 18 studies that met inclusion criteria, prevalence rates of PIU ranged from 0 to 26.3 %. Further clarification and agreement with respect to diagnostic criteria, as well as valid and reliable scales/instruments for accurate measurement, are needed to better understand this phenomenon.

## Biological and Genetic Factors

Advances in a variety of applied research modalities have led to a better understanding of the neurobiology of addiction. Animal models of neurophysiology (Bertran-Gonzalez et al., 2008; Wise, 2009) as well as genetic and neuroimaging studies (Goldman, Oroszi, & Ducci, 2005; Volkow et al., 1995) are just some of the methods used to recognize and comprehend the neural circuitry involved in processes like addiction. Determining why some people become addicted and others do not is key in understanding addictive disorders. While historically much of this focus has been on substances and their interaction with the brain, recent study has expanded to include food (Volkow & Wise, 2005), gambling, and media including technologies such as electronic gaming (Ko et al., 2009).

Addictions activate particular regions of the brain associated with feelings of pleasure and reward. Release of neurochemicals such as dopamine and opiates has been linked to these reward and pleasure centers. With continued use of substances and/or activities that stimulate these centers, tolerance can develop. The increasing need for stimulation of the reward centers to produce

the same heightened pleasurable effects triggers behavioral patterns necessary to avoid withdrawal syndromes. Related theories of vulnerability (Volkow & Li, 2004) propose that individuals with genetic predisposition do not have the necessary amounts of dopamine, or appropriate numbers of dopamine receptors, and therefore have difficulty experiencing normal levels of pleasure in the activities that others typically find gratifying, pleasurable, and rewarding. To increase pleasure, these genetically predisposed individuals may seek out substances or activities that stimulate greater dopamine release, yielding higher reward as well as increased vulnerability to addiction. Other genetic factors associated with addiction include atypical brain circuits associated with drive and self-control, as well as a sub-optimally functioning fronto-striatal circuit (Ersche et al., 2012; Volkow & Baler, 2012; Volkow, Wang, Fowler, & Tomasi, 2012).

While genetic studies of Internet addiction are in their infancy, research suggests that heritable factors associated with substance addiction may account for 50 % or more of the risk (Hiroi & Agatsuma, 2005). In one Korean study researchers found a serotonin polymorphism associated with depression and depressive personality traits in a group of adolescents diagnosed with excessive Internet use as compared to controls (Kim, Lee, & Han, 2006).

Environmental and developmental factors have been also associated with risk for developing addiction. Increased exposure to substances has been associated with substance abuse and dependence (Volkow & Li, 2005). With the ever-expanding presence of the Internet and gaming in young people's daily life, and the related social pressures, the developing adolescent brain may be a uniquely vulnerable target. The risk taking, experimenting, and novelty seeking characteristically seen in adolescence may reflect the incompletely developed brain regions of the frontal lobe that are involved in executive control and motivation. Preclinical studies with cannabanoids and nicotine have shown that neuroadaptations to these substances in the adolescent brain are different than the adult brain (Volkow & Li, 2005). Ongoing research is investigating whether the

neuroadaptations seen for cannabanoids and nicotine will generalize, not only other substances, but to gambling, Internet gaming, and food.

As descriptions of neural circuits involved in reward and self-control continue to be refined, researchers have started to look at these same circuits in teenagers with identified problem Internet use. A variety of modalities have been employed including structural and functional imaging (Han, Kim, Lee, Min, & Renshaw, 2010, 2012; Han, Lyoo, & Renshaw, 2012) and neurocognitive tests (van Holst et al., 2011). The neurobiological profiles of adolescents with PIU are then compared to healthy controls, as well as those with substance addiction.

Beyond pleasure and motivation, the dopamine system has been associated with reinforcement of behavior and attention. Particular polymorphisms of dopamine receptors have been broadly studied in alcohol and pathological gambling (Han et al., 2007). Koepp et al. (1998) initially showed that increased release and binding of dopamine to its receptors occurs during video game play. Han et al. (2007) found that a genetic polymorphism associated with decreased dopamine receptors and linked with increased euphoria, craving, and drug abuse in adolescents was correlated to pleasure, euphoria, and reward dependency in a group of adolescents addicted to video games. In another study using positron emission tomography, Kim et al. (2011) demonstrated that Internet addicts have deficits in dopaminergic receptor availability in striatal circuits similar to deficits in those with substance addictions and behavioral addictions such as gambling (Holden, 2001; Pallanti et al., 2010).

Studies investigating activity of particular brain regions are coalescing as well, not just for differing substances, but also for behavioral addictions like online gaming. Craving, which is considered a hallmark of substance addiction, is most reliably measured through standardized instruments referred to as 'cue-reactivity'. Functional magnetic resonance imaging studies of the orbito-frontal cortex, striatum, dorsolateral prefrontal cortex, and other brain regions have shown activation in substance-addicted individuals when they are shown "cues" including video

or pictures of drug use (Wilson, Sayette, & Feiz, 2004). Ko, Liu et al. (2009) were able to demonstrate the same activation patterns in the same brain regions of individuals addicted to Internet gaming. This may indicate that gaming urge and craving online games share the same neural mechanism as substance addiction.

In addition to neurotransmitter polymorphisms and brain region activity measures, structural changes of grey and white matter volume have also been linked with substance addiction; two research groups have found similar changes in individuals with video game and Internet addiction. In one study by Lin et al. (2012), diffusion tensor imaging (DTI) was used to measure white matter integrity in adolescents with Internet addiction disorder (IAD) compared to controls. Their findings suggested decreased white matter integrity in areas such as the orbitofrontal cortex with its extensions to the prefrontal cortex and limbic regions of the brain, as well as the anterior cingulate cortex and corpus callosum which are all involved in emotional processing, craving, and cognitive control. These findings contrasted from healthy controls and are similar to reduced white matter integrity found in those with cocaine and alcohol dependence. A second study by Han et al. (2012) comparing grey matter volumes in patients with online game addiction to healthy controls demonstrated that the online game addicts had decreases in grey matter volumes in the inferior temporal gyri, right middle occipital gyrus, and left inferior occipital gyrus similar to grey matter losses in others with substance dependence.

Neuropsychological measures have been used to examine behavioral tendencies commonly related to addictive behaviors. It has been postulated that attention cues such as drug-related pictures or words can grasp or seize selective attention because of the heightened sensitization of the brain's motivational system in relation to the addictive substance or behavior (cited in van Holst et al., 2011). Two standardized measures of "attentional bias" are the addiction Stroop task and the dot probe task. The Stroop test is a reaction time test where the name of a color "blue" may be printed in blue or a different color ink.

Reaction time delay and error occur more often when the color of the ink does not match the word. An increased interference effect has been shown in disorders effecting neurocognition including addiction (Lusher, Chandler, & Ball, 2004). The dot probe test similarly has been used to assess attentional bias in substance abuse (Robbins & Ehrman, 2004). In a group of 92 adolescents, those with higher levels of self-reported problematic gaming had greater attentional bias for game cues in the Stroop task and dot probe tasks; results similar to those found in substance dependence and pathological gambling (van Holst et al., 2011).

Ultimately, better understanding of the neural properties of addictions and the interplay of genetic predisposition, environmental interactions, and development will shed light on similarities and differences between addictions. The most obvious difference is the conventional way in which substances get to the brain, through the blood stream, versus via the sensory organs as in behavioral addictions and Internet gaming. With that said, neurobiological studies are beginning to show common pathways once substances and signals get to reward and motivation centers within the brain.

Further neurobiological studies, in addition to epidemiological and treatment studies, will be necessary to inform the best treatments to improve the lives of adolescents who may find their lives derailed by addictions.

## Individual Factors Influencing Risk and Resiliency

Because the definitions and diagnostic criteria of problematic media use and addiction are still being codified, factors influencing risk and resiliency are discussed as they have been studied with respect to pathological video game and Internet use.

Lam, Peng, Mai, and Jing (2009) found that among a cohort of 13–18-year olds in China, male gender was associated with a 50 % increased chance of being addicted to the Internet as measured by the Internet Addiction Test (IAT),

a 20-item self-report scale based on the DSM-IV diagnostic criteria for pathological gambling. This is consistent with studies of PIU in other adolescent populations. In addition to male gender, risk factors for Internet addiction across studies included: drinking behaviors, self-reported family dissatisfaction, experience of stressful life events, frequent interactive online game playing, and use of the Internet to retrieve sexual information (Kormas et al., 2011; Lam et al., 2009).

In terms of psychiatric comorbidity, there appears to be a strong association between adolescent depression and Internet addiction (Ha et al., 2007). Attention deficit-hyperactivity disorder (ADHD) and conduct disorders have been correlated to Internet and video gaming addiction (Gentile, 2009; Kormas et al., 2011; Weiss, Baer, Allan, Saran, & Schibuk, 2011). In fact, in their 2-year prospective study of approximately 2,000 Taiwanese middle school students, Ko, Liu et al. (2009) found that the presence of ADHD was the most important predictor of Internet addiction among all study subjects. Breaking the results down by gender, the presence of hostile traits was the most significant predictive factor for males, while ADHD was the most important predictor for female respondents. Hostile traits were measured using a 20-item scale assessing "dimensions of the hostility construct: hostility cognition, hostility affection, expressive hostility behavior, and suppressive hostility behavior" (Ko, Yen, Chen, Yeh, & Yen, 2009, p. 939). Ko et al.'s (Ko, Yen et al., 2009) research found that social phobia was an important contributing risk factor for females, but not males.

Several theories explaining this significant association between ADHD and Internet or video game addiction have been proposed including the mediating effects of striatal dopamine release during video and online gaming on the dopamine-deficient brains of adolescents with ADHD (Koepp et al., 1998), lack of impulse control necessary to stop play, and attraction to the immediate feedback and reward provided by video games and the Internet (Weiss et al., 2011). Further, it has been suggested that there may be less societal and peer tolerance for ADHD symptoms in girls versus boys, thus making girls

with ADHD more vulnerable for addiction given the social anonymity of video games and the Internet (Ko, Yen et al., 2009; Weiss et al., 2011).

Finally, it should be noted that Gentile (2009) found that pathological gamers spent twice as much time playing video games than peers with non-pathological patterns of use. Rideout et al. (2010) found that there was a significant jump in daily media use from 8 to 10-year olds (7 h 51 min per day) to 11–14 and 15–18-year olds (11 h 53 min and 11 h 23 min respectively). Looking at this study demographically, White adolescents spent an average of approximately four fewer hours with media daily than African American or Hispanic youth. While the direct relationship between these comparative rates of media use in different age and racial demographic groups has not been fully analyzed, it stands to reason that adolescents who are engaging with media most frequently may be at higher risk for the development of pathological patterns of use.

Though there are many proposed theories about the underlying individual risk factors for development of Internet or video game addiction, it is important to remember causal links have not been established and more research is needed to better understand which individual and groups of adolescents are at highest risk.

Research for this entry found scant information directly related to resiliency against the development of media addiction. One could hypothesize, however, that traits and supports antithetical to risk factors may be protective for adolescents. For example, relatively low levels of stress, supportive and positive family and peer relationships, and the absence of depression, social phobia, or ADHD may place adolescents at lower risk for media addiction.

## Familial Factors Influencing Risk and Resiliency

As previously noted, self-reported, general family dissatisfaction was associated with increased risk for Internet addiction (Lam et al., 2009), though factors contributing to this sense of dissatisfaction were not investigated in depth in this study.

Modeling of media use by parents was found to be strongly associated with their children's media use. Woodard (2000) found that children of parents who were "heavy" TV viewers (>2 h per day) spent significantly more time with all types of media than peers whose parents watched less television. Though this does not directly translate to addiction, heavy parental media use may normalize these patterns of use and thus create a higher risk environment for susceptible adolescents. In contrast, Rideout et al. (2010) found that youths who reported their parents set rules and limitations on their media use consumed an average of nearly 3 h less media content per day than youths whose parents did not set rules. Again, while this may not be a clearly causative or protective relationship, it seems reasonable to postulate that less time with media and closer parental supervision will decrease the likelihood of pathological patterns of use developing, or at least would result in earlier detection and intervention.

## Social and Community Factors Influencing Risk and Resiliency

Because there is very limited research evaluating the impact of societal factors on media addition in adolescents specifically, this entry focuses on factors that create environments supportive of heavy media use assuming that this increases susceptibility to addiction in vulnerable individuals.

Historically, there was a clear "digital divide" between higher and lower income households in terms of access to computers and the Internet. With the rise of mobile phones and other portable devices as media platforms, however, this division appears to be disappearing. Roberts and Foehr (2008) report "no relationship between household income and either screen media exposure or overall media exposure among 8-to 18-year-olds questioned in 2004," based on a Kaiser Family Foundation Survey (2010). Demographic data suggests that African American and Hispanic youth are consuming an average of 4 h more media per day than their White peers, which may put them at increased

vulnerability for media addiction; though this is purely observational since studies analyzing the racial or ethnic differences in Internet and gambling addictions are scare (Rideout et al., 2010).

There are a number of community factors that may shape adolescents' relationship with media. A 2004 survey of pediatricians found that, despite American Academy of Pediatrics practice recommendations, only half of providers reported discussed limiting screen time and access with families (Strasburger et al., 2010). Additionally, Strasburger et al. (2010) suggest that American schools have not kept up with media advances and offer limited direct education in media literacy and safety, though other countries such as Canada, Australia, and the United Kingdom mandate media education in schools.

Finally, the fact that media addiction is not yet a recognized disorder limits the ability of researchers, practitioners, and others to agree upon a standardized criteria for evaluation and diagnosis, may dissuade some from considering media addictions legitimate disorders, and slows the dissemination of evidence-based treatment recommendations to guide interventions.

## Evidence-Based Treatment Interventions

### What Works

A search of the research literature did not uncover an intervention that met the criteria of 3 successful trials.

### What Might Work

As previously discussed, there are a variety of common terms but no universal definition or diagnostic criteria established for problematic media and technology use. "Internet addiction" or PIU are two of the more common terms in the literature. Without clarity of an official diagnosis, the lack of treatment studies is understandable. To date, no pharmacologic or psychotherapeutic treatment interventions have received sufficient

study under randomized controlled conditions. A review of the current treatment literature by King, Delfabbro, Griffiths, and Gradisar (2011) found a number of key limitations in the existing studies that ranged from: "inconsistencies in the definition and diagnoses … a lack of randomization and blinding techniques…a lack of adequate controls or other comparison groups…and insufficient information concerning recruitment dates, sample characteristics and treatment effect sizes (pp. 113–114)."

Despite the significant limitations of treatment studies to date, there is general agreement that given the centrality of the Internet and its applications to daily life, the goal of treatment should not be total abstinence, but rather a focus on balanced use with limits to or abstinence from potential problematic applications.

A range of treatments have been offered. Not surprisingly, most follow from recognized treatments for substance abuse and behavioral addictions. A literature review found only one randomized controlled trial published by Du, Jiang, and Vance in 2010 (Chang & Hung, 2012). In this study, a multimodal, school-based group participated in cognitive behavioral therapy (CBT) including: parent training, teacher education, and group CBT. Fifty-six adolescents ranging in age from 12 to 17 years were recruited using Beard's Diagnostic Questionnaire for Internet Addiction. Thirty-two were randomized to receive the 8-session active treatment versus 24 in the control group. While Internet use declined in both groups, the treatment group improved more in time management, emotional state, and regulation ability.

In another multimodal intervention, Shek, Tang, and Lo (2009) used a longer-term 15–19 month multi-level counseling program for 59 children and adolescents, ages 11–18. In this study, the Young Internet Addiction Scale (YIAS) and the Chinese Internet Addiction Scale (CIAS) were used. The program included Motivational Interviewing (MI), counseling, family perspective, group, and case work. With no control comparison, participants showed a decrease in Internet addiction symptom scores, but failed to show improvement in psychological well-being.

Aside from the multimodal approaches, specific therapies have shown some promise. Li and Dai (2009) used the CIAS to identify 38 adolescents meeting criteria for IAD. These adolescents were administered a CBT program specifically designed for Internet addiction. Outcomes showed the treatment group compared to the non-treatment control group had significantly lower CIAS scores. In a 12-session CBT treatment study, Young (2007) treated 114 Internet-addicted clients. After completing treatment, clients were better able to manage their presenting problems, control their computer use, and improved functioning in offline relationships. Limitations to the study included no control group and no reported ages.

Kim (2008) used the Korean Internet Rating Scale to assign 25 Internet-addicted university students to reality therapy (RT) compared to controls. Reality therapy as proposed by the authors informs clients that addiction is a choice and encourages those engaging in treatment to improve their lives by committing to behavior change. Participants worked to identify alternatives to Internet use and received time management training. The authors use RT as a treatment for many addictive disorders and believe that it works for Internet addiction as well. In this treatment study, the RT program reduced Internet use and improved self-esteem.

Other psychological approaches including: motivational interviewing (MI), community reinforcement and family training, and acceptance and commitment therapy (ACT), among others, are in early stages of evaluation and may prove to be helpful interventions (Cash, Rae, Steel, & Winkler, 2012). Recent media attention has highlighted the use of intensive residential treatment programs in some countries. While there is very limited evidence supporting the efficacy of these programs, one in the US—reSTART: Internet Addiction Recovery Program—uses a combination of CBT, 12 step work, drug and alcohol training, MI, ACT, removal of technology, experiential adventure-based therapy, and other interventions. The reSTART" program is in the process of analyzing preliminary results and

evaluating the effectiveness of 45+ day stays in adult patients (Cash et al., 2012).

## What Doesn't Work

Identified treatments that have been thoroughly evaluated and determined ineffective have not appeared in the literature.

## Psychopharmacology and Media/ Technology Addiction

There are no double blind, placebo-controlled trials on pharmacological interventions for Internet or media addiction. There are a number of case series and case reports of a variety of agents used to treat comorbid symptoms including anxiety and depression. Some SSRI's, the antipsychotic quetiapine, and naltrexone, an opioid antagonist, have been cited as having positive results (Arisoy, 2009; Atmaca, 2007; Bostwick & Bucci, 2008). Han et al. (2009, 2010) have conducted two clinical trials: one for children ages 8–12 using methylphenidate, a stimulant that blocks the reuptake of dopamine and norepinephrine; and the other using buproprion for young adults ages 17–29. In the methylphenidate trial, 62 children were diagnosed with attention-deficit hyperactivity disorder and Internet addiction. YIAC scores significantly improved over the 8-week treatment trial. In the young adult study, bupropion sustained release, an antidepressant that inhibits neuronal uptake of dopamine and norepinephrine often used in nicotine dependence, was administered to 11 subjects over a 6-week period in an open label format. Decreases in the YIAS-score, craving for Internet video game play, as well as total game play time were reported. Additionally, cue-induced brain activity in the dorsolateral prefrontal cortex decreased after the 6 weeks of treatment. While these studies are small and lack randomization and controls, they do provide support for more rigorous studies of pharmacologic agents in the treatment of behavioral addictions.

## The Prevention of Media/ Technology Addiction

### What Works

A search of the research literature did not uncover an intervention that met the criteria of three successful trials.

### What Might Work

Across cultures, time spent using the Internet and technology is rapidly expanding and transforming day to day life. Growing research suggests that a minority of individuals are susceptible to excessive use leading to functional impairment consistent with a behavioral addiction (Cash et al., 2012). Prevention strategies proven effective in other areas of problematic behavior are being considered for use in the treatment of Internet and media addiction and are being employed more broadly in some countries (Block, 2008; Peoples Daily Online, 2007). Regulation of Internet access in home and school settings, and more broadly limiting societal access, are strategies used by some countries. In China where Internet use has been identified as a significant problem, laws have been enacted discouraging more than 3 h of game play at a time for those under age 18. In South Korea, Internet addiction has been identified as a major health concern. In an effort to regulate use, Internet access has been banned between midnight and 6:00 am for children and adolescents less than 18 (Block, 2008).

School-based prevention strategies likewise are in their infancy. One study, however, attempted to evaluate an empowerment education program (EEP) and its impact on Internet games addiction, empowerment, and stress in 48 middle school students in South Korea. Their findings showed that those exposed to the EEP program had lower Internet games addiction scores versus controls; this finding is encouraging and warrants further study (Joo & Park, 2010).

### What Doesn't Work

No research to date has been documented that show there are primary prevention programs that are ineffective.

## Recommended Best Practice

The lack of agreement on clear diagnostic criteria for media and technologies addiction, as well as limited prevention and treatment studies inhibits our ability to make best practice recommendations. Many features of PIU are, however, characteristic of substance and behavioral addictions. With guidance from the substance abuse and behavioral addictions literature, and considering the rapidly growing body of research in this area, general recommendations can be offered. Given the pervasiveness of the Internet and media in everyday life including expected use in school and at work, a recommendation of total abstinence is increasingly less realistic. Limiting specific online applications, as well as balance and relapse prevention will more likely be the focus of therapeutic work.

As the research base continues to grow, a better understanding of risk and resiliency factors from individual to family and community will inform the treatment literature. At this time perhaps some of the most promising treatment interventions being developed are multimodal and include components of individual counseling, group therapy, and health education.

In the process of performing a comprehensive evaluation, pediatric providers and mental health specialists should be incorporating questions about adolescents' media use and their access to media into their exams. For example asking, "How much time is your child spending with media daily? Does your child have a computer or electronic devices in their bedroom?"

The American Academy of Pediatrics has made recommendations for screen media exposure in young children. Similarly, the American Academy of Child and Adolescent Psychiatry has published their "Facts for Families" providing

facts and guidance about the use of the Internet and video games.

Parents should be encouraged to educate themselves about media and technology their adolescent is accessing, and to monitor their adolescents' media use.

Parents can:

- Become comfortable using the Entertainment Software Ratings Board's video game rating system as a guideline to content.
- Play online and video games with their children or investigate the content.
- Set clear rules about game content and playing time both in and outside of the home.
- Warn about the potential serious dangers of Internet contacts and relationships while playing games online.
- Talk with other families about Internet and video game rules.
- Encourage children and adolescents to engage in online educational activities.
- Remove computers, TVs, and video game consoles from bedrooms, turn off all electronic media before bedtime.

Providers can:

- Become familiar with the AAP and AACAP guidelines around screen time and media use and routinely offer guidance to adolescents and families.
- Ask parents and adolescents directly about access to media and the amount of time spent with media on a daily/weekly basis.
- Treat commonly co-occurring disorders such as depression, anxiety, and ADHD.
- Stay current with evolving research and treatment recommendations.

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# School Failure and School Success

<span style="font-size:2em">**21**</span>

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## Introduction

School failure is an important worldwide issue, leading to underemployment (unemployment or job dissatisfaction) and a lower quality of life. The overall dropout rate in the United States is 10–25 %, depending on how it is reckoned. But it is common for the most struggling high schools to lose 25–50 % of their students between 9th and 12th grade, and on any given day, 10–20 % of the student body will be absent from school. Overall, rates of dropout and truancy have declined somewhat over the last decade, but not in some areas, such as in low-income families and among other subpopulations. Many methods of keeping adolescents in regular attendance at school are widely reported but not thoroughly evaluated.

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## Definitions

We describe issues of *school failure* in terms of dropout and truancy. The term *to drop out* is widely used in reference to the phenomenon of youth who do not "finish" high school. As a noun or adjective it is one word, *dropout*. That raises the question, What does it mean to finish? In the United States, students are expected to complete 12 grades. Students in 12th grade (usually aged 17 or 18 years) who meet standards set by their local education authority receive a graduation diploma or a certificate of completion. It is different in other parts of the world. In many countries, the last 3 years of high school are optional. There are often national examinations, at different levels, in these years, enabling youth aged 15 or 16 to leave school with viable credentials. Thus in countries where schooling is readily available, the term *dropping out* may refer either to leaving school before passing any recognized exams, or to leaving unqualified to pursue employment opportunities of personal fulfillment. In developing countries, schooling is limited. For example in Liberia, where I (first author) have first-hand experience, schools have rooms and teachers sufficient for only one-third of children wanting to attend.

Even within a single country, how and when dropout and truancy are measured greatly influences the reports of incidence and the perceived magnitude of the problem. Moreover, dropout should not be seen as a single event. Although

there is a moment of time when circumstances meet some criterion for dropout, it is usually the culmination of a long-term process of increasing alienation from the school system.

Most high schools in the United States set goals of 90–95 % average daily attendance; struggling schools typically reach about 88 %. Within the broad spectrum of *absenteeism*, the term *truancy* simply means being absent from school without permission—also referred to as *absenteeism*. It is the interpretation of "permission," and its vagaries across schools and age groups, that creates confusion. For example, one school district may expect a parental letter of explanation for an absence of up to 3 days, and a physician's note beyond that. Another may set different time limits or require different levels of explanation. (In my last year at high school, I [first author] would write "please excuse Peter's absence" [without saying why] and sign it myself, as I was privately boarding away from my parents and all the teachers wanted was a letter on file.) Thus thousands of days may not be counted that might otherwise be included under strict definitions and monitoring of truancy. While nearly all schools diligently document absences, most will pursue issues of truancy only when it is a significant and obvious problem for individual students. Up to *one-third* of all absences may be classified as truant, depending on the local definition. In the United States, students who have higher absenteeism generally have lower scores on the National Assessment of Educational Progress reading assessment (National Center for Education Statistics, 2012).

As noted, this chapter focuses on dropout and truancy. More generally *school failure* may be defined as dropout in any form, truancy, being suspended or expelled, failing, or repeating classes, or not "graduating" by age 19 (or 22 with certain disabilities) in the US public school system, or the equivalent outcomes elsewhere.

## Incidence of Dropout

The US Department of Education reported a "status completion" rate of almost 90 % in 18–24 year olds in the year 2009, meaning that 90 % of 18–24 year olds who are not enrolled in high school have obtained a high school diploma or alternative credit (National Center for Education Statistics [NCES], 2011). The implied converse figure, a 10 % dropout rate, is socially important—because it indicates how many young adults for whom school has been unsuccessful. Even if some of these individuals enroll in high school in their 40s and complete a General Education Development (GED) award, as some do, the publicly mandated school system has failed to provide fundamental education in a timely way. Other ways to measure this phenomenon include the "event" dropout rate, referring to the percentage of students aged 15–24 in 10th–12th grade who left school in the past year, without a certificate (3.4 %). This (lowest) measure is favored by school districts (Kemp, 2006). All these rates fell by about one-third in the 1960s but reverted by a few percentage points in the 1970s. Since then, rates have been decreasing gradually (NCES, 2012). Another way to measure graduation and dropout is the averaged "freshman" graduation rate (AFGR), which is an estimate of the number of regular diplomas issued in a given year divided by an estimate of the averaged enrollment base for the incoming class 4 years earlier (4 years is US-specific; number of years used to calculate will vary depending on the number of years of secondary education). According to Afterschool Alliance (2009), approximately 7,000 students on average drop out of school every day.

Another socially important way to measure dropout is to track those entering ninth grade who quit school within the subsequent 4 years ("cohort" rate). Approximately 25 % of students who entered 9th grade in the class of 2007–2008 did not graduate with their class 4 years later. This method of measurement is favored by some (e.g., Fitzpatrick & Yoels, 1992), because it indicates a failure by the school system even though at least one-third of such dropouts are temporary. On the other hand, this measure overlooks those who drop out before ninth grade, an incidence that can be significant for some populations (e.g., migrant farm workers; Martinez & Cranston-Gingras, 1996). Interstate differences

are large; recent AFGR of public high school students varied from 65 % (New Mexico) to 91 % (Wisconsin). Dropout is significantly greater in the southern and western United States (NCES, 2011). It would seem investigations of state differences would tell us much about risk and protective factors in school failure, but little causal analysis is available except that the status completion rate is 63 % among foreign-born Latino youth, compared to US-born Hispanics at 84 % for "first generation" Hispanics and increasing for higher generations (National Center for Education Statistics, 2011). The NCES methods of reporting dropout, especially for African Americans, have been seriously challenged by the Manhattan Institute for Policy Research (Greene, 2002), who put the graduation rates much lower based on differences in definition and sampling.

An appreciation of the incidence of dropout is further complicated by the practice of school districts' typically identifying a student as dropped out by such definitions as "absent for 30 consecutive school days without a request for transcripts from another school." While such criteria are functional for schools, they are simply different from those used by NCES in national reports.

Rates vary considerably across schools and social conditions (Dowrick & Back, in press). In small high schools in stable communities, over 90 % of students finish; in large high schools in less stable, low-income communities, fewer than 50 % complete in 4 years. Youth living in families with incomes in the lowest 20 % are 5 times as likely as their peers from the top 20 % in the income distribution to drop out of high school (NCES, 2012; the gap is 15 % less than in 2005). Youth with disabilities are even more likely to drop out, at five times the overall average. Dropout rates also vary across the major ethnic and linguistic groups. Asian Americans have lower status dropout rates than Whites, though not significantly lower. The rate for African Americans is over 50 % higher; for Latinos and Native Americans, two or three times higher (NCES, 2012). Boys are less likely to graduate than girls, and this difference increases within the settings and groups most at risk.

Internationally, the education system varies in regard to requirements, curricula, and resources. Success in school is highly dependent on what the country can afford and on government priorities. Industrialized countries tend to have rates comparable to those in the United States; for example, the Netharlands has a net secondary school enrolment rate of 88 %, the same as the USA (United Nations Children's Fund [UNICEF], 2012). Many other countries do not have free and widely accessible schooling. In these places, high school attendance may be as low as 5 % of any age group, favoring the (wealthy) boys, especially where the girl's job in life is to procreate and support family. In the two most populated countries in the world, China and India, high school attendance for girls in rural areas is extremely low—less than 5 %—although educational prospects are far better in the cities (Bhakta, Hackett, & Hackett, 2002; Hu, 2012). In Rwanda, the net secondary school attendance rate is 5 % for both boys and girls (UNICEF, 2012).

## Implications

For individuals who do not finish or regularly attend school, there is an expected lower quality of life; nationally, there is lost productivity. Those who finish high school are more likely to get well-paid jobs, to gain higher education of their choice, and to participate in the democratic process (Dowrick & Back, in press). In Norway, high school dropouts have a significantly higher risk of unemployment, and therefore other risks, such as not receiving medical benefits, than those who graduated from high school (De Ridder, Pape, Johnsen, Westin, Holmen, & Bjorngaard, 2012). Those who do finish high school are more likely to be in good health. Whereas the dropout rate has decreased from the levels of 40 years ago, the consequences have increased in that the earning power of educationally unqualified youth has been halved in that time. Youth who drop out have higher rates of unemployment, are at greater risk of drug and alcohol excesses or criminal activity, but are more likely to have been enrolled

in adult education and training programs. Youth who drop out spend more time in jail and less time in shopping malls (personal spending is a major factor in economic growth). If a program that costs $825,000 prevents one dropout, it breaks even with the costs to the individual and society (lost wages, public and private benefits). It is estimated that in the United States that the financial costs per high school dropout range from $700,000 to $1,000,000 (Cohen & Piquero, 2009; 2011 dollars). If that would-be dropout were also diverted from becoming a heavy drug user and career criminal, $2,000,000 would be a fair price (based on Cohen, 1998; 2011 dollar equivalents). Consequences of dropout also put significant strain on domestic programs, in addition to individuals and families, thereby costing the nation extensively (Amos, 2008; Cohen & Piquero, 2009).

## Theories to Guide Prevention and Practice

Adolescents become truant or likely to drop out when they *dislike school*, combined with either (a) weak incentives to stay or (b) strong incentives to leave (Dowrick & Crespo, 2005). Many risk and resilience factors contribute to liking or disliking school, and to the incentives to stay or leave. Most published research indicates that combinations of factors, never single factors, are needed for school failure to occur.

When are there weak incentives to attend school? The value of school seems less important when one's parents and family members have little education, unless the family is outspoken in promoting more education. Incentives to stay in school are weakened when pupils' anticipations of the future are bleak or empty (Dowrick, Tallman, & Connor, 2005). Failing and expecting failure are interrelated, as the theory of self-efficacy makes clear (Bandura, 1993). As a consequence, teachers encourage or discourage their students on the basis of their own (i.e., the teachers') self-belief in working with struggling pupils. Many youth who believe in the value of education find their school incompatible and hostile toward their goals (Dowrick, 2007).

What are the incentives to be somewhere other than school? Peers are a significant influence, as truancy is seldom a solitary activity (Corville-Smith, Ryan, Adams, & Dalicandro, 1998). Sometimes immediate needs or short-term opportunities will tip the balance for students who are discontent (Jordan, Lara, & McPartland, 1996). These opportunities can range from openings to earn just minimum wages in a local retail franchise, to life-changing enticements to sell illicit drugs. For students who drop out because classes are uninteresting or do not offer real-world learning, an education is less important than work experience (Balfanz, Herzog, & Mac Iver, 2007). Girls may skip school or leave because of pregnancy. Youth in low-income families may feel a responsibility to contribute a regular paycheck to the household. Such is frequently true in low-income communities and among migrant workers.

Why might youth dislike school? The most important reasons are being academically unsuccessful (Kemp, 2006) and/or experiencing negative social outcomes. The two can overlap because poor grades and repeating classes are damaging when the failure results in shame or separation from a peer group, especially when literacy skills are well below par. For youth in trouble at school, there emerges a vicious cycle, in which the institutional response to an aberrant behavior sets up a negative emotional reaction to create more trouble.

## Individual Factors

There has been considerable research on the factors contributing to dropout. From the individual's viewpoint, the most general risks posed to succeeding in school are academic performance (poor grades, repeating a grade, low literacy), misconduct and drug use (Dowrick, Leukefeld, & Stodden, 2005), and incompatibility with school (ethnic, linguistic, social; Vitaro, Larocque, Janosz, & Tremblay, 2001). See Table 21.1 for a list of risk and resilience factors believed to have the greatest influence on school success or failure.

**Table 21.1** Factors of risk and resiliency in school failure (dropout and truancy)

| Risk | Resiliency |
|---|---|
| *Individual factors influencing risk and resiliency* | |
| Incompatible with school | Belief in the future/value of education |
| Feeling ignored | Feeling valued/challenged by teachers |
| Poor school performance | Grades match academic ability |
| Low literacy | High levels of engagement |
| Low self-efficacy | High self-belief |
| Misconduct, delinquency, drug use | Sports/extracurricular activities |
| *Family factors influencing risk and resiliency* | |
| Low family socioeconomic status (SES) | Parent is involved in child's education |
| Receives public assistance | Medium-high family SES |
| Unstable employment | Stable employment |
| Being (or having) a teen parent | Family support for a teen parent |
| *Social and community factors influencing risk and resiliency* | |
| Neighborhood factors | |
| Low neighborhood SES | High neighborhood SES |
| Few employment opportunities | Visible employment opportunities |
| Adults and peers with low achievement | Adults and peers with high achievement |
| School factors | |
| Culturally mismatched | Culturally compatible instruction |
| Tracking with low achieving peers | Supportive mentor or teacher |
| School too large, impersonal | School size not threatening |

*Note*: Items represent a short list of the most important factors identified in studies and reviews. Table created by author, Peter W. Dowrick (2013)

Special populations have additional risk factors. Although disabilities are predictive of school failure, low intelligence measured by IQ is not as predictive as the risks listed above. In the United States, the term "learning disabilities" refers, not to overall cognitive deficits as it does in most other countries, but to an uneven development in which there is a discrepancy between core academics and other areas of performance. There is little evidence that learning disability, on its own, leads to failure in school. Other risk factors—from the individual, family, school, or community—are necessary to act in combination with learning difficulties to produce negative outcomes.

Many studies have examined the large representation of youth with emotional and behavioral disorders (EBD) in the dropout statistics, and have found EBD to be a significant predictor of dropout and truancy in studies of at-risk high school students (e.g., Suh, Suh, & Houston, 2007). Youth with EBD, especially conduct disorders, experience school failure in more ways and more often than students in any other category (Rylance, 1997). Students with EBD also get into more fights in school, a significant predictor of dropout among at-risk youth (Suh et al., 2007). These youth also experience the worst postschool outcomes, such as unemployment, criminal involvement, or family dysfunction. This is true in many countries. For example, a Portuguese study of male offenders who dropped out of school indicated that emotional and behavioral difficulties played a significant role in early school dropout (Saraiva, Pereira, & Zamith-Cruz, 2011).

Research on high school failure in mainstream families also indicates the complexity of contributing factors. For example, in a study of hundreds of "middle class dropouts" by Franklin and Streeter (1995), there were high rates of mental health disorders, substance abuse, family problems, learning disorders, and difficult relationships at school. Involvement with drugs or other delinquency often occurs among truant youth and increases the risk of dropping out of school. Despite debate, recent research illustrates that drug use does contribute independently to dropout, as opposed to simply presenting a symptom of a larger issue. When drug users and non-users are matched on a wide array of characteristics, drug use is associated with dropping out, controlling for all other factors (Gasper, 2011). Similarly, in a study of high school students in Cape Town, South Africa, there was a significant association between methamphetamine use and high school non-attendance, compared to students who were not using substances (Pluddemann, Flisher, McKetin, Parry, & Lombard, 2010).

However, many students experiencing failure do stay in school and "complete." Results of research in this area are typified in a classic study by Finn and Rock (1997), who studied 1,800 high school students from ethnic minority families in low-income neighborhood friends, systematically sampled from a large number of schools. They measured "school engagement" (i.e., liking school) for students identified as succeeding in school (vs. failing), while eliminating other personal and family differences. They found large, significant differences in the levels of engagement, with evidence for disliking school being a strong predictor of skipping school and/or dropping out. Although school engagement is an arguably multidimensional construct, measures of global engagement (including behavioral, cognitive, and psychosocial aspects of engagement) reliably predict school dropout in longitudinal (e.g., Archambault, Janosz, Fallu, & Pagani, 2009; study in Quebec, Canada).

In many countries, immigrants who speak another language are much more likely to drop out of school. Studies in Canada have found dropout rates up to 75 % for second-language learners, rates correlating inversely and positively with proficiency in the language of instruction (Worrell, 1997).

There is much research reporting on the importance of self-efficacy—belief that one can succeed—and perseverance in the face of adversity. Having a specific positive image of the future may be crucial to remain engaged in a challenging situation (Dowrick, 1999, 2012). For example, Dowrick, Tallman and Connor (2005) found superior outcomes for special needs students when they made videos explicitly of the youths' future life plans to show what their lives could look like in 5 years' time. In an extensive review of positive youth development programs, Catalano, Berglund, Ryan, Lonczak, and Hawkins (2002) expressed disappointment that few well-documented interventions addressed the resilience factor of positive futures (although nearly all addressed self-efficacy). The multiple ways in which learning from the future may be emphasized to support success at school (Dowrick & Back, in press) are topics for further research.

## Family Factors

The family environment has a considerable influence on academic success. Of the many family factors contributing to risk and resiliency, most are related to the child's developmental progress and socioeconomic environment. Factors such as social and economic status (SES) and employment status of parents are key to a student's risk of failure. Children often achieve education equal to that of their parents and siblings. In general, instability in the family environment is a significant risk factor. Adolescents from unstable families are more likely to engage in problem behaviors, including truancy (Fomby & Sennott, 2013). Family stability is important—more important than status. Children of parents who remain unemployed and on welfare are more likely to succeed than children of parents who fluctuate between employment and joblessness. Research on teenagers in foster care indicates a higher than usual rate of personal problems and difficulty in school such as suspension, expulsion, and repeating a grade (e.g., Zima, Bussing, Freeman, Yang, Belin, & Forness, 2000).

Parents' involvement in their children's education can have a positive effect. Large data studies have indicated a positive influence of parental involvement on youth staying in school, even when the youth have low academic achievement or are from low-income families (e.g., Jimerson, Egeland, Sroufe, & Carlson, 2000). Boys are likely to get less educational support (than girls) from their parents (Carter & Wojtkiewicz, 2000). Parent involvement and child outcomes are affected by parenting style and by the family's socioeconomic status. Often parents from foreign or low-SES backgrounds will defer to the teacher's authority in making decisions regarding their child's education and avoid advocating for change in the school setting (Fischer & Dowrick, 2003). Children who lack parental involvement from either biological parent have the worst outcomes in terms of dropout (Song, Benin, & Glick, 2012).

Being a teenage mother increases the risk that she will drop out of school. In a recent study of

people who dropped out of high school, 25 % of participants cited pregnancy and parenting as the reason they were forced to stop their education (Meeker, Edmonson, & Fisher, 2009). This risk is carried over to the next generation, as children of teenage mothers also perform poorly in school.

However, the level of risk generated by having a child while in high school also depends on the available support system and the mother's values and academic goals (Stevenson, Maton, & Teti, 1998). If there is family support available to the mother, including some childcare, the mother is more likely to return to school. Success then depends largely on the mother's previous academic success and educational goals. Children whose mothers gave birth to them as teenagers are more likely to perform poorly on academic tests and to be held back a grade in school. Teenage parenthood is related to factors such as low SES and larger family size, which affect the academic success of children. However, the impact of the risk is only half as great for the child as it is for his or her teenage mother (Levine, Pollack, & Comfort, 2001).

## Social and Community Factors

Where a family lives has an influence on risk and resiliency. Neighborhoods with low socioeconomic status are associated with increases in school dropout and truancy. Low-SES areas have limited employment opportunities, high family mobility, and many adults with low educational attainment. Communities in which educational attainment is not valued and consequently not achieved are communities in which school children are more likely to fail (South, Baumer, & Lutz, 2003). The reverse of these factors also promotes resiliency. Community examples of high educational participation and attainment serve as protective factors for youth. Schools that serve these neighborhoods are often fraught with poor teaching and high attrition, leading to students' feeling detached from school and more attracted to deviant behaviors.

Peer educational behavior has an important influence on academic success. A student whose

peers are frequently truant or have already dropped out of school is more likely to participate in the same activities. That is, affiliation with deviant or dropped-out peers has a strong effect, presumably through modeling and engagement in activities incompatible with school-based education. Youth whose peers attend school regularly and graduate are likely to do the same. At-risk Latino students cite peer pressure as a primary reason for dropout (Behnke, Gonzalez, & Cox, 2010). Low social acceptance by peers has been identified as a risk factor in some studies and not in others—it may be a marker of behavior and academic problems or it may be a summary of them.

Conversely, teachers and peers influence resiliency. Teaching can improve achievement when it is culturally relevant and conducted in a way in which students are supported but moderately challenged. Teaching in a culturally relevant way results in a higher level of student engagement in school activities (Nation et al., 2003). Education requires working with, rather than against, cultural norms. Bergeron (2008) stresses the importance of culturally responsive teaching, which encourages the teacher to respond to students in ways consistent with their culture that build and sustain meaningful, positive relationships. Minority students begin school with enthusiasm, but these feelings are often lost early, and by high school it can be too late.

Social and environmental surroundings have a great deal of influence in the risk and resiliency of adolescent school failure. Collective school efficacy (administrators and teachers' beliefs that they can achieve good academic outcomes) is just as important as the self-beliefs of students (Bandura, 1993). For example, a comparison across 79 elementary schools showed that students from "disadvantaged" backgrounds, based on family income, education, and ethnicity, performed significantly better in schools in which staff reported high levels of belief that they could produce excellent academic standards of student achievement. A study of 522 ethnically diverse, low-income urban youth, indicated that teachers' high expectations had a generative effect on youth academic outcomes, while teachers' low

expectations had a disruptive effect (Benner & Mistry, 2007). Similarly, in a study of reasons for dropping out, two-thirds of respondents cited low expectations from teachers; slightly more (70 %) said they were confident they could have graduated if more had been demanded of them (Balfanz et al., 2007). The same is true in Britain: many young people who are truant cite poor relationships with teachers, particularly low expectations from those teachers (Attwood & Croll, 2006).

School size can affect the achievement of students. "Optimal" high school size has been found to be dependent on community factors such as SES. Schools in poorer communities benefit from being even smaller than those in more affluent communities. High schools of four grades/years are best limited to 1,000 pupils. In low-SES areas, schools should be even smaller, around 600, to achieve equity in student success (Howley, Strange, & Bickel, 2000). Note that many high schools with significant high school failure problems have 2,000–5,000 students.

Students benefit from having positive relationships with adults in the community, although mentoring alone has demonstrated mixed effects. Youth involved in high-quality, secure relationships are more independent, more persistent and more socially competent (Bergin & Bergin, 2009). In a study in the Netherlands, "mentoring and coaching" was found to have a mixed impact on individual dropout decisions (De Witte & Cabus, 2013). Mentoring can be detrimental to failing students when they are introduced to new peers who are also doing poorly. But mentoring is helpful when it includes positive role modeling, genuine caring, and skill building. Naturally occurring mentoring relationships, for example, with relatives or teachers, are often mentioned by at-risk students as a reason that they succeeded in school. In a study of natural mentoring for urban Latino high school students, the number of reported mentors predicted fewer absences, higher educational expectations, and a greater sense of school belonging for students (Sánchez, Esparza, & Colón, 2008).

Neither schools nor community settings function independently. A study of the Boston Urban Youth Foundation, a community-based after-school truancy prevention program for urban middle school youth, demonstrates the impact of committed individuals in a community (Rodriguez & Conchas, 2009). The program emphasizes individual case management, mentoring by an adult in the community, academic skill building, a positive peer group, and vision casting of individual goals. Students involved in the program identified four dimensions of the program that influenced their (re)engagement with school: (a) the importance of a space that promotes peer relations, (b) a program incentive structure, (c) social networks, and (d) youth advocacy.

Community members, culture, and schools are all intertwined in adolescents' educational experience. Communities that provide encouragement and models for school success can influence children to complete high school and contribute to their plans for postsecondary education or employment. Overall the findings remind us of the need for multiple characteristics and events to be present for truancy and dropout to occur, or to be prevented.

## Evidence-Based Treatment Interventions in Community Settings

Individualized assistance of some intensity may be necessary for youth most at risk, most difficult to support, who have not dropped out so much as "been dropped," for example, expelled or placed in a restrictive institution (VanDenBerg & Grealish, 1996). In the early 1990s, MacFarquhar, Dowrick, and Risley (1993) collected data from 15 programs in 12 states through structured interviews with experts in the field. These programs were for the most seriously emotionally disturbed youth, who required multiple agency support and were frequently sent to out-of-state institutions. The average youth had four prior psychiatric hospitalizations and up to 100 % had quit school at least once after extensive truancy, although most were attending an institutionally provided school program. The objectives of these individualized assistance programs are to return the child to his or her home

community and a regular public school by providing suitable "wrap-around services." This level of support is complex and demanding (McGinty, McCammon, & Koeppen, 2001). Hence it is available much less than recommended.

The programs whose staff and administrators were interviewed reported high levels of success. For example, the Alaska Youth Initiative reported all 35 youth placed out of state were returned to community-based living in Alaska in 1991–1992, at one-third the cost of institutional placement. Within 4 years, over 30 of these youth were maintained in the community until they aged out of the child mental health system. Nationwide, 75 % of administrators identified the top factor in success as using either an interagency team or the talent and commitment of staff.

Program leaders concurred in identifying the following 13 key features:

1. Program services are tailored to fit the youth, not the youth fit into the existing services.
2. Services are youth and family centered.
3. Flexible funding to permit flexibility in programming.
4. Programs work under a policy of unconditional care.
5. Collaborative planning and management.
6. Normalization is emphasized throughout all treatment.
7. Use a community-based care approach.
8. Intensive case management.
9. Funding must be extensive enough to provide whatever services are needed for significant effect with an individual.
10. Treatment planning and implementation strive toward less restrictive alternatives.
11. Accountability.
12. Services based on appropriate outcome data.
13. Specifically trained and supported staff.

## Evidence-Based Treatment Interventions in Residential Settings

A completely different approach is the use of alternative schools (which may or may not be residential) provided in about 40 % of school districts, often presented as a last chance before being expelled (NCES, 2002). Some students become less "at risk," but many do not return to their home schools, let alone finish. Losing the gains on returning to the home school occurs thanks to a lack of effort to transfer the new skills to the home environment, and the likelihood of negative peer influence.

By contrast, some minority groups do well in alternative settings (Nyberg, McMillin, O'Neill-Rood, & Florence, 1997). For children of migrant farm workers (Latinos), the US Department of Education had a residential program that was once popular and effective (Martinez & Cranston-Gingras, 1996). This program was essentially a boarding school offering strong support in bilingual education. Given that it was government sponsored and the population has unique features (extreme transience, in particular), it seems difficult to generalize its success to other settings.

One form of alternative schools, used internationally, emphasizes career and technical skills, often called Career and Technical Education (CTE) programs in the United States. Because traditional high school curricula were developed with very specific goals, often leading to university-level education, CTE programs offer alternative courses and qualifications to enable students with differing goals to participate in high school courses and graduate with a useful qualification. In general, those countries with higher graduation rates (e.g., Germany, Sweden, Austria) also have higher rates of CTE program graduates. The converse is true in countries with lower graduation rates, such as Italy and Spain (Lamb, 2011).

## Psychopharmacology

Some medications are widely used for mental health disorders that interfere with succeeding in school. For example, amphetamines (such as methylphenidate/Ritalin) are widely used for attention-deficit/hyperactivity disorder; fluoxetine/Prozac is used for teenage depression; risperidone/Risperdol for conduct disorder. Adolescent disorders amenable to psychopharmacology are

not listed among the main predictors of school failure, with the exception of conduct disorder. In our review of the literature, we could find no systematic attempts to incorporate medications into treatment programs for dropout or truancy.

## The Prevention of School Failure

### What Works

There are a number of recent reviews of prevention programs that bear on this topic. For example, Wilson, Lipsey, Tanner-Smith, Huang, and Steinka-Fry (2011) conducted a meta-analysis, including 548 reports describing 167 studies, of prevention and intervention programs aimed at primary and secondary students for increasing school completion or reducing dropout. Catalano et al. (2002), with support from a National Institute of Child Health and Human Development grant and a number of notable consultants, reviewed 77 "positive youth development" programs with published field research. They identified 25 programs that met standards for high-quality evaluation research with adequate size and design, outcomes statistically reckoned to be effective in comparison conditions. Other reviews related to the prevention of school failure include those by Klima, Miller, and Nunlist (2009), ICF International and National Dropout Prevention Center/Network (2008), Hammond, Linton, Smink, and Drew (2007), Lehr, Hansen, Sinclair, and Christenson (2003), Prevatt and Kelly (2003), South et al. (2003), Baker, Derrer, Davis, Dinklage-Travis, Linder, and Nicholson (2001), Hatch (2000), Goldschmidt and Wang (1999), Orthner and Randolph (1999), and reviews by Greenberg et al. (2003) and Nation et al. (2003). In taking a close look at the original prevention studies, only a handful report findings in terms of dropout data (and only one with truancy data; Tierney, Grossman, & Resch, 1995, for Big Brothers Big Sisters).

It is notable that no prevention program with dropout data has been thoroughly evaluated three times in experimental designs with published replications. However, some interventions such as the Valued Youth project have one solid evaluation reported, with additional claims of replications and "comparable evaluations" that are not published. Other interventions, such as the Seattle Social Development Project (O'Donnell, Hawkins, Catalano, Abbott, & Day, 1995), have been replicated with promising data related to school success, such as better educational attainment, mental health, and sexual health (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2008)—but not specifically dropout. According to Wilson and colleagues (2011), dropout prevention and intervention programs, regardless of type, are likely to be effective if they are implemented well and are appropriate for the local environment. Our analysis is that effective programs to improve attendance and staying in school, as supported by data, include at least five of the seven design features listed below. That is, if programs are defined by their characteristics, not by their labels, then we can identify replications of effective programs.

Characteristics that work.
1. Instruction in academics and other learning with high-quality individualized mentoring.
2. Activities valued by youth, indicating positive futures.
3. Additional resources with dollars and community connections.
4. Family involvement, plus cultural respect and adaptations.
5. School-wide policies and emphasis on subsets of local risk and resilience factors, promoting high expectations and appropriate support.
6. Strategies based on theory and best practices, in which implementation is sustained and data driven, with fidelity.
7. Youth choices and self-determination.

The effective programs, with above characteristics, are comprehensive in two ways. First, they systematically include most if not all the possible constituents. That is, programs in some way include (1) the school (policy, structure, administrators); (2) the classroom (teachers, aides, curriculum); (3) the family; (4) the community (agencies, businesses); and (5) students and their peers. Secondly, effective programs are customized to the individuals and the settings. That is

achieved by another list of five *must* considerations: (1) cultural differences and cultural enhancements; (2) social, emotional, and physical climate, and "personal value"; (3) creating futures and self-efficacy; (4) finances, resources, and opportunities; and (5) standards, performance, and accountability. These strategies are not distinct from a school's institutional mission; rather, these strategies facilitate a collaborative, supportive school culture that prevents problems, promotes strengths, and provides equal opportunities for success (Center for Mental Health in Schools (CMHS) at UCLA, 2010). See Table 21.2 for the application of these findings as a means to develop local best practices.

Published reviews and specific studies contribute to these findings. Gottfredson (2001) indicates that multilevel studies show student outcomes are up to 35 % better on the basis of a school effect; that is, school effects often swamp intervention effects, with implications for improving school organization and management, perhaps even before considering special programs for youth. Jordan and Nettles (2000) studied *out-of-school* effects. They found a positive effect (in 10th–12th grade) from structured time with adults, and a negative effect from "hanging out" with peers. Effectiveness requires intensive or sustained programming. Interventions to address even highly specific risk factors are ineffective if they are 10 h or less (Tobler, 2000). We have found 40 h, with the willingness to provide twice that, is necessary to take many students out of the at-risk category (Dowrick & Yuen, 2006).

In a specific intervention evaluation of the *Quantum Opportunities Program* (*QOP*), Hahn, Leavitt, and Aaron (1994) tracked randomly selected youth going into ninth grade from (primarily) single-parent, minority families on welfare. The program included peer tutoring, computer-assisted instruction, service/job opportunities, mentoring and family skills, and futures planning. Four years later, 63 % of the QOP youth graduated versus 42 % of the control group; the QOP youth earned five times as many awards, and the following year two and a half times as many went to college. Other programs

with similar elements have had comparable results. For example, Graber, Amuge, Rush, and Crichlow (1995) reduced dropout from 33 to 15 %. While these programs do not have replications to qualify as "proven," collectively they contribute by their overlapping findings to the general model of *what works* presented here.

Numerous reports on programs for students with disabilities, with some consistency, identify the most effective strategies to be curriculum options (vocational training, internships), other school organization (e.g., class size), and family participation (e.g., Stodden, Dowrick, Gilmore, & Galloway, 2003). Parent involvement is effective when there are specific roles such as paid aide positions, voting membership of committees, or bringing cultural expertise to the classroom. These responsibilities require support and training to be effective. Youth at risk can develop educational roles that eventually serve themselves and others. For example, students who lack literacy development can develop their own skills in reading while becoming peer coaches for other students (Dowrick & Yuen, 2006).

Hundreds of programs related to the prevention of school failure have been developed, demonstrated, and either shelved or replicated without data or comparison conditions. Very few have been adequately documented to meet the "what works" criterion of this book. However, the following four programs have many of the key elements noted at the beginning of this section and in Table 21.2.

The *Teen Outreach* (TO) program, implemented multiple times in the past decade, has been consistently found to reduce school failure (and pregnancies) in high school (e.g., Allen & Philliber, 2001). It is designed with an emphasis on reducing (unwanted) pregnancies while keeping at-risk youth at school, so it is interesting that pregnancy and academic failure are not directly addressed in the content of the program. Activities include volunteering (at least 20 h), from peer tutoring to working as hospital aides; classroom small group discussion on topics selected to be of interest to teenagers. The study by Allen and Philliber included about 3,200 participants, half of them "no treatment" controls. Teen Outreach

**Table 21.2** A matrix for the development of best practices in the prevention of school failure and the promotion of success

|  | Cultural differences, enhancements | Social, emotional, and physical climate | Futures, self-efficacy | Cash, resources, opportunity | Standards, performance, accountability |
|---|---|---|---|---|---|
| School (admin, policy) |  | c* |  |  |  |
| Classroom (teachers, curric) | * |  |  |  |  |
| Family |  | b* | b* |  |  |
| Community (agencies, businesses) |  |  |  | * |  |
| Students |  | a* | a* |  |  |

Table created by author, Peter W. Dowrick (2013)

*Note*:

1. Set goals for each of the intersections above
2. Include considerations of transitions, art, spirituality, ethics, marginalization, teamwork, conduct, romance, employment, drugs, violence, as well as math, science, society, and sports
3. Determine activities/programs to address the goals. Not all 1:1, but combined is better
4. Include consideration of self-determination, feedforward, leadership, and fun
5. Get complete buy-in from all settings/constituents
6. First, do just a 1-year plan. Next year evaluate, do 5-year goals, 1-year goals, and programs
7. Design primary prevention, school-wide programs. Or tailor to at-risk groups. Or both

*It is not necessary to address all the boxes in the matrix (although several may be addressed with a single program). The ones marked * are the most essential, priorities a–c

participants were self-selected, and the control group was partly matched through nominations. Teen Outreach discussion groups were held in health or social studies classes, or after school. The authors claimed strong program effects on pregnancy, course failure, and suspensions. As noted, these outcomes are highly predictive of reducing school failure; unfortunately, dropout and attendance were not directly reported.

The *Valued Youth Program* has been implemented extensively with indications of considerable effects on dropout, especially among Latino youth with English as a second language. While the designers of the program identified 12–15 "critical elements" from the literature (Montecel, Supik, & Montemayor, 1994), the main feature is to train middle school youth with high risk factors (including *poor* reading levels) to become reading tutors for elementary school students. The program also fosters school-business relationships to provide financial support. Note that the evaluations appear to be self-published and that the early implementations (1984–1988) and evaluations were sponsored by Coca Cola. Montecel et al. (1994) describe a study from the late 1980s that included approximately 200

youth, half of whom were assigned to a no-treatment control condition. (It is not clear if they were truly randomly selected, or just from two different school districts.) The youth assigned to be tutors were active for 2 years, sustaining 1 % dropout, compared with 12 % in the control group. Tutors received pay (minimum wage), training, field trips, and public recognition for their "valued" contribution. The authors claim to have carried out comparable evaluations in numerous replications in multiple states.

A program to improve school climate by affecting adult-student relationships is *Check and Connect* (Sinclair, Christenson, Evelo, & Hurley, 1998). It features dropout prevention through mentoring, monitoring, and building effective transitions from middle to high school. It is "proven" in the sense that it and a number of other programs with similar features have been evaluated, producing good outcomes by lowering dropout rates and risk factors associated with learning disabilities and EBD. Overall, the procedures were shaped by the collaboration of school personnel, and family and other community members, including university researchers and the pupils.

There are five features of note. First, adults with good cooperative skills are assigned as mentors or monitors for 25 students each. Secondly, the mentors check on the status of risk factors (attendance, conduct, academics) known to affect engagement with school. Thirdly, the mentors provide regular support for all students by means of feedback on progress and encouragement to stay in school. They also provide structured training in problem-solving for risk situations (e.g., tardiness). Fourthly, in situations where the monitoring indicates elevated risk, the students are provided with additional intensive problem-solving, including parent participation—on the basis of which they can receive specific academic support, or recreational or community opportunities. For example, tutoring could be arranged, if classes were being avoided because of difficult content. Finally, the system is initiated in seventh grade and continued in eighth grade on to high school (ninth grade).

The results typical of this type of program indicate significantly positive outcomes for attendance and assignment completion, with modest effects on grades, conduct, and self-reported attitude toward school. Thus, such programs are helpful but by no means the entire answer.

One program to improve school outcomes with an academic overhaul, and also addresses some specific risk factors, is the *Seattle Social Development Project*. It has been well evaluated, beginning with young children and extended to all ages. It is a multiyear program addressing schools and families in low-income communities. Compared with controls, children in a 6-year evaluation showed greater school commitment and class participation; girls experimented less with drugs; boys improved their school work and social skills (O'Donnell et al., 1995). In a follow-up nonrandomized controlled trial of participants versus non-participants at 24 and 27 years old, researchers found significantly better educational attainment, mental health, and sexual health (Hawkins et al., 2008).

The program is designed to decrease risk factors on academic failure, low commitment to school, early conduct disorders, family management problems, and involvement with antisocial peers. It is also designed to improve resilience factors: positive social bonds to school and family, through active involvement; belief in family and school values, through consistent reinforcement.

The program has recently been extended into middle and high schools. Teachers are trained in proactive classroom management, interactive teaching, cooperative learning, and problem-solving. This approach improves predictability of teacher–student interactions and increases the amount of praise, modeling, and appropriate student involvement. Youth are provided individual social skills interventions. Parents are offered skills training related to behavior, drugs, and homework. Overall results have been positive, if moderate, with respect to dropout per se. Teachers improved their skills. Some of the children at risk benefitted academically, and some reduced their risky behavior (e.g., drug involvement).

A program designed to improve school climate and academic outcomes by addressing some specific risk factors is *Take Stock in Children* (Clark, Shreve, & Stone, 2004). For Florida's at-risk children, this program seeks to address poverty, delinquency, violence, gang activity, and ultimately educational failure. Each student is assigned a volunteer adult mentor for middle and high school, as well as an advocate/case manager to monitor academic progress. Both mentors and advocates/case managers provide individualized academic and behavioral support and motivation. Parents of students who participate in this program must develop relationships with teachers, mentors, and school administrators, and play an active role in the education of their children. Of 17,000 students who have participated in this program, 92 % have graduated from high school. Program participants have a high school graduation rate 21 % higher than Florida's average, and 61 % higher than their at-risk peer group (Clark et al., 2004).

Another program used to improve school climate and address other risk factors is *Safe Measures*. A student-led action research process enables students and teachers to work together to combat bullying, and improve school safety and learning environments. Students and teachers collect and analyze data, reflect, and develop and

implement solutions to problems. The Safe Measures programmers indicate that improving schools through collaborative research is effective in lowering dropout rates, reducing bullying, improving safety, preventing violence, and improving educational practices. Achievement test scores have been indirectly improved in at least some (c. 10 %) of the struggling schools that have used this program (National Dropout Prevention Center, 2012).

*Smaller learning communities in schools*. High school size of 600–1,000 pupils correlates with the lowest rates of dropout (Howley et al., 2000). Given that many high schools now have enrollments of 1,500–5,000, the US Department of Education has called for initiatives to restructure these large schools with freshman academies, career tracks, block scheduling, etc., to reduce the negative effects of size. While this type of intervention is not a program per se, it incorporates most of the seven characteristics that work at a practical level. Evaluations have not been done with experimental designs, but through grant reporting and site reviews. The Department of Education describes "buy in" from all constituents involved in any kind of school reform; that is, the objectives and the spirit of the school reform must be understood and endorsed by the school administrators, teachers, students, families, and local community agencies (Policy and Program Studies Service, 2004).

## What Might Work

This book provides testimony to the number of prevention programs for issues likely to affect school performance (e.g., drug abuse, unwanted pregnancy). Many such programs appear to have an impact on school attendance and performance, but without quantifying dropout and truancy outcomes. Thus they can provide information on promising but unproven interventions for school failure or success. Promising practices may also be found in programs in elementary schools, given that school failure is a cumulative process almost always with its roots in the early grades. Such programs include *First Step to Success*

(Walker et al., 2009) and *Effective Behavior Supports* (Lewis, Sugai, & Colvin, 1998), which are aimed at early intervention with childhood aggression in schools, thus improving the school climate and academic success of all students. Additional clues for improving interventions to prevent or treat school failure include:

1. *Small programs* may be twice as effective as large ones (Tobler, 2000).
2. *Intervening early* is frequently advocated, as it is more efficient to address risk factors before several accumulate (e.g., Suh & Suh, 2007). For example, teaching literacy should be implemented before a child starts to fail at other subjects (Dowrick, Power, Manz, Ginsburg-Block, Leff, & Kim-Rupnow, 2001). For teenagers at risk, many of whom read below fifth-grade level, it is never too early and never too late to help.
3. *Peers may be better teachers* than teachers, for social and emotional learning programs (Richman, Rosenfeld, & Bowen, 1998). Youth can develop educational roles that eventually serve themselves and others. For example, students who serve as tutors for younger or less capable students gain leadership and skills in the subject matter (e.g., literacy; Dowrick & Yuen, 2006).
4. *Expand the use of school locations*: Schools have the potential to become community learning centers, in which outside organizations can provide on-campus support and expertise in prevention programs. A well-evaluated British project for school-based family social services has demonstrated a 50 % reduction in truancy (Pritchard & Williams, 2001). Some Native Hawaiian schools have impressive retention of at-risk students by using hula kahiko (ancient dance) and war'a (ocean-going canoes) to teach sustainability and sailing, with science, mathematics, and history curricula (Kahapea, McCulloch, Kaai, & Dowrick, 2004). A longitudinal study of involvement in afterschool programs in Los Angeles found significantly lower dropout rates compared with those who did not participate (Huang, Kim, Cho, Marshall, & Perez, 2011).

5. *Social skills training* is widely used, with much justification but modest outcomes. Generalization is notoriously poor for social skills learned by role play in school settings; applications in daily life, as with cross-age mentoring, and digital technology to provide feedforward of these skills give promising results (e.g., Embry & Biglan, 2008).

6. *Special populations* (e.g., ethnic minorities) may benefit more than others from an interactive approach that sets high expectations (Nyberg et al., 1997).

7. *Effective Transition Programming* includes school retention with the attainment of a suitable exit qualification along the way. For example, *Video-Based Futures Planning* is a program shown to work in terms of participant enjoyment and positive individual outcomes (Dowrick, Tallman & Connor, 2005). In this program, the student collaborates with peers, families, and outside agencies to develop scenarios of him or her as a 22-year-old. These scenes are then created in video form, starring the student. These "video futures" then guide educational planning.

There are a number of straightforward approaches that should not be overlooked in the prevention of truancy. Examples include simple incentives (contingency management) and group counseling (Brooks, 2001), teachers' showing interest and empathy in students' lives, asking families to take an interest (Sinclair, Christenson, & Thurlow, 2005) and rapidly reporting absences directly to parents (Epstein & Sheldon, 2002).

Promising strategies are similar internationally, except where the issues are strikingly different. For example, in one part of Namibia the goal is to ensure that children stay in school at least 3 years and learn basic reading skills. Here they use a community-responsive approach to reduce discrimination by teachers and to accommodate the local language and culture (Pfaffe, 1995). In the Netherlands, a recent policy increased the compulsory education age as a straightforward way to prevent students from leaving school early. Results demonstrate a reduction in dropout by 2.5 % (Cabus & De Witte, 2011).

## What Does Not Work

In the United States, and other countries where 85 % of the population spends approximately 12 productive years in school, there is little evidence that small-scale or unitary approaches have much promise for preventing students from leaving school (Adelman & Taylor, 2007). For example, providing additional academic support for failing students will have little effect on dropout if other risk factors are not addressed. This situation is amply illustrated in a report by Hamovitch (1999). He describes a failed "after-school compensatory" program for low-income African American students, attributing the failure to the emphasis on tutorials after school (more of the school day), without reflecting local culture and needs. Despite recommendations based on previous research for systemic, embedded school climate change, many schools still struggle: dropout policies are often fragmented (CMHS, 2010). In the United States, there has been reported evidence that supplemental education must look and feel different from class-as-usual (Dowrick, 2007; Rao, Dowrick, Yuen, & Boisvert, 2009). An ignorance of culture or context can make implementing an empirically supported prevention intervention extremely difficult or impossible.

Attempts to address drugs and violence also have weak possibilities of preventing dropping out of school, although many of the positive youth development programs reviewed by Catalano et al. (2002) included reductions in alcohol, tobacco, and marijuana as part of their goals. These issues are tough to address, and programs have struggled to show an impact when linked to school difficulties (Dowrick, Leukefeld & Stodden, 2005).

Currently fashionable approaches of "zero tolerance" and adjudication do not work, whether for the youth or their parents. The US rate of youth incarceration is dismally the greatest among developed nations: five times greater than the next two highest (South Africa and New Zealand), and 3,000 times greater than Japan(!)— see Mendel (2011). The state of Missouri has shown promise by reducing the 3-year recidivism

rate to 16 %, about one-third the national average, using small treatment-oriented facilities, but we have had difficulty locating studies of effective impact on success either in correctional education or on returning to a community school.

## Recommendations

Prevention and intervention strategies to reduce school failure must improve pupils' appreciation of school (how much they like school), and concurrently increase the incentives to stay and/or decrease the incentives to leave. That can be achieved by a comprehensive approach that includes consideration of:

1. Culture
2. School climate
3. Community/neighborhood context
4. Self-efficacy
5. Adding resources
6. Performance

At the same time, consideration is given to all constituents: students, the school, teachers, family, and the community. Table 21.2 provides the highlights of our recommendations for practice. It provides a school community with a simple tool to develop as comprehensive or as focused an approach to promoting school success as desired. As indicated, a school-based team would use the matrix annually to revise its goals and to plan what programs would meet those goals. The row and column headings, and the other considerations, are intended to ensure that the main elements from proven and promising practices are included in the plan. Although the matrix has 25 elements, in practice only, say, about half would need objectives/activities; just five, marked with an asterisk, are essential.

We recommend putting local effort into the following:

- Adequate assessment of where individual schools are in terms of criteria 1–5 above, and where the priorities and current resources are, to take appropriate action. If school climate is good, but the outcomes (e.g., grades, competitions) are poor, then that suggests refocusing on new objectives of performance. If the

school is succeeding, then there may be personal life problems to be addressed.

- More data on what works and what does not. A number of programs are widely implemented but lack adequate data. There has been too little research that really addresses the causal relationships between efforts for improvement and the outcomes.
- Redistribute money and resources into at-risk communities. In a study of policy and school structure, Fitzpatrick and Yoels (1992) found spending per pupil to have the greatest effect of all factors on staying in school.
- Recognition that different programs for at-risk children and youth have considerable overlap. The chapters of this book provide the basis for a synthesis of programs, addressing such issues as drug abuse, delinquency, violence, and teen pregnancy, with those for school dropout and truancy. Eighty percent of prevention programs for personal or community issues in adolescence (drugs, etc.) have a major school-based component (Catalano et al., 2002).
- A huge effort in the United States in the last 15 years has gone into addressing dropout and related issues for students with disabilities, and the analysis of findings has remarkably little overlap with the recommendations from general education. The field would benefit from a synthesis here, too.
- Recognition that much of creating a good school is basic: a healthy environment and effective teaching. There have been big strides in knowledge of what makes an effective curriculum (design and expectations), how it is taught, and school-wide reform that could be more consistently and conscientiously applied.

Some major changes could be made with the stroke of a legislator's pen or an executive action by a school district. These changes include:

- Building smaller high schools. If it is more expensive to build three campuses for 900 students than to maintain one campus for 2,700, it would be money well spent. There is growing advocacy to replace the separate levels of schools, which breed transition and school size problems, with K-12 schools (Howley et al., 2000).

- Change the hours of the school day to begin at 9:00 am and end at 3:30 pm, with universally available after-school sports practices and other activities. Most juvenile crime, pregnancies, and other risky behavior occur between 2:30 pm and dinner time.
- Make "Prevention of School Failure and the Promotion of Success" an ongoing effort with emphasis on applying currently proven or promising strategies with integrity. Prevention programs will not be successful as magic bullets, but must become a way of doing business.

There are considerable international differences in how "dropout" is perceived and valued. There are also differences in approach. Broadly speaking, (a) in the Americas most effort has gone into academics, vocational preparation, and cooperative behavior of students. In (b) Europe there has been more emphasis on attitudes and friendships. In (c) Asia and Africa the most effort has been in creating opportunities socially and institutionally to attend school. These differences may then be characterized as (a) succeeding in schoolwork, (b) enjoying school, and (c) school availability/access. In any school system, all three considerations are essential, with emphasis depending on the local or national situation.

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Anja Schultze-Krumbholz and Herbert Scheithauer

## Introduction

Over the last 30 years, media has changed from being something to consume and being produced only by professionals to the so-called social media (cf. Collier, 2012), which is interactive and user-generated and correspondingly less controllable. One of the risks of social media is cyberbullying. A review of youth online risk research has shown it to be the most common online risk for adolescents (Palfrey, Boyd, & Sacco, 2010).

Cyberbullying is defined as repeated aggressive acts perpetrated through electronic or digital media with the intent to or the result of harming others (Nocentini et al., 2010; Smith et al., 2008; Tokunaga, 2010). It can be performed by individuals or groups. "Using technology, a bully can send or post hurtful, humiliating, or even threatening messages and content to a victim, to third parties, or to a public forum or environment that many other online participants visit" (Patchin & Hinduja, 2012b, p. viii). Therefore, cyberbullying can take place privately with messages or pictures/videos only directed at the victim or publicly for others to see.

Some definitional aspects of cyberbullying are still under discussion among researchers and within large researcher networks (such as the COST IS0801 Action on Cyberbullying,[1] for example, which has brought together researchers from 28 European countries, Israel and Australia). In research papers, definitions and operationalization vary regarding forms of cyberbullying, technologies (e.g., Internet vs. cell phone), frequency, and questionnaire construction (e.g., single global questions vs. specific behavior checklists) (Berne et al., 2013). Additional definition criteria have also been proposed and partly even empirically tested, such as the extent of anonymity and publicity (Menesini et al., 2012; Nocentini et al., 2010).

The specific characteristics differentiating cyberbullying from traditional school bullying are related to the characteristics of digital media in general:

- Physical distance
- 24/7 nature and pervasiveness (victim is available at all times and in all places)
- Persistence and searchability of digital contents
- No temporal, spatial, and numerical limits regarding potential and invisible audience
- Ability of content to be copied and pasted from anywhere to anywhere
- Potential anonymity of the perpetrator

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[1] More information on the COST IS0801 Action can be found at https://sites.google.com/site/costis0801/

- Lack of emotional feedback and thus less awareness of the impact of one's own actions on the recipient
- Lack of fear on the perpetrator's part as sanctions are unlikely to occur (Boyd, 2008; Kowalski & Limber, 2007; Patchin & Hinduja, 2012a; Raskauskas & Stoltz, 2007; Slonje & Smith, 2008)

Roles investigated in cyberbullying research are: "cyberbullies," "victims of cyberbullying," and "cyberbully-victims," meaning individuals who are both perpetrators and victims of cyberbullying. Recently, research interest has focused on the witnesses of cyberbullying.

Cyberbullying may lead to serious detrimental outcomes for those involved. Ševčíková, Šmahel, and Otavová (2012) were able to show that it is particularly serious when it overlaps with the "real" world. That is, when virtual threats are likely to be carried out in the physical world. Anonymity is a crucial element because the victim cannot easily assess the probability of the offender actually carrying out the threat. Also, people are more easily drawn into online environments meaning that peers and friends of the victim could be involved or at least become witnesses and thus increase the victim's feelings of powerlessness. Further, classmates and schoolmates who might not otherwise witness the bullying can be witnesses of cyberbullying through the easy distribution of digital material. Ševčíková et al. (2012) conclude that the greater the connection between physical and digital world coupled with the greater the likelihood that online experiences will interfere with offline relationships, the greater the perceived harm.

Cyberbullying overlaps with traditional school bullying. Traditional bullying has been shown to correlate with or predict the same status in cyberbullying namely traditional bullies tended to be cyberbullies while traditional victims were also cybervictims (Raskauskas & Stoltz, 2007; Smith et al., 2008; Ybarra, Diener-West, & Leaf, 2007). Proof for a retaliation hypothesis—traditional victims taking revenge in cyberspace—has also been found (Ybarra & Mitchell, 2004). However, Menesini (2012) reports additive effects of traditional and cyberbullying on externalizing and internalizing symptoms with each phenomenon showing differential impact.

## DSM IV and Incidence/Prevalence Rates

Cyberbullying is not a disorder specified by the DSM IV. However, cyberbullying victimization is associated with a number of relevant diagnoses.

Below, relevant DSM IV categories, diagnoses, and symptoms are presented depending on the respective role in cyberbullying. For perpetrators of cyberbullying, these most probably accompany or even cause their behavior, while for victims of cyberbullying they are likely a result of negative online experiences. As little longitudinal research has been undertaken, there are no causal relations. Many studies have merely identified correlational associations or cross-sectional predictive values.

## Incidence/Prevalence Rates

Because cyberbullying is not a classical clinical disorder, no incidence rates or epidemiology have been assessed or analyzed. Research methods are seldom standardized and vary regarding the presentation of a definition, the number of items, administration type (e.g., online questionnaire vs. school-based survey), and the reference period among others. Therefore, only prevalence rates can be reported.

Prevalence rates vary greatly across and within countries. For example, in Germany (the country of origin of the authors) prevalence rates range from 3 to 43 % for cyberbullying victimization and from 8 to 33 % for cyberbullying perpetration (Katzer, Fetchenhauer, & Belschak, 2009a, 2009b; Schultze-Krumbholz & Scheithauer, 2012; Wachs, 2009). Internationally, the prevalence of cyberbullying victimization ranges from 6 % in Spain and Turkey to 72 % in the US (Aricak et al., 2008; Juvonen & Gross, 2008; Ortega, Elipe, Mora-Merchán, Calmaestra, & Vega, 2009; cf. Suzuki, Asaga, Sourander, Hoven, & Mandell, 2012) and for cyberbullying perpetration from 4 % in the US to 36 % in Turkey (Aricak et al., 2008; Kowalski & Limber, 2007; cf. Suzuki et al., 2012). Depending on the studies included in the syntheses or reviews, mean

victimization rates are 24 % and mean perpetration rates across all countries are 16–18 % (Patchin & Hinduja, 2012a; Suzuki et al., 2012).

## DSM IV Categories and Cybervictims

In the following sections we try to classify the potential consequences of cyberbullying for perpetrators, victims, and bully victims under the existing DSM-IV-TR categories (4th ed., text rev.; American Psychiatric Association, 2000). Research on the impact of cyberbullying has focused mainly on subclinical levels. As the majority of empirical research focuses on children, adolescents, and young adults, we will not report on personality disorders.

Cybervictims showed significantly elevated levels of depression, anxiety, phobic anxiety, and paranoia compared to non-victimized participants. Victims also scored higher on the Global Severity Index and the Positive Symptom Total subscales which is in line with many previous studies showing victims to experience high levels of stress and anxiety (e.g. Campbell, Spears, Slee, Butler, & Kift, 2012; Finkelhor, Mitchell, & Wolak, 2000). Therefore, victims may exhibit an *Acute Stress Disorder* or even a *Posttraumatic Stress Disorder*.

Empirical evidence has been found in many studies for depressive symptoms (e.g., Erdur Baker & Tanrikulu, 2010; Gradinger, Strohmeier, & Spiel, 2009; Perren, Dooley, Shaw, & Cross, 2010; Schultze-Krumbholz, Jäkel, Schultze, & Scheithauer, 2012) as well as suicidal ideation and suicide attempts (Hinduja & Patchin, 2010; Schenk & Fremouw, 2012) to be associated with cyberbullying victimization. Thus, victims may show symptoms of a *Mood Disorder* and may have suicidal thoughts or intentions.

Further, research has linked *Somatization Disorders* to cyberbullying victimization. Victimized students report feeling sick, having trouble sleeping, headaches, and stomachaches (e.g., Carter, 2011; Gradinger et al., 2009; Techniker Krankenkasse Landesvertretung, 2011). Additionally, *Substance Use* (mainly alcohol and marihuana) is also increased among victims of cyberbullying (Goebert, Else, Matsu, Chung-Do, & Chang, 2011; Hinduja & Patchin, 2008).

Although no links have been reported explicitly so far, cyberbullying victimization may also be associated with *School Phobia* and *Social Phobia*. The anonymity of an attack upsets the victims and they become suspicious of their social surroundings (Raskauskas & Stoltz, 2007; Spears, Slee, Owens, & Johnson, 2009).

Apart from these mostly internalizing problems, a number of studies have also found victims to exhibit externalizing symptoms such as aggression (e.g. Schultze-Krumbholz, Jäkel, et al., 2012; Sontag, Clemans, Graber, & Lyndon, 2011).

## DSM IV Categories and Cyberbullies

Perpetrators of cyberbullying have repeatedly been shown to be more aggressive than non-involved students and to show other conduct problems (e.g., Gradinger et al., 2009; Schultze-Krumbholz & Scheithauer, 2009; Sontag et al., 2011; Sourander et al., 2010). As bullying others is one symptom of a *Conduct Disorder*, cyberbullying behavior can be part of such a diagnosis. Further, cyberbullying perpetration is associated with delinquency (Ybarra & Mitchell, 2004). Cyberbullying offenders also show hyperactivity and concentration problems more often than non-offenders (Sourander et al., 2010; Ybarra & Mitchell, 2007), thus a diagnosis of *Attention Deficit/Hyperactivity Disorder* might be comorbid with cyberbullying perpetration. Also, similar to victims of cyberbullying, perpetrators often show increased rates of *Depression* along with suicidal ideation and suicide attempts (Hinduja & Patchin, 2010; Ybarra & Mitchell, 2004).

## Biological/Genetic factors

A search of the research literature did not uncover any empirical studies on cyberbullying and biological/genetic factors.

## Individual Factors Influencing Risk and Resiliency

Most of the research in the field of cyberbullying has focused on individual factors influencing risk and resiliency with a stronger emphasis on risk factors. It is important to note once again that there is still only a very small number of (short-term) longitudinal studies on cyberbullying, meaning that many of the following factors for risk and resiliency have only been identified on the basis of correlations or cross-sectional regression analyses. Therefore, no causal relations can be deduced and the mentioned factors remain potential "causal" risk or protective factors.

One very general aspect is gender. A research synthesis conducted by Patchin and Hinduja (2012a) yielded gender differences for cyberbullying victimization and offending. In 8 out of 13 published studies they found girls to be victims more often, while two studies found no difference. On average, 21.8 % of girls and 19.5 % of boys were victims of cyberbullying. While for some time researchers have argued that due to the nature of cyberbullying being more covert and relational it is to be expected that girls would be offenders more often, Patchin and Hinduja (2012a) found the opposite to be true in 11 out of 13 studies reporting offending rates. On average, 14.1 % of girls and 18.5 % of boys were offenders across the 13 studies. The types of victimization and offending also differ by gender. In a study from the UK, girls were victims and offenders more often on all assessed types of cyberbullying except bullying on websites or using manipulated pictures (Smith et al., 2008).

Regarding age, there is a clear peak in middle school around eighth grade (Ortega et al., 2009; Williams & Guerra, 2007). A large cross-sectional study with different age cohorts found that adolescents between 12 and 19 years old were cyberbullies most often and that most cyber-victims were in the age groups of 12–19 and 20–26 years. Further research reports show increasing rates of cyberbullying from middle school through high school (Patchin & Hinduja, 2012a; Wolak, Mitchell, & Finkelhor, 2006).

In many studies, the strongest predictor of cyberbullying perpetration and victimization was the respective experiences in traditional bullying (i.e., traditional bullying perpetration is a strong predictor of cyberbullying perpetration and traditional bullying victimization is a strong predictor of cyberbullying victimization) (Fanti, Demetriou, & Hawa, 2012; Katzer et al., 2009a, 2009b; Raskauskas & Stoltz, 2007).

One individual factor related to cyberbullying is self-esteem. Patchin and Hinduja (2010) found both perpetrators and victims to show lower rates of self-esteem than non-involved students. Especially due to the cross-sectional nature of the data, one might argue that low self-esteem is a result of cyberbullying victimization. And indeed, research has shown that self-esteem decreases when the extent of cyberbullying victimization increases (Brighi et al., 2012). However, this is not sensible when looking at perpetrators as the experience of power over others should rather increase their feelings of self-esteem. Therefore, low self-esteem is possibly a precursor of victimizing others online.

Further, lack of self-control was found to be associated directly with cyberbullying and to a lesser extent cyberbullying victimization, and indirectly via traditional bullying and traditional bullying victimization consistently across 25 European countries (Vazsonyi, Machackova, Sevcikova, Smahel, & Cerna, 2012). Low self-control is associated with low ability to conform to social norms and rules and low inhibition of immediate pleasure-fulfillment regardless of consequences (Gottfredson & Hirschi, 1990; Vazsonyi et al., 2012). This is in line with results regarding *Conduct Disorders* and *Antisocial Personality Disorder*. Also in line with this, moral disengagement (Almeida, Correia, Marinho, & Garcia, 2012), low levels of empathy and remorse (Schultze-Krumbholz & Scheithauer, 2009; Slonje, Smith, & Frisén, 2012; Steffgen, König, Pfetsch, & Melzer, 2011), and high scores of callous-unemotional traits (Fanti et al., 2012)

have been found for cyberbullying perpetrators emphasizing that cyberbullies pay little attention to, are less able to recognize, or simply do not care about their victims' distress. For example, boys with low scores of cognitive empathy (i.e., perspective-taking) reported more cyberbullying perpetration irrespective of low or high scores of affective empathy while for girls high levels of affective empathy buffered the effects of low cognitive empathy (Ang & Goh, 2010).

Another risk factor is constituted by positive attitudes towards this kind of behavior (Vandebosch & Van Cleemput, 2009) and justification of violence attitudes (Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Williams & Guerra, 2007); the more favorable an adolescent's attitudes are towards cyberbullying, the higher the intention to perform this behavior (Heirman & Walrave, 2012). Barlett and Gentile (2012) found that positive attitudes towards cyberbullying and reinforcement or perception of positive gain of cyberbullying behavior, respectively, mediated the stability of cyberbullying perpetration across time.

Of course, media usage patterns also influence involvement in cyberbullying. Intensive use has been shown to be a risk factor especially for cyberbullying victimization (e.g., Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012; Wolak, Mitchell, & Finkelhor, 2007). Also, Internet use in private places at home increases the risk for victimization compared to using the Internet in a more public place in the home (Sengupta & Chaudhuri, 2011). Often, victims of cyberbullying show a lack of knowledge about strategies for safe media use. Research has found lack of knowledge about risky online behavior like sharing passwords or talking to strangers online to be associated with cyberbullying victimization (Hinduja & Patchin, 2009; Mishna et al., 2012; Sengupta & Chaudhuri, 2011).

Little is known about factors influencing resiliency. Ubertini (2010) found that factors which have been demonstrated to protect against traditional bullying, specifically life satisfaction and social support, did not protect against the effects of being a cybervictim.

## Family Factors Influencing Risk and Resiliency

Few studies have been conducted on family factors influencing risk for and resiliency against cyberbullying and cyberbullying victimization. Thus, results are from single studies and can be contradictory.

One important factor is the parent– or caregiver–child relationship. A poor emotional bond characterized by low trust in the child, child and caregiver not getting along or unable to discuss problems as well as not often having fun together is linked to increased rates of cyberbullying perpetration. Further, infrequent monitoring (i.e., not knowing where the child is most of the time and whom the child is spending time with) was also associated with the child cyberbullying others (Katzer et al., 2009a; Ybarra & Mitchell, 2004). Both these factors remained significant even after controlling for significant personal characteristics. Poor family relationships were also linked to cyberbullying victimization. For boys, victimization was predicted by lower rates of family self-esteem and for girls by increased rates of parental loneliness (feeling rejected and abandoned in caregiver–child relationships) (Brighi, Guarini, Melotti, Galli, & Genta, 2012). Students with close relationships to their parents were victims of cyberbullying less often than students with a distant relationship (Accordino & Accordino, 2011).

Specific monitoring techniques for media use are associated with reduced risk of becoming a victim of cyberbullying. Mesch (2009) found evaluative mediation, specifically rules regarding which websites the child is allowed to visit, to negatively predict cyberbullying victimization. Analyses by gender revealed no significant effect for girls, but protective effects for boys and the strategies "monitoring software installed which records online activities" and "rules for the kind of personal information the child can share with people they talk on the Internet" (Mesch, 2009, p. 390).

In a Japanese study, parental control of Internet use at home was only indirectly linked

to cyberbullying and cyberbullying victimization by influencing the amount of Internet use which in turn predicted cyberbullying perpetration and victimization (Aoyama, Utsumi, & Hasegawa, 2012).

Family social support is another relevant protective factor, both against cyberbullying and cyberbullying victimization. Generally, high levels of family social support predicted decreases in cyberbullying perpetration one year later (Fanti et al., 2012). But this factor is of special significance for cyberbullying victimization: in single-parent households family social support was associated with decreases in cyberbullying victimization at low rates of friend support. Low family support coupled with low friend support predicted the highest levels of cyberbullying victimization.

Results on parenting styles are inconsistent so far. Dehue, Bolman, Vollink, and Pouwelse (2012) have linked cyberbullying perpetration to parenting styles with more permissive or neglectful styles, respectively, allowing for more cyberbullying perpetration of the child. Contrary to this, in a study from Turkey authoritarian attitudes were found to increase cyberbullying perpetration (Dilmaç & Aydoğan, 2010). The same authors also reported authoritarian parental attitudes to increase cyberbullying victimization while protective-demanding attitudes reduced the risk of being victimized.

## Social and Community Factors Influencing Risk and Resiliency

Repeatedly, the responsibility of schools as well as the connection between cyberbullying and peer relations in school is highlighted. However, very little research has focused on social and community factors promoting or reducing the risk of cyberbullying. As with family factors, the following description relies on single, mostly cross-sectional studies.

One important social factor is school climate. It seems that a positive perceived school climate functions as a protective factor against cyberbul-

lying perpetration. The more adolescents perceive themselves as connected to their school and the climate to be fair, trusting, and pleasant, the lower is their involvement in cyberbullying as perpetrators (Williams & Guerra, 2007). Primary schools with rules about the use of Internet and cell phones as perceived by students showed lower rates of cyberbullying. In Australian secondary schools, predictors of cyberbullying victimization were higher levels of connectedness between students and higher overall levels of academic achievement (Cross et al., 2012).

Peers and peer relations also seem to play an important protective role. Students who perceive friends their age as trustworthy, caring, and helpful report lower levels of cyberbullying perpetration (Calvete et al., 2010; Williams & Guerra, 2007). Schoffstall and Cohen (2011) were able to reveal links between cyberbullying perpetration and low levels of peer functioning. The more students engaged in cyberbullying, the lower peer optimism (optimism regarding peer relations) they showed, the fewer mutual friendships they reported, and the less socially acceptable and popular they were rated by their classmates.

High friend support is associated with decreases in cyberbullying victimization one year later. If students experience high friend social support, family social support does not significantly account for any changes across time (Fanti et al., 2012). Cyberbullying victimization is further predicted by low popularity in the online community (Katzer et al., 2009b).

Another factor which can be treated as a community factor is norms about cyberbullying. When students perceive negative social pressure and disapproval for cyberbullying from significant others such as peers, parents, or school personnel, they are less inclined to engage in cyberbullying as perpetrators (Heirman & Walrave, 2012).

A risk factor on the societal level is exposure to violence. Calvete et al. (2010) linked direct (being a victim) and indirect (being a witness) exposure to violence on four levels (school, neighborhood, home, and television) to increased rates of cyberbullying perpetration.

Media violence exposure predicts both cyberbullying and cyberbullying victimization (Fanti et al., 2012).

## Evidence-Based Treatment Interventions for Cyberbullying

For cyberbullying and cyberbullying victimization, there is no specific clinical intervention or prevention. Rather, most programs are a blend of intervention and prevention intervention aimed to reduce existing rates as well as prevent emerging cases.

Approaches to reducing cyberbullying and cyberbullying victimization can be categorized into three groupings (Snakenborg, Van Acker, & Gable, 2011, p. 90):

- Laws, rules and policies which intend to regulate media use or exert control over media contents
- Curricular programs which aim at education about the safe use of digital media, avoiding and addressing cyberbullying, addressing the consequences or promoting specific (e.g., social) skills
- Technological approaches such as filters and blocking software

None of the presented interventions have been evaluated three times or more as this research is in its infancy. Only the most prominent programs will be presented as there are a myriad of interventions addressing cyberbullying. In Germany, for example, every school counselor currently develops his or her own (mostly not evaluated) approach and materials. As Snakenborg et al. (2011, p. 90) describe the situation:

> Keyword searches of social science databases including the Web of Science, Academic Search Premier, Ovid, and ERIC turned up no peer-reviewed empirical studies for the prevention of or intervention with cyberbullying.

## What Works

A search of the research literature did not uncover an intervention that met the criteria of three successful trials.

## What Might Work

Immediate intervention occurs with report and blocking functions. However, the "report button" is not well accepted among youths, especially if conflicts result from known peers sharing the same social environment (e.g., Wagner, Brüggen, Gerlicher, & Schemmerling, 2012). Blocking abusive users from being able to post or send offensive content may provide immediate relief in an acute situation. This is often used by students to cope with the situation (Slonje, Smith, & Frisén, 2013; Smith et al., 2008). However, the user might re-register with a new account and start harassing the victim again.

Presently, there is no evaluated or theoretically founded immediate intervention strategy. What is often proposed—in cases of cyberbullying victimization—is to document the deed for later purposes of proof, to stop the communication (i.e., not to "fight back") and to block the perpetrator from profiles, mail accounts, etc. (e.g., Kowalski, Limber, & Agatston, 2008; Schultze-Krumbholz, Zagorscak, Siebenbrock, & Scheithauer, 2012).

## What Doesn't Work

Due to a lack of research, there is no knowledge about interventions with no or contrary effects.

## Psychopharmacology and Cyberbullying

A search of the research literature did not uncover any empirical studies on cyberbullying and psychopharmacological treatment.

## The Prevention of Cyberbullying

There is very little research on the prevention of cyberbullying. Some cyberbullying-specific programs have been developed and published and will be presented with information on their

effectiveness. Due to novelty of these programs, none of them can provide three or more successful trials.

## What Works

A search of the research literature did not uncover a prevention intervention that met the criteria of three successful trials.

## What Might Work

Many of the following programs have been developed for the school context. Most are universal preventive programs with indicative aspects as they address bully and victim roles.

*CyberMentors* (https://cybermentors.org.uk/) is a peer-support scheme by the UK charity. Adolescents are trained to be able to mentor in and outside of school. They can refer mentees to a team of senior mentors and counselors. CyberMentors has been evaluated twice. The first evaluation by Banerjee, Robinson, and Smalley (2010) found the training to be highly accepted and respected among youths. It increased awareness and reporting rates and was perceived as helpful to some extent. The program required intensive and ongoing monitoring which not all schools were willing to give. Banerjee and colleagues found indications that in some of the schools overall ethos and school atmosphere were beginning to change. A second evaluation found CyberMentors to be easily accessible for both mentors and mentees and both parties felt well supported: 80 % of mentees found the advice they received helpful (Thompson, Robinson, & Smith, 2012). Its website reports that as of January 2012 more than 7,000 CyberMentors had been trained, more than 890,000 private mentoring interactions had taken place, 99 % of mentors rated the training workshops as "good" or "excellent," 96 % of involved teachers perceived the scheme as effective, and 72 % of mentees reported improved well-being (BeatBullying, 2012).

*Medienhelden* (engl.: media heroes; Schultze-Krumbholz, Zagorscak et al., 2012) is a structured, school-based, manualized program for Grades 7–10 which is implemented by trained teachers during regular school classes or by trained youth professionals in after-school groups which meet regularly. The development and evaluation of the program was funded by DAPHNE III and the European Commission and was part of a DAPHNE III cyberbullying project.[2] According to the particular needs of teachers and schools, there are two versions of the program. The Medienhelden curriculum lasts approximately ten weeks with 90 min per week and the Medienhelden project day lasts one day with four sessions of each 90 min. The program aims at awareness-raising, change of subjective norms and attitudes, empathy training, perspective-taking, media competency, class climate, and peer relations. Methods utilized, among others, are education, empathy training, role plays, peer-to-peer tutoring, moral dilemma discussions, and student-to-parent tutoring. The project day includes most of these subjects in a shortened version. Teachers rated the program as highly applicable and well-liked. They perceived a desired change in their classes (Jäkel, Schultze-Krumbholz, Zagorscak, & Scheithauer, 2012). In a pretest-posttest design with a 9-month interval, schools were asked to randomly assign their participating classes to either control or intervention group. Evaluation of target variables showed that the control group showed higher levels of cyberbullying compared to the whole sample nine months post-intervention and lower levels of social skills (empathy and perspective-taking), subjective health, and self-esteem. The intervention group taking part in the project day reported stable levels in most of the variables and an increase in perspective-taking. The intervention group with the Medienhelden curriculum also showed reduced levels of cyberbullying and increased levels of the other variables (Schultze-Krumbholz, Wölfer, Jäkel, Zagorscak, & Scheithauer, 2012). For these analyses, 654

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[2] For more information on this project see http://www.bullyingandcyber.net/en/ecip/project

students from 35 school classes provided longitudinal data. Medienhelden is available as a book with CD-ROM including all the teaching materials. It is advisable to also take part in the 2-day teacher training (at additional costs) before implementing the program the first time.

*Surf-Fair* (Pieschl & Porsch, 2012) is another German manual-based program. The program aims to educate about cyberbullying and possible coping strategies and to reduce cyberbullying behavior in Grades 5–6. A video of a fictitious real-life situation is used to follow the method of anchored instruction. Students identify, discuss, and try to solve the presented problems. A CD-ROM provides the video as well as teaching materials. Surf-Fair consists of different modules and activities which can be implemented as a whole or only in the form of single elements. These are divided into introductory activities, activities with a specific focus and closing activities. The authors recommend implementing at least one exercise from each of these sections. Therefore, Surf-Fair presents a tool box which is to be assembled by the teacher specific to his or her needs. The program has not been evaluated as a whole so far. A first evaluation compared one class with a 90-min session with a class with two 90-min sessions (and a control class with no intervention). Cyberbullying und cyberbullying victimization increased in the control class, remained stable in the one-session class, and decreased in the two-session class. The two-session class further showed an increase in knowledge about cyberbullying and technological coping strategies (Pieschl, 2010; Urbasik, 2010, as cited in Pieschl & Porsch, 2012). Surf-Fair is available as a book including the CD-ROM.

In Spain, the *ConRed* program (Ortega, Del Rey, & Casas, 2012) was developed to tackle cyberbullying. It focuses especially on interaction in online social networks. The program aims to promote understanding of online safety strategies, foster positive uses of technology, promote supportive attitudes towards victims, and prevent cyberbullying and abuse of technology (e.g., Internet addiction). The program consists of eight sessions and first evaluation results indicate increased supportive attitudes towards victims and reduced problems (Bullying and Cyber, 2011; Del Rey, Casas, & Ortega, 2012).

No evaluation information was available for *Cyber Bullying*: *A Prevention Curriculum for Grades 3–5* (Limber, Kowalski, & Agatston, 2009) and *Cyber Bullying*: *A Prevention Curriculum for Grades 6–12* (Limber, Kowalski, & Agatston, 2008). These programs are not explicitly research-based. However, the authors have an extensive knowledge of the topic due to their previous research. Goals of the curricula are awareness-raising, promoting skills and resources for respectful interactions online, providing students with information on how to get help, and enhancing positive uses of technology. The manuals are accompanied by CD-ROMs with resources, handouts, and teaching materials. The curriculum for Grades 3–5 consists of five sessions with 40 min each to be taught weekly and consisting of a story, a discussion, and activities (Limber et al., 2009). The curriculum for Grades 6–12 consists of eight 50-min sessions. Real-life scenarios and peer-leaders are utilized as methods of teaching about cyberbullying (Limber et al., 2008).

## What Doesn't Work

A widely known resource is the video *Let's fight it together* by Childnet International (2007). It presents a cyberbullying situation with different roles of involvement and especially emphasizes the consequences of cyberbullying. The website provides accompanying teaching materials. This resource was evaluated by Thompson et al. (2012) within a DAPHNE III-funded project on cyberbullying. From the study, it seems that students only saw the film, but were not provided the lesson materials. Thus, the researchers did not find significant impact on the coping strategies used by students who saw the video. Generally, the students liked the video overall; 87 % rated it as at least "good". The video and materials are available online and are free of charge. We conclude from this that education-only interventions are unlikely to work.

Thompson et al. (2012) also evaluated the Child Exploitation and Online Protection Centre (CEOP) video resource *Exposed*. This video shows a girl sending her new boyfriend explicit photos who passes them on. Eventually, these photos get uploaded to a website and are thus made available to other students. As the CEOP focuses on sexual abuse, this video presents a sexting situation. However, this behavior can be viewed as a form of cyberbullying, especially with the incidents following the sending of the photos. Before using this resource, teachers must be trained by CEOP personnel in a half-day training (cf. Thompson et al., 2012). CEOP also provides lesson plans. Teachers reported feeling more confident about recognizing cyberbullying problems after the training. Students rated the video as satisfactory to good; higher ratings were achieved with younger students, girls and students involved in sexting incidents themselves. However, no significant effects on coping strategies were found. Materials and training for *Exposed* are free of charge.

A more general strategy which comes up regularly after high-profile media cases is the prohibition of cell phones in school. However, Steffgen, König, and Pfetsch (2009) found no significant change in cyberbullying and cyberbullying victimization as most cyberbullying takes place outside school anyway. Cyberbullying possibly only gets pushed into after-school time with this strategy.

## Recommended Best Practice

From our review of the literature, we recommend that
- Cyberbullying incidents be reported for immediate relief
- Communication be stopped with offensive individuals for immediate relief
- Communication channels be blocked for this cyberbully for immediate relief
- Positive parent–child relationships reduce the pain of cyberbullying
- Positive social skills and media competence reduce cyberbullying

- Positive school climate and peer relations in school reduce cyberbullying
- Rules on technology use, especially at home, reduce cyberbullying
- A need exists for the evaluation of prevention programs on cyberbullying

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# Bullying

## Markus Hess and Herbert Scheithauer

## Introduction

In recent years the problem of bullying has attracted significant attention from the public and researchers. The term "bullying" describes a subset of aggressive behavior. It can be defined as: An imbalance of power, meaning that for whatever reason the victim is not able to defend him- or herself against the attacks of the perpetrator (the bully) (e.g., Hong & Espelage, 2012; Olweus, 1994; Rigby, 1997; Salmivalli & Peets, 2008; Scheithauer, Hayer, & Petermann, 2003). Bullying is not a single event. It takes place repeatedly over a period of time and is systematically directed towards the same victim. Bullying can include acts of direct and indirect aggression. Bullying is proactive and not reactive and is, therefore, intended to harm the victim (Rigby, 1997). Direct forms of bullying are characterized by overt confrontations between bully and victim where perpetration is obvious. These include physical and verbal attacks, threats, blackmailing, destruction of the victim's property, and offending gestures. Indirect and relational forms of bullying can be described as being subtle,

making it difficult to identify the perpetrator. These include the use of gestures (e.g., looking away from the victim, shaking head when victim is present), acts of gossiping, social exclusion, spreading rumors, and other forms of social aggression (Alsaker, 2012; Scheithauer, Hayer, Petermann, & Jugert, 2006). Originally bullying was associated solely with direct physical or verbal forms of aggression. Therefore, it is not surprising that bullying was considered a boys' problem only. However, in recent years with more indirect and subtle forms getting attention it became obvious that girls also were involved in bullying.

Research on bullying is related mainly to the school environment. However, bullying takes place in other contexts like neighborhoods or the workplace. A similar concept is "victimization", and the terms victimization and bullying often are used interchangeably (Salmivalli & Peets, 2008). However, bullying and victimization can differ from each other since victimization can be limited to singular attacks.

Bullying not only describes a certain pattern of behavior, but also a process in a dynamic group context. The main protagonists in this process are the bully(ies) and the victim(s). However, since Salmivalli, Lagerspetz, Björkqvist, Österman, and Kaukiainen (1996) introduced the "Participant Role Approach" of bullying, the perspective on the bullying process has become more sophisticated. According to Salmivalli et al. (1996) participants in

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the bullying process can be assigned to different social roles: (1) bully(ies); (2) victim(s); (3) assistants (who actively support the bully, e.g., by fixing the victim); (4) reinforcers (who indirectly support the bully, e.g., by laughing at the victim); (5) defenders (who have a potential or who even try to defend the victim against attacks, e.g., by holding back the aggressors); and (6) outsiders (who don't intervene in any direction and try to "keep out" of the situation). An additional distinction needs to be made between passive victims and active victims, the latter showing the tendency to act in an aggressive way who are therefore at risk of becoming bullies themselves. In the research literature this group is called bully/victims (Scheithauer et al., 2003).

## DSM-IV-TR and Incidence/Prevalence Rates

Bullying is not classified in terms of a DSM-IV-TR (4th ed., text rev.; American Psychiatric Association [APA], 2000) category. However, one can discuss similarities to disorders listed in the DSM separating at least two perspectives, namely that of the victim and that of the bully. An additional distinction has to be made between passive victims who can be characterized as internalizing and withdrawn and active victims or bully/victims who show aggressive tendencies that can result in bullying. Although being a victim of bullying is not a diagnosis itself, it can be a potential risk factor for developing serious mental health issues like self-isolation, anxiety, and depression (e.g., Arseneault, Bowes, & Shakoor, 2010). In severe cases being victimized can result in suicide, the so-called "bullycide" (Rigby & Slee, 1999). Sometimes, victims of bullying and bully/victims display externalizing problems like aggressive, antisocial behavior, or carrying of weapons. Being victimized has been associated with psychotic symptoms later in life. According to Arseneault et al. (2010) only a few studies have addressed long-term consequences of being bullied, but these studies confirmed that bullying had negative long-term effects on the mental health of former victims (Ttofi, Farrington,

Lösel, & Loeber, 2011). For example, a retrospective study from Scandinavia found that bullying experiences in school were related to later depression, even when controlling for parental mental-illness and socio-economic status (Lund et al., 2009).

Being a bully represents a risk for later life adjustment. Recent research implies that bullying behavior predicts later involvement in criminal acts (Jiang, Walsh, & Augimeri, 2011; Olweus, 2011). Farrington and Ttofi (2011) followed children from 8 to10 years until 48 to 50 years of age. They found that bullying at age 14 was associated with criminal convictions, with self-reports of violent behavior, with higher levels of drug abuse, and with an unsuccessful life in different stages of later life.[1]

Connecting bullying to DSM-IV-TR criteria, one can infer that the bully status is most closely related to Conduct Disorder. Conduct Disorder is a repetitive and persistent pattern of behavior disrespecting basic rights of others or violating social norms. One of the major symptom criteria on axis I for a diagnosis of Conduct Disorder is "often bullies, threatens, or intimidates others" (APA, 2000).

Concerning victims, a clear focus lays on the possible consequences of being attacked by bullies. In terms of DSM-IV-TR criteria these consequences can be Depression, Anxiety Disorder, Specific Phobia (especially School Phobia), and Posttraumatic Stress Disorder (cf. Scheithauer & Hayer, 2008). Concerning bully/victim status, one can find links to symptoms of Oppositional Defiant Disorder which is characterized by an irritable and often angry mood and frequent loss of temper.

Data on the frequency of bullying vary between 9 and 32% for victims and 3–23% for bullies depending on measurement issues (single vs. multiple item assessment), cut-off point criteria (e.g., being bullied once over the last months vs. three times last month), information source (teacher vs. parent vs. self-report), and age

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[1]Life success was a composite measure consisting of number of addresses, partnership success, employment status, drug use, and general level of anxiety and depressive affect.

(range) of study participants (Currie et al., 2012; Stassen Berger, 2007). In our own German study 12.1 % of the participants reported bullying others and 11.1% reported being victimized at least once per week (Scheithauer et al., 2006).

## Biological/Genetic Factors

Studies investigating biological and genetic factors with regard to bully, victim, and bully/victim status are rare. However, taking a wider perspective, research suggests that biological and genetic factors may play a role (cf. Smith & Jones, 2012). From their review Brower and Price (2001) concluded that frontal lobe dysfunctions are associated with aggressive behavior in general and report that a focal orbitofrontal dysfunction is linked to inappropriate social judgments and the inhibition of empathy. From a recent review of studies on neurological factors associated with violent behavior, Fabian (2010) concluded that temporal cortex and striatal and premotor cortical neurons are involved in instrumental aggression. Additionally involved in the manifestation of instrumental aggression are the amygdala and ventral orbitofrontal cortex regions which are responsible for learning that a particular behavior is appropriate to reach certain goals.

In a controlled study conducted by Coolidge, DenBoer, and Segal (2004) based on teacher and self-reports, the authors reported that bullies compared to control adolescents showed a significant and clinically relevant elevated level of neuropsychological dysfunction and problems with executive control functions. However, some participants classified as bullies didn't show any clinically relevant neuropsychological and executive control dysfunctions. In another study using biological markers, Bollmer, Harris, and Milich (2006) assumed that physical arousal during a bullying episode reinforced subsequent bullying. They reported that physical arousal (as measured by skin conductance level) increased in bullies while telling them a bullying narrative, suggesting joy over the successful bullying incident instead of guilt or anxiety.

In recent years a growing interest in genetic factors contributing to bullying has emerged. For the related concept of antisocial behavior, reviews have concluded that 40–50% of the variance in antisocial behavior could be attributed to genetic factors (Rhee & Waldman, 2002; cf. Moffitt, 2005). To gain more insight into possible genetic factors associated with the bully, victim, or bully/victim status, Ball et al. (2008) analyzed data tracking the development of 1,116 pairs of twins. They reported that over 65 % of individual differences in victim status could be attributed to genetic factors. Bully status was even more strongly predicted by genetic factors and bully/victim status was also strongly influenced by genetic factors. The authors cautioned that one has to consider other variables like verbal abilities, socio-cognitive competence, friends, etc. which may mediate between genetic outfit and bullying status.

## Individual Factors Influencing Risk and Resiliency

Although bullying is always embedded in a social context, different individual factors have been found to enhance the risk of being victimized and of becoming a bully.

*Physical aspects*: Despite some opposing evidence (Olweus, 1978), most research suggests that physical features raise the probability of being victimized. The most obvious feature in this category is physical inferiority that results in the incapacity of defending oneself against the attacks of bullies (Alsaker, 2012). Other body characteristics increasing the risk of victimization include being overweight and impairments like strong glasses or physical handicaps (Smith, 2004).

Bullies are generally older than their victims (c.f. Scheithauer et al., 2003). In combination with age, they are sometimes (but not always) physically superior. It has to be mentioned that the feeling of superiority or inferiority is at least equally important in the bullying process than the real power balance or imbalance between bully and victim.

Considering gender as a physical feature, traditional perspectives assume that boys are more often involved in bullying and show more direct forms of bullying than girls (Espelage, Bosworth, & Simon, 2000; Rigby, 1997; Varjas, Henrich, & Meyers, 2009). However, recent research findings doubt the predictive power of gender. Rather it seems that boys and girls are both involved in indirect bullying and that gender differences are often negligible (Goldstein, Young, & Boyd, 2008; c.f. Hong & Espelage, 2012; Scheithauer et al., 2006).

*Psychological aspects*: Victims of bullying often show an increased level of internalizing behavior. They can be described as anxious, shy, submissive, and avoidant. They often have difficulties expressing their emotions adequately and show deficits in other related attributes like humor. They show lower levels of social competence (e.g., regarding prosocial behavior or cooperation) and are often socially withdrawn and lack self-efficacy. In addition, victims have problems asserting themselves in social interactions. Not surprisingly, psychosomatic symptoms are common in victims (c.f. Hong & Espelage, 2012; Scheithauer et al., 2003). Although it has not been investigated very often, studies have found that academically high achieving students were at risk for victimization (Woods & Wolke, 2004). Therefore, intelligence is not always a protective factor against victimization. Altogether victims often fit into a stereotypical picture of the "strange outsider". This makes them a potential target for bullies who find causes for their attacks. In addition, results confirm the view that the special type of individual feature is not the only relevant risk factor. It seems that a mismatch between individual characteristics and dominant group norms increases the risk of being bullied. The most salient individual characteristic of bullies is their aggressiveness. It has been suggested that bullying is an expression of an underlying antisocial personality structure (Lösel et al., 1999; Olweus, 1993). However, the stereotypical view of bullies as persons who are aggressive and lack social competencies and self-esteem has to be revisited (Baumeister, Bushman, & Campbell, 2000).

Some studies suggest that bullies are impulsive, show low levels of frustration tolerance, are neglected in their peer group, and exhibit socially adverse behaviors. In contrast, Sutton, Smith, and Swettenham (1999) have found that bullies qualified as leaders in their peer group and showed advanced levels of social understanding. They reported that bullies had an enhanced self-esteem and strong belief in their own, often physical, competencies. Applying a social information processing approach, studies have shown that bullies showed positive attitudes towards the use of aggression and considered aggression as a useful way to achieve personal goals in interactional contexts and social situations (Tobin, Schwartz, Gorman, & Abou-Ezzeddine, 2005). Still other research reported that bullies had low readiness to cooperate, lacked empathy, and had an increased urge for power and control (c.f. Olweus, 1993; Rigby, 1997).

Bully/victims differ substantially from victims in that they are prone to interpret ambiguous situations in a hostile way indicating problems with social information processing (Pellegrini, 1998; Wolke & Stanford, 1999). They tend to show low levels of self-regulation and are easily aroused. They are often characterized as hyperactive and impulsive. Different from most bullies, the aggressive acts of bully/victims are reactive, under-controlled, and often accompanied by anxiety (Olweus, 1993; Schwartz, Dodge, Pettit, & Bates, 1997). Altogether the bully/victim status is connected with a large spectrum of psychosocial problems ranging from externalizing to internalizing behavior (Andreou, 2000; Pellegrini, Bartini, & Brooks, 1999; Wolke, Woods, Stanford, & Schulz, 2001). Bully/victims are often students who are not popular among their peers and instead have a rejected status within their reference group (c.f. Scheithauer et al., 2003).

## Family Factors Influencing Risk and Resiliency

Family members of victimized children tend to be overprotective and sheltering (McNamara & McNamara, 1997). Especially boys with over-

protective parents are hindered to make new experiences and tend to avoid conflict situations. As a result, they do not learn to cope with conflict or risky situations and therefore do not act assertively when confronted with a bully attack. Studies have shown that victims receive less social support from their parents than non-victims (Holt & Espelage, 2007). With respect to gender differences Duncan (2004) found that the risk of becoming a victim increases when mothers show behavior that interferes with boys' development of autonomy and girls' development of connectedness. Especially girls with hostile and emotionally distant mothers have difficulties in learning social skills.

Not all children and adolescents who are victimized are affected in the same way. Therefore, it is useful to ask what factors may contribute to a buffering effect when bullying has occurred. The most important aspect is social support from family members. However, Rothon, Head, Klineberg, and Stansfeld (2011) have found that only moderate levels of social support mitigated the negative effects of being victimized. This can be explained by the fact that too much support easily satisfies the criterion of overprotection which was found to increase the probability of becoming a victim. On the other hand, low levels of support can lead to a decline in trust in parents and a feeling of not getting any help from them.

Being a bully is often associated with a complicated family situation—as studies on the influence of family variables on bullying suggest. Parents of bullies can often be described as hostile, emotionally distant, and rejecting towards their children. Often parents serve as negative role models when discussing parental conflicts in a hostile and aggressive way in front of their children (Smith & Myron-Wilson, 1998). Curtner-Smith (2000) has found that fathers tend to be absent or weak in families of bullies, and mothers often exhibit a permissive parenting style. Additionally, low levels of monitoring were reported, meaning that parents are not well-informed about the activities of their children. The role of fathers is discussed by Smith and Myron-Wilson (1998) following the assumption of a "cycle of violence" meaning that fathers who

have children who bully tend to have a "bully" history themselves.

Bully/victims often grow up in families characterized by inconsequent and harsh educational practices. Parental conflict and parental neglect in monitoring the activities of their children as well as hostile, aggressive, and restrictive parenting style are typical for families of bully/victims (Schwartz et al., 1997; Smith & Myron-Wilson, 1998).

## Social and Community Factors Influencing Risk and Resiliency

Although bullying can occur in different environments (from kindergarten to workplace), most research on contextual risk factors for bullying has been conducted in schools. The main reason for including contextual factors is that the frequency of bullying differs substantially between schools and even within schools when considering different school classes (Rigby, 1997). Several studies have addressed school structural features like class size and composition as potential risk factors for bullying. It appears that class size does not influence the frequency of bullying (O' Moore, Kirkham, & Smith, 1997; Scheithauer et al., 2006). Nevertheless, students from smaller classes report having more support from teachers and peers (Boyesen & Bru, 1999). Concerning the distribution of males and females within a class, research results are mixed. Scheithauer et al. (2006) found that victimization was more frequent in classes with high rates of male pupils, whereas Byrne (1994) investigated different school types in Ireland and identified an elementary boys' school as the one with the lowest level of bullying.

Studies which included different school types generally corroborate the assumption that bullying is more frequent in schools with lower academic levels (Atria & Spiel, 2003; Menesini, Modena, & Tani, 2009). However, Perren and Hornung (2005) reported that only the number of self-reported victims was higher in low-level compared with high-level schools but not the number of self-reported bullies.

Beaumont (2009, c.f. Alsaker, 2012) describes protective aspects of school atmosphere suited to enhance the feeling of safety at schools, namely a visible and coherent system of school rules of conduct, a cooperative atmosphere between staff members, joint school-wide activities, and inclusion of parents in school activities. Generally pupils who feel safe at school and who rate their school environment as positive will show lower levels of aggressive behavior (Kuperminc, Leadbeater, Emmons, & Blatt, 1997). Another element possibly reducing the likelihood of bullying at schools is the level of school connectedness. Students who do not feel connected to their school will have a higher probability of getting involved in bullying and victimization (Skues, Cunningham, & Pokharel, 2005).

Concerning class climate Schäfer, Korn, Brodbeck, Wolke, and Schulz (2005) found that stability of victim roles was higher in primary school classes with a more hierarchical structure concerning peer status within the class. Other studies have stressed the role of social structure within the school class as a possible factor predicting frequency of bullying. For example, Roland and Galloway (2002) report that aspects of class structure like class cohesion, the grade of concentration when completing school work, informal norms about peer relationships, and school work within the class are related to the frequency of bullying incidents.

A key element when evaluating the impact of school characteristics on the probability of bullying is the role of professional staff (e.g., teacher, social workers, etc.). The role of teachers is also highlighted in the downward spiral model of bullying developed by Olweus (cf. Scheithauer et al., 2003). Olweus assumes that teachers who act inconsistently or don't respond to acts of bullying reinforce bullying behaviors through processes of model learning and experiences of indulgence. Alsaker (2012) points out that teachers are responsible for monitoring activities of their students and to intervene if necessary. Furthermore, teachers who have a clear attitude against bullying and communicate it by effectively monitoring the classroom will discourage bullying in their classes (Hong & Espelage, 2012).

Concerning the peer context, it has been shown that bullies are often labeled as "cool" and popular within their peer group (Juvonen, Graham, & Schuster, 2003; Rodkin, Farmer, Pearl, & Van Acker, 2006). At first sight, contradictory to this finding is research reporting that bullies are often disliked by other peers (Warden & Mackinnon, 2003). However, one has to distinguish between acceptance and influence. Bullies seem to strive for influence more than for acceptance. Another factor reinforcing bullying behavior is the need to conform to aggressive group norms in order to enhance self-worth by external approval (Hong & Espelage, 2012).

Victims report having few close friends and that their social status is rather low so that they are often excluded from peer groups and lack social support from others. Ladd and Troop-Gordon (2003) have examined the question of whether social isolation is a cause or a consequence of being victimized. They found evidence for both causal directions.

As in families, social support in the peer group is the most important protective factor against bullying. Although social withdrawal and lack of social competence is a typical feature of victims, they often do not stand alone. From their review, Brank, Hoetger, and Hazen (2012) concluded that when victims had social support, this social support helped them to cope effectively with their victimization experiences (Davidson & Demaray, 2007; Holt & Espelage, 2007). Concerning mechanisms of peer support Rothon et al. (2011) found that when supportive peers interfered in bullying situations they reduced the negative effect of bullying. However, Rigby (2000) has reported no support for the hypothesis that social support moderates the effect of being bullied. Table 23.1 summarizes the risk factors contributing to different roles in the bullying process mentioned in the previous sections.

## Evidence-Based Treatment Interventions for Bullying

The distinction between intervention and prevention for bullying treatments is not clear because most preventive intervention programs against

bullying include efforts to reduce existing bullying problems. In the following sections we have tried to separate intervention from prevention. Scheithauer et al. (2003) proposed to divide anti-bullying approaches according to the context of the intervention into person-centered and context-centered approaches. Even more finely graduated is the distinction of treatments on a micro-, meso-, or macro-level (Rigby, 1997). State-of-the-art multifaceted anti-bullying programs tend to address different levels of anti-bullying treatment within the scope of a structured program framework (Olweus, 1993).

## What Works?

Interventions in the sense of the present section are most often placed around the bullying protagonists and their families. In the last decade several book chapters, reviews, and meta-analyses have addressed the question of how effective anti-bullying interventions are (Merrell, Gueldner, Ross, & Isava, 2008; Scheithauer et al., 2003; Smith, Ananiadou, & Cowie, 2003). However, to our knowledge, no approach solely devoted to intervention of bullying cases has been evaluated systematically in three or more controlled trials.

## What Might Work?

Rigby (2010) recently systematized intervention approaches against bullying in schools and identified six ways to intervene when bullying occurs: (1) discipline, (2) strengthening the victim, (3) mediation, (4) restorative practice,[2] (5) support group method, and (6) *Shared Concern*. Many educators advocate disciplinary methods for handling bullying behavior. Such a method should include the school-wide public distribution of

anti-bullying rules, so that every student is acquainted with the rules. In addition, the sanctions for breaking the rules have to be made public. Clearly, a multitude of variations concerning rules and consequences are possible. One such approach was evaluated by Metzler, Biglan, Rusby, and Sprague (2001). Their so-called *Effective Behavior Support Program* was successful in reducing aggression among students. In general, punitive approaches to tackling bullying are the most widespread technique used by teachers (Rigby & Bauman, 2010).

Strengthening the victim can include verbal training of assertive verbal responses to verbal bullying attacks. Success depends on the resources of the victim and situational factors. Mediation can take place when involved persons agree to seek help to resolve the conflict and when power imbalance between bully and victim is small. By applying restorative practices the bully should acknowledge his wrongdoing and is obliged to act in a way to establish a positive relationship between him and the victim. It should be noted that systematic evaluations of the approaches, "strengthening the victim", "mediation", and "restorative practice," are lacking (Rigby, 2011).

Humanistic approaches (Rigby, 2007) include the support group method which is very similar to the *No Blame Approach* (Robinson & Maines, 2003) and the method of *Shared Concern*. These approaches have in common the elements of trying to understand the motivation behind the behavior and the building of a trustful relationship with all persons involved in the bullying process (Rigby, 2007). Only when a positive relationship between bullying participants and the intervening person is established a solution to the problem will be possible.

*Shared Concern and No Blame Approach*: Rigby (2007) has summarized the five main assumptions of both programs. They are: (1) It is important to generate empathetic concern in bullies. (2) It is important to minimize a feeling of being blamed for the bully. (3) Following empathetic concern are positive actions which show a sense of responsibility from the bully. (4) Bullying is a

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[2] Restorative practices are aimed at rebuilding a positive relationship between bullies and victims. The bully has to acknowledge his wrong behavior and act in a restorative way (e.g., directly apologizing to the victim for the offending behavior in an official meeting).

**Table 23.1** Main risk factors of different bullying roles based on existing research. (Adapted from author, 2013)

| Level | Bullies | Victims | Bully/Victims |
|---|---|---|---|
| Biological/genetic | • Frontal lobe regions and amygdala involved<br>• Physical arousal as reinforcement<br>• Evidence for heritability | • Evidence for heritability | • Evidence for heritability |
| Individual | • Older, physically powerful<br>• Proactive aggression<br>• Positive attitude towards violence<br>• High self-confidence<br>• Low level of empathy<br>• Need for power and control<br>• Sometimes lack of self-esteem<br>• Sometimes not well-regulated | • Physical salience (e.g., overweight, glasses, body impairment)<br>• Shy, withdrawn, internalizing<br>• Feeling of inferiority<br>• Lack of self-esteem and assertiveness<br>• Lack of social skills<br>• Anxious | • Hostile information processing<br>• Not well-regulated<br>• Impulsive<br>• Psychosocial problems<br>• Lack of social skills |
| Family | • Harsh, restrictive, disciplinary parenting style<br>• Parental neglect<br>• Negative parental role models<br>• Absent fathers<br>• Lack of monitoring | • Overprotective and sheltering parents<br>• Inhibiting social experiences<br>• Distant mothers<br>• Lack of support<br>• Distant fathers | • Inconsistent and harsh parenting<br>• Hostile parenting<br>• Parental conflict<br>• Parental neglect<br>• Lack of monitoring<br>• Lack of parental warmth and positive emotionality |
| Peers | • Bullying as normative within group<br>• Enhancing self-worth through social approval<br>• High popularity<br>• Sometimes peer rejection | • Peer rejection<br>• Lack of social support<br>• No friendships | • Peer rejection<br>• Lack of social support<br>• Low popularity |
| School/class | • Negative school atmosphere (no school-wide activities, no parent participation)<br>• No anti-bullying policy with rules and sanctions<br>• No effective supervision of out of class situations<br>• Low academic level<br>• No school connectedness<br>• Strong hierarchy promoting bullying<br>• Composition of class (e.g., gender distribution)<br>• Negative class climate (e.g., low cohesion)<br>• Teacher characteristic (e.g., no interfering, bad role model) | | |

group phenomenon, and it is necessary to work with the other persons who are involved. (5) Following the immediate process of concern and positive actions, future monitoring and encouraging of positive actions are necessary.

According to Rigby (2007) the *No Blame Approach* involves seven steps. They are: (1) interview the victim, (2) organize a group meeting, (3) tell the group how the victim is feeling about being bullied, (4) attribute responsibility to the group, (5) collect helpful suggestions by the group to help the victim, (6) make clear to the group that they are responsible for implementing the positive suggestions, and (7) individual meetings with the group members and the victim to monitor the progress of the

intervention. Rigby (2007) concludes that the *No Blame Approach* is a valuable approach appropriate for younger students and is strongly dependent on the competence of the person who applies it. One evaluation study of the *No Blame Approach* was conducted in Germany (Bund für soziale Verteidigung, 2008). Based on qualitative interviews and standardized questionnaires, 220 bullying incidents which were treated using the *No Blame Approach* were analyzed. Results show that in 87 % of the cases bullying stopped after implementation of the *No Blame Approach*.

A principal assumption of *Shared Concern* is that bullies are embedded within a group context and that membership in the group can trigger ambivalent feelings about the bullying incident (Rigby, 2007). Thus, the bully is aware and troubled by his behavior which he feels forced to exhibit due to real or imagined group pressure. On the other hand, group approval is satisfying for the bully and to justify his actions he may try to blame the victim as deserving the attack. This embeddedness in the group may lead to de-individuation of the bully. Therefore, to establish concern for the victim, the bully has to be "re-individualized" (Rigby, 2007, p. 221) in one-to-one situations with the teacher and the victim. The method of *Shared Concern* follows four steps. The first one involves interviews with the bullies. The second stage is a one-on-one meeting with the victim. At stage three a meeting between the victim and the group involved in the bullying episode is prepared. The final stage comprises that meeting when the teacher functions as a mediator and the meeting concludes with an agreement on how to act in the future. Rigby and Slee (2008) report two studies evaluating the method of *Shared Concern* with mixed results. In the first one, participants ranged from 12 to 17 years and a reduction of bullying was only found in the youngest age group of 12-year-old adolescents. The second study found significant decreases in bullying reported by teacher and students. Another evaluation study for *Shared Concern* conducted by Rigby and Griffiths (2011) with 17 schools participating found

significant decreases in bullying after implementing the program.

*Psychotherapy*: Several therapeutic methods have been applied in a bullying context. For example Young and Holdorf (2003) used solution-focused brief therapy (SFBT) for tackling bullying incidents involving 118 referrals from secondary schools in Great Britain. SFBT assumes that positive change is not achieved by focusing on the causes of problem, but rather on possible solutions. Certain techniques are applied to point attention to past success, personal resources, and the preferred future. The participants in the study completed a self-rating after every session and success was achieved when they rated their situation as improved and were no longer in need of support. In sum, 92 % of the referrals did reach this point. Nickel et al. (2006) applied brief strategic family therapy (BFST) to tackle bullying. This form of psychotherapy focuses on the treatment of dysfunctional conflict resolution styles within families. Within a transactional framework it is assumed that improved family relationships should result in reduction of behavioral problems of adolescents. In a controlled trial with 72 participants (36 intervention) who rated themselves as bullying others, a brief therapy consisting of twelve 100-min sessions was applied. Results showed that compared to the control group bullying decreased significantly at the end of the brief therapy. Summing up their review, Powell and Ladd (2010) concluded that despite promising pilot evaluations more systematic studies are needed to prove the effectiveness of family therapy as a way to tackle bullying.

## What Doesn't Work?

The following efforts appear ineffective: group therapy with bullies, education only approaches, and anger management with bullies.

Psychopharmacology and bullying

To our knowledge there is no study using psychopharmacological treatments for bullying.

The prevention of bullying

## What Works?

To our knowledge only one anti-bullying prevention program has been successfully evaluated three times or more in independent controlled trials. The Anti-Bullying Program developed by Olweus (1993) is likely the most widespread anti-bullying program in use. This multimodal approach includes interventional and preventive measures on the school level, measures on the class level, and interventions on the individual student level. The rational of the program is that the school has to represent a safe and positive learning environment (c.f. Scheithauer et al., 2003, p. 159). The Olweus Anti-Bullying program consists of seven mandatory steps and a number of aspects which are considered as desirable. The seven steps are (1) administration of a standardized questionnaire (the bully/victim questionnaire); (2) implementation of a 1-day workshop to inform and discuss the topic with all representatives from the school; (3) improvement of supervision during school breaks; (4) developing classroom rules and sanctions to prevent bullying and to react in a consistent way when bullying occurs in cooperation with the students; (5) regular class meetings including depiction and discussion of typical bullying situations by performing role-plays; (6) one-on-one meetings with bullies and victims to immediately stop bullying with a priority of ensuring the safety for the victim; and (7) meetings with the parents of involved students. The program is rooted in learning theory and has been systematically evaluated with large samples around the world. Results from Norway (the homeland of the Olweus Anti-Bullying program), the US, Great Britain, and Germany are summarized in Olweus, Limber, and Mihalic (1999), with the overall result that it decreases bullying, increases satisfaction with school, and increases the frequency of discussions about bullying enhancing the awareness for the problem.

## What Might Work?

In their review Farrington and Ttofi (2009) compared the effectiveness of 53 evaluations of anti-bullying programs around the world. Their report not only includes whole programs but also evaluations of the effectiveness of different typical elements of anti-bullying programs. Program elements included: whole school anti-bullying policy, classroom rules, school conferences, curriculum material, classroom management, cooperative group work of professionals, work with bullies and victims, work with peers, information for teachers and parents, improved playground monitoring, disciplinary methods, non-punitive methods (methods not based on negative sanctions like restorative practice, *No Blame Approach*), school tribunals and bully courts, teacher training, parent training/meetings, videos, and virtual reality computer games. Farrington and Ttofi (2009) concluded that many of the programs could be considered as possibly effective. The effectiveness of program elements depends on parent training/meetings, disciplinary methods, duration and intensity of the bullying prevention program for children and teachers. One has to comment on the meta-analysis that it strongly focuses on intervention aspects of anti-bullying programs and to some degree neglects elements which have a stronger preventive emphasis.

That said, two prevention programs aimed at adolescents which showed promising evaluation results and are implemented nationwide in their countries will be described in more detail (for an overview of other effective programs see Strohmeier & Noam, 2012; Olweus et al., 1999; Ryan & Smith, 2009; Farrington & Ttofi, 2009).

*The KiVa Anti-bullying Program*: KiVa which is an acronym for "Kiusaamista Vastaan" (finish for "against bullying") was designed and evaluated by Salmivalli and colleagues at the University of Turku (Finland) to target students between 7 and 15 years of age (Salmivalli & Poskiparta, 2012). The program is based on the assumption that initially uninvolved bystanders can play a pivotal role in maintaining or ending a bullying incident (Salmivalli et al., 1996). In many cases bullying becomes normative in groups meaning that group members have accepted that victims are constantly attacked by bullies. To change such negative developments KiVa aims at influencing the bystanders and their behavior. Like the Olweus Anti-Bullying

program, the KiVa program takes a school-wide approach. It includes a universal prevention component with lessons using group discussions, short films about bullying, and role plays accompanied by virtual learning elements (e.g., computer games). Further, it responds on an individual level to specific bullying incidents. For each grade, ten training sessions (90 min) are recommended. This program is completed at grades 1, 4, and 7. The program takes about ten months to be completed. The lessons that are held by teachers move from general topics (emotions, respect in relationships) to specific topics concerning bullying. In addition a KiVa team consisting of three school staff members plus the class teacher are charged with tackling existing incidents of bullying by carrying out interviews with the involved students. School staff is trained in a 2-day workshop before implementation of the program begins. To date, evaluation data include 234 Finnish schools. A randomized controlled trial revealed significant decreases in bullying in KiVa classes compared to control classes. In a later dissemination evaluation, the results were still positive but smaller in effect size (Salmivalli & Poskiparta, 2012).

*Fairplayer.Manual*: The preventive intervention program *Fairplayer.Manual* (Scheithauer & Bull, 2008; Scheithauer, Hess, Schultze-Krumbholz, & Bull, 2012) is a three-level intervention against bullying. Those levels are: (1) the individual student level, (2) the class/group level, and (3) the school/teacher level. An emphasis is laid on the group processes promoting bullying and changing these negative group aspects to favor a clear anti-bullying attitude and improved group behavior. Exercises on the class level represent the main part of the *Fairplayer.Manual*. Concrete aims of the program are: (1) Raising awareness, (2) changing pro-bullying attitudes, (3) creating a positive class climate and promoting positive peer relationships, (4) promoting social-emotional competencies, and (5) avoiding and/or decreasing bullying to help students acquire strategies to react to bullying incidents. These goals are pursued by using the following methods: (1) discussion groups, information, feedback, and structured role plays, (2) cognitive

behavioral methods like the implementation of class-wide rules against bullying, (3) influencing students' levels of social information-processing, promoting social skills (e.g., showing and probing behavioral alternatives in structured role-plays), (4) the moral dilemma discussion method,[3] (5) modifying group dynamics by behavioral exercises.

These elements are implemented in 15–17 sessions of about 90 min per session (with about 4–6 month for implementation of the whole program). Teachers should attend a 4-day workshop before the program starts and are coached and supervised during the implementation process. To involve parents in the program two meetings are held, one at the beginning of the project and one at the end.

After a pilot evaluation with 226 participants, the *Fairplayer.Manual* was evaluated three times with three independent samples of altogether about 450 adolescents ranging from 11 to 17 years of age. Two of these evaluations are completed. The first pre- and post-study showed a noticeably, although statistically not significant, decline of number in the bullies, victims, and bully/victims after program implementation. Further, prosocial behavior increased significantly and legitimation of aggression decreased significantly in classes with high treatment integrity (Scheithauer et al., 2012). The second evaluation reported an increase in the number of self-reported bullies and victims in the control group but not in the intervention group with a significant positive intervention effect in the number of self reported victims. In addition, self-reported bullying behavior as well as teacher and peer-rated relational aggression decreased significantly in the intervention group compared with the control group (Bull, Schultze, & Scheithauer, 2009).

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[3] In a moral dilemma discussion the participants discuss age appropriate naturalistic conflict situations in a highly structured fashion moderated by an adult person. The structured setting ensures that possible arguments are related to each other and a productive discussion can develop.

## What Doesn't Work?

Mishna (2008) offers several reasons for the often inconclusive findings in anti-bullying program evaluations. Program success may depend on the commitment from the participating institutions, on the measures used to assess bullying, on differences in implementation quality, and on the need to present tailored programs which fit the individual situation of school, class, etc. One can also argue that a growing awareness of the bullying topic makes existing bullying problems more evident. This sensitivity may cause an increase in reported bullying incidents by participants of anti-bullying programs. Finally, some effects may not be visible in the short run, but may exert their positive influence after the initial evaluation procedure has concluded.

Research suggests that the following efforts may be ineffective in tackling bullying incidents: (1) peer-oriented measures like peer mediation, especially when at-risk adolescents are grouped together; (2) pure social skills training and curriculum-based programs only aiming at changing group norms and attitudes at the classroom level; (3) anger management and enhancing self-esteem in bullies; (4) individualistic approaches solely focusing on bullies and victims. Effectiveness is also reduced when (5) structured prevention programs are fragmented and only partially implemented and when (6) implementation is lacking a monitoring of treatment integrity (Smith, Pepler, & Rigby, 2004; Vreeman & Carroll, 2007; Whitted & Dupper, 2005).

## Recommended Best Practice

Best practice for intervening and preventing bullying can be summarized as follows:

1. Before implementing a program, it is necessary to ascertain the frequency of bullying and victimization.
2. Any program should take into account the awareness of the target group concerning the bullying problem and the expected degree of commitment to the program.

3. The program should be tailored to the special needs of the target group.
4. It has to be clear what resources are available for program implementation.

For a program to be successful the following aspects have to be considered:

(a) The program should be of sufficient length and should be of high intensity.
(b) It should include aspects of supervision of out-of-class activities, for example school playground monitoring by local staff.
(c) It should include a system of clear and visible anti-bullying rules and appropriate firm sanctions for misbehavior.
(d) It should include the establishment of a school-wide anti-bullying policy.

On a more interactional class level, it should include the following:

(e) The compiling of anti-bullying rules with the students and regular discussions about bullying.
(f) All teachers must function as positive role models and act immediately and consistently when bullying occurs.
(g) The training of social skills and strategies to avoid or end bullying incidents.
(h) Activating, training, and encouraging bystanders to support victims.
(i) Creating a class climate where bullying is not normative but dismissed.

In sum, a program aiming at reducing and avoiding bullying should focus on both intervention and prevention. It should take a broad perspective including not only the immediate protagonists of a bullying incident, namely the bully and the victim, but must also involve persons like reinforcers, defenders, and bystanders. It should address the responsible adults, namely teachers and family members. Moreover, it should take an institutional perspective to positively influence school policy and school culture as a whole.

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# Delinquency and Violent Behavior

**24**

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Although juvenile arrests for violent crimes and juvenile victimization rates have declined, juveniles adjudicated as delinquent continue to be at substantial risk of perpetrating—and/or being the victims—of violent acts. In this chapter, we begin with an overview of the scope of the problem, developmental perspective on the etiology of delinquency and violence, followed by a brief discussion of relevant DSM-5 changes in diagnostic criteria. We discuss the complex nexus of genetic, biologic, individual, family, and situational factors related to risk and resiliency for

delinquency and violent behavior. Finally, we describe and review research on interventions and prevention programs, and briefly discuss psychopharmacology approaches to adolescent delinquency and violence.

## Juvenile Violence in Perspective

The United States continues to be one of the more violent countries in the world despite the decline in rates for juvenile violence (Puzzanchera, 2007; Snyder & Sickmund, 2006; World Bank, 1994). Though there has been a significant decrease in juvenile crime, in 2007 juveniles were involved in 1 in 10 arrests for murder and about 1 in 4 arrests for robbery, burglary, larceny-theft, motor vehicle theft, and weapons violations (Puzzanchera, 2007). In 2007, law enforcement agencies in the United States made an estimated 2.18 million arrests of persons under age 18 (Puzzanchera, 2007). In 1993, the peak of juvenile crime, there was a murder arrest rate of 14.4 per 100,000 juveniles and in 2007, the juvenile murder arrest rate was 4.1 arrests per 100,000 juveniles ages 10–17 (Puzzanchera, 2007). These declines have been linked to (1) reductions in violent crime in large urban areas; (2) a decline in the use of firearms; (3) a decrease in violent crime perpetrated by black males; and (4) declining rates of substance use (Snyder & Sickmund, 2006). Though substantial declines in juvenile

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arrest rates have been recognized, crime committed by juveniles remains unacceptable because of the personal, social, and economic costs associated with victimization and criminal justice involvement for those involved.

Current research suggests that youth violence can best be understood from a developmental perspective because its origins are firmly rooted in early development and behavior (Farrington, 2011; Tolan, Guerra, & Kendall, 1995). What has continued to remain consistent is that the majority of juvenile arrests are male; however, female arrests are on the rise, indicating the need for better understanding of both female offenders, and the juvenile justice system response. Since females accounted for almost one-third of arrestees in 2007 (Guthrie, Cooper, Brown, & Metzger, 2012; Puzzanchera, 2007), it is imperative that delinquency programs are able to meet the unique needs of both adolescent males and females. Most evidence-based programming has been based on research about male offenders, leaving significant gaps in both our understanding and response to female offenders (Zahn et al., 2010).

The etiology of delinquent behavior and violence is complex and multidimensional. Violence is defined as "aggression out of control or out of proportion to the circumstances" (Kruesi, 2007, p. 619). Juvenile delinquency refers to acts committed by a minor that violate the law or penal code. Each state has their own definition of juvenile delinquency, with repeated felony offenses most often associated with serious delinquency. Research and literature regarding adolescent violence and serious juvenile delinquency yield at least three main findings:

1. Early onset of delinquency predicts later offending.
2. There is significant continuity in criminal behavior in that serious juvenile offenders are more likely to become adult offenders.
3. A small number of chronic juvenile offenders commit a significant portion of all crimes.

Recent research on etiology has examined gender and age differences, including delinquency age of onset, and life-course patterns that may discern chronic serious offenders from youth who engage in delinquent behaviors circumscribed by

opportunity and delinquent peer associations. Such research aids in the development of evidence-based interventions by elucidating how specific etiological differences impact subgroup differences. Tailored or matched intervention approaches can then be developed for important offender subgroups (e.g., chronic violent offenders; female offenders), that are effectively delivered in less restrictive community settings, and provide combinations of targeted and/or multifaceted comprehensive approaches, that integrate advances in our understanding of the interplay among the most relevant biologic, individual, familial, and situational factors.

## The DSM-5 and Mental Health Disorders

The Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5) made changes to how disorders were previously identified. The multiaxial system is eliminated, and individual disorders are now organized on developmental and lifespan considerations, so there is no longer a separate section on disorders first diagnosed in infancy, childhood, and adolescence (American Psychiatric Association, 2013). The new DSM-5 chapter on Disruptive, Impulse Control, and Conduct Disorders brings together disorders that were usually first diagnosed in infancy, childhood, and adolescence, and the chapter on impulse control disorders. These essentially are externalizing self-regulation disorders of emotions and behavior, linked to personality features of disinhibition and negative emotionality. The most common diagnosis associated with serious adolescent delinquency and violent behavior is conduct disorder. While conduct disorder is not synonymous with violence and serious delinquency, it is characterized by the violation of the rules of society and the rights of others, including harm to people and property. Results from a nationally representative sample indicate a conduct disorder lifetime prevalence of 9.5 %, with a median age of onset between 11 and 12 years. Conduct problems are significantly more prevalent for males than females (12 % vs. 7 %) and in

urban areas (Nock, Kazdin, Hiripi, & Kessler, 2006). Associated comorbid diagnoses include attention-deficit hyperactivity disorder (ADHD) (now listed in the chapter on neurodevelopmental disorders), oppositional defiant disorder (ODD), intermittent explosive disorder (also involving high rates of aggression), and substance use disorders. Developmentally, most cases of conduct disorder that emerge prior to adolescence are likely to have met criteria for ODD (APA DSM-5, 2013). The DSM-5 criteria for conduct disorder were largely unchanged but a descriptive specifier has been added for children who present with limited prosocial emotions. This specifier includes "lack of remorse or guilt," "callous—lack of empathy," "unconcerned about school performance," and "shallow or deficient affect". The implementation of the limited prosocial emotions specifier within DSM-5 could help to specify diagnostic subtypes and further investigate etiology and conduct disorder nset of at least one criterion characteristic of conduct disorder prior to age 10 years; (2) conduct disorder, adolescent-onset type; absence of any criteria characteristic of conduct disorder prior to age 10 years; and (3) conduct disorder, unspecified onset: age at onset is not known. Many children with the early onset subtype also have comorbid attention-deficit/hyperactivity disorder and other neurodevelopmental difficulties, and their conduct is more likely to persist into adulthood. A severity rating (e.g., mild, moderate, and severe) has been added to reflect the degree of extensiveness and severity of symptoms across settings. Childhood-onset conduct disorder has been associated with higher rates of ADHD and anxiety disorders, and perceived and total hostility scores than adolescent-onset conduct disorder. Adolescent-onset was associated with higher rates of PTSD, alcohol and substance use disorders, complex comorbidity (i.e., 6+ diagnoses lifetime) (Connor, Ford, Albert, & Doerfler, 2007).

Early onset conduct disorder youth have a different comorbidity profile with greater central nervous system dysfunction, aggression, ADHD, low IQ, and a family history of externalizing disorders. Together, these factors indicate a more biologic and genetically established etiology for the early onset type (Moffitt et al., 2008). These youth have earlier and extensive histories of delinquency and conduct disordered behavior that are more persistent and chronic, and therefore more likely to progress into adult antisocial behavior.

## Biological and Genetic Factors

Several key genetically based factors have been found in recent years that identify biological factors related to antisocial and aggressive behavior. Biological research is beginning to provide an understanding into what makes a violent offender. These evolving elements include birth complications, hormone levels, genes and neurotransmitters, and brain structure abnormalities. Several studies have shown that babies who suffer birth complications are more likely to develop conduct disorder, delinquency, and impulsive crime and violence in adulthood (Liu, 2011; Raine, 1993, 2002b; Ratchford & Beaver, 2009). Birth complications that can lead these lasting impediments include anoxia (getting too little oxygen), forceps delivery, hypoxia (e.g., cord compression), and preeclampsia (hypertension leading to anoxia) are thought to contribute to brain and central nervous system damage, impaired intellect, and this impairment in turn may predispose to antisocial and criminal behavior (Liu, 2011; Raine, Brennan, & Mednick, 1997).

Two decades of neuroendocrine stress response research has implicated the hypothalamic–pituitary–adrenal (HPA) axis in the development of antisocial behavior in children (Hawes, Brennan, & Dadds, 2009). The hypothalamus region of the brain regulates autonomic functions such as heart rate and other arousal tasks. Early onset conduct disorder has been associated with lower cortisol levels, a byproduct of stress response in humans. Underactive stress cortisol reaction, caused in part by anything from prenatal HPA dysregulation due to maternal distress, to desensitization to chronic victimizations such as abuse and neglect, may play a role in juvenile crime (de Vries-Bouw et al., 2012; van Goozen & Fairchild, 2008). Genes are a factor in the etiology of aggression, emerging in early childhood,

and affecting the stability of aggression into adulthood. Because aggressive behavior is a complex trait, it is thought to be regulated by multiple genes (polygenetic) (Craig & Halton, 2009), as well as multiple environmental and gene/mechanism relationships. Genetic effects do not operate in an isolated fashion, and appear to be moderated by gender differences and environmental adversity (Caspi et al., 2002; Frazzetto et al., 2007; Guo, 2008).

A continuing and growing body of molecular genetic research investigates allelic associations to assess whether a known polymorphism (allelic variant of a gene) is related to a particular phenotype (aggressive behavior) in an unrelated sample of individuals. The candidate genes most typically selected for research have been those implicated in the synthesis or metabolism of the neurotransmitters dopamine and serotonin, including both receptors and transmitters. Alleles of specific genes like monoamine oxidase A (MAOA) have been identified and linked with predispositions to violence (Ellis, 2005; Raine, 2008). Low MAOA activity results in elevated levels of serotonin in the brain contributing to aggressive behavior (and mood disorders). Hohmann et al. (2009) examined the role of genes in the dopamine and serotonin systems in adolescents and found individuals with the dopamine receptor D4 gene with the 7r (DRD4 7r) allele reported significantly more externalizing behavior (e.g., aggression, violence, delinquency) than carriers of other gene variations.

This type of allelic gene research usually requires that the polymorphism have an identified and closely related marker, such as a protein, enzyme, or amino acid associated with the phenotype. In theory, the behavior-affecting genes act by altering brain neurotransmitters that regulate emotion and behavior. The functioning of neurotransmitters may be altered in a variety of ways including by regulating the amounts released, influencing the number (e.g., density) and type (e.g., sensitivity) of receptors that the neurotransmitters can bind to, and impacting the rate of degradation and reuptake from the synaptic cleft. These gene-protein polymorphisms (or variations in gene expression) lead to changes in

neurotransmitter functioning (transmission and metabolism) that affect the functional state of the brain, and ultimately contribute to changes in neurotransmitter regulated aggressive behavior (Popova, 2006).

While there are no genes directly controlling behavior, genes encode pivotal enzymes that influence the metabolism of neurotransmitters, such as serotonin or 5-HT. Even though serotonin is probably the most thoroughly investigated neurotransmitter in the etiology of aggression, often there is more than one neurotransmitter affecting aggression and antisocial behavior at a time (Beaver et al., 2007; Vaughn, DeLisi, Beaver, & Wright, 2009). In addition, genetics not only play a role in the development or etiology of antisocial behaviors, but they also can mediate the likelihood of antisocial problems later on. An interesting study by Caspi et al. (2002) found that MAOA mediated or settled the effect of maltreatment. Children with high levels of MAOA were less likely to develop antisocial problems. Future research will continue to explore these complex gene, and gene/environment relationships.

Twin and adoption studies provide further insights in gene-to-crime theory. While evidence demonstrates that identical twins are more concordant for criminality than fraternal twins (Raine, 2008), adoption studies have an advantage in research since they have the ability to efficiently separate out genetic and environmental influences since the babies/young children were separated from their criminal, biological parents early in life and sent out to other families. If these children grow up to become criminal at greater rates than foster children whose biological parents were not criminal, this would imply a genetic influence in the subject's biological parents. While this is but one example, a review of 15 other adoption studies conducted in Denmark, Sweden, and the United States shows that all but one reports a genetic basis to criminal behavior (Barnes & Jacobs, 2013; Beaver et al., 2007; Burt & Mikolajewski, 2008; Raine, 1993; Rhee & Waldman, 2002; Vaughn et al., 2009). Heritability accounts for substantial variance in human aggression (Rhee & Waldman, 2002).

Research into psychophysiological measures continues to yield insights into the biology of aggression and autonomic nervous system underarousal (hypoactivity). Raine (2002a) and others have examined whether antisocial individuals are chronically underaroused including the correlation between underarousal (e.g., less empathetic, more sensation seeking, and less prosocial) and antisocial behavior (Lorber, 2004; Ortiz & Raine, 2004; Raine, 2002b). Traditional psychophysiological measures of arousal include fear response, heart rate, skin conductance activity (El-Sheikh, Keiley, & Hinnant, 2010), and electroencephalogram (EEG) measured during a "resting" state. Aggressive or delinquent children, particularly those with callous-unemotional (CU) traits, may be underresponsive to normal environmental stressors or stimuli (desensitization), and therefore be aggressive because they lack appropriate fear, or have a stronger need to seek stimulation. Data on resting heart rate provides support for underarousal in antisocial youth. Indeed, the findings for heart rate level (HRL) on noninstitutionalized antisocials are believed to represent the strongest and best replicated biological correlate of antisocial behavior in children and adolescents (Armstrong & Boutwell, 2012; de Vries-Bouw et al., 2011; de Vries-Bouw et al., 2012; Dierckx et al., 2014; Jennings, Piquero, & Farrington, 2013; Ortiz & Raine, 2004; Raine, 2002a; Sijtsema et al., 2010).

Brain imaging studies of violent populations have identified structural abnormalities and deficits, in regards to offenders. These studies indicate that violent offenders have structural and functional deficits, specifically brain lesions, in the frontal and temporal lobes (Bufkin & Luttrell, 2005; Henry & Moffitt, 1997; Raine, 1993; Raine & Buchsbaum, 1996; Yang, Shin, Noh, & Stein, 2007). These lesions are thought to be associated with differences in executive functioning accompanied by low academic achievement, low self-control, self-regulation, and emotional processing difficulties. While these lesions represent structural and executive functioning deficits that may partially link abnormal brain formation to violence, currently there is no agreed upon functional explanation.

## Risk and Resiliency

Research on risk and resiliency factors associated with youth violence has explored influences at the individual, family, peer, school, and community levels (Beaver, 2011; Ferguson, San Miguel, & Hartley, 2009; Weisz (Ed) & Kazdin (Ed), 2010; Hawkins, Laub, & Lauritsen, 1998; Hawkins, Graham, Williams, & Zahn, 2009). Resilience is often defined as a person's ability to positively adapt or achieve success despite having faced adverse situations—poverty, maltreatment, witnessing violence—that could lead to negative outcomes such as delinquency (Kaplan, 2005). It is the capacity to withstand and cope with significant challenges that threaten stability, viability, or development (Masten, 2011, p. 494). Resilience research seeks to explain how protective factors in individuals and their environments buffer or moderate the effect of risk for some youth, versus others with similar risk factor profiles (U.S. Department of Health and Human Services [DHHS], 2001; Wright & Masten, 2005). Like risk factors, there are a wide variety of protective factors (e.g., temperament, nurturance and positive attachments, positive school experiences, empathy, adequate social cognitive skills) associated with resilience that have and are being studied for their buffering impacts on serious juvenile offending (Broidy, Cauffman, Espelage, Mazerolle, & Piquero, 2003; Luthar, 2006; Rutter & Quinton, 1984; Smith, Lizotte, Thornberry, & Krohn, 1995; Stouthamer-Loeber, Wei, Loeber, & Masten, 2004).

## Individual Factors Influencing Risk and Resiliency

A multitude of individual risk factors have been studied and identified. Some of the most prominent factors include gender (Stoddard, Zimmermann, & Bauermeister, 2012), a difficult early onset temperament (Barker & Maughan, 2009), impulsivity (Farrington, 2005), as well as lower than average IQ (particularly verbal) (DeYoung et al., 2006;

Farrington, 2005). Boys are more likely to show neurocognitive deficits, hyperactivity, impulse control problems, and undercontrolled temperamental features.

Developmentally, the prevalence and incidence of serious delinquency and violence is at its maximum in adolescence and young adulthood, and declines thereafter. Consequently, the majority of young, serious offenders are not career criminals. Because the threat of arrest is a deterrent for most serious adolescent offenders, the original crime is not necessarily a good predictor of future crimes (Bersani, Nieuwbeerta, & Laub, 2009). Yet, as we have already seen, early onset of childhood problems, specifically severe aggressive and disruptive behavior, is a significant and powerful risk factor for later antisocial behavior (Connor, 2012; Frick & White, 2008; Hawkins et al., 2000). By age eight, a child's aggressive behavior across situations can be relatively stable and predictive of adult aggression (Farrington, 1990; Farrington, Ttofi, & Coid, 2009) with the early onset of violent behaviors being predictive of similar or more serious behaviors over time (Connor, 2012; Farrington & Hawkins, 1991; Frick & White, 2008; Hawkins, Herrenkohl, et al., 2000; Tzoumakis, Lussier, Le Blanc, & Davies, 2013).

Early onset and subtype risk factors not only help researchers and clinicians understand etiology, they are also useful in pathway research. Longitudinal pathway research by Moffitt (1993) identified at least two types of delinquency patterns: (1) an early life-course persistent pattern, and (2) an adolescent-limited pattern. The early life-course is a group of children who are characterized by an early onset of delinquent behaviors and persistent stability of these behaviors across time and settings into adulthood. For example the life-course continuum could reflect antisocial behaviors of hitting others at age 4, truancy at age 10, drug dealing at age 16, robbery at age 22, and fraud at 30 years of age. Life-course persistent (LCP) offenders are characterized by the presence of early onset offending, neurodevelopmental deficits, and family adversity. Adolescence-limited antisocial behavior is motivated by the gap between biological maturity and social maturity (e.g., desire to access adult roles prematurely); it is learned from antisocial models that are easily imitated, and it is continued according to the principles of learning theory. Compared to life-course-persistent offenders, adolescence-limited delinquents show little endurance in their antisocial behavior. Adolescence-limited delinquents may also have crime-free periods in the midst of their short-lived antisocial behaviors. For example, they may use alcohol with friends but continue to obedient at home. In 2006, Moffitt added a third group identified as low-level chronic offenders to her taxonomy. Low-level chronic offenders in many ways look like life-course persistent offenders but they have isolating personality disorders, which prevent them from offending at higher levels.

Stattin, Kerr, and Bergman (2010) also tested Moffitt's (1993) theory using a longitudinal study of male crime data over three timeframes (childhood, adolescence and adulthood). The life-course-persistent males had the most difficult upbringing, school difficulties and adolescent adjustment problems, and the most social and mental health problems in middle age. Adolescence-limited offenders did not differ much from non-offenders, which supports the premise that juvenile delinquency behavior in adulthood is not guaranteed by juvenile activity.

We have seen the growing body of research literature that supports the importance of callous-unemotional (CU) traits (e.g., lack of empathy and guilt) in identifying and understanding a subset of early onset impulsive, and highly aggressive conduct disordered youth. These youth tend to be fearless and sensation seeking, less prosocial and deterred by punishment, and are more likely to continue their later antisocial and delinquent behavior (Frick, 2012; Frick & Viding, 2009; Frick & White, 2008; Kahn, Frick, Youngstrom, Findling, & Youngstrom, 2012; Scheepers et al., 2011). Conduct disorder youth with CU traits enter an early onset developmental pathway that is particularly difficult to treat. Children with CD, but without CU traits, tend to not display significant deficits in their capacity to feel guilt or empathy, and appear to have anxiety

and about the effect their behavior has on others (Frick, 2012).

Loeber and colleagues proposed a different type of typology with three overlapping pathways—overt, covert, and the authority conflict pathway (Loeber et al., 1993; Loeber & Hay, 1994). The overt pathway involves acts that tend to be directly aggressive and include physical fighting and violence. The covert pathway involves acts that are less directly aggressive and more concealed such as stealing, lying, property damage, and theft. The authority conflict pathway is the earliest pathway, and involves such behaviors as defiance, disobedience, truancy, and running away. These pathways reflect evolving individual differences in development (Loeber & Burke, 2011).

Silverthorn and Frick (1999) suggest a gender-specific pathway for girls, which they labeled as the delayed-onset pathway. In this developmental course, the antisocial behavior in girls, such as cognitive deficits, a dysfunctional family, and/or the presence of an unemotional interpersonal style, may be present in childhood, but do not lead to severe and overt antisocial behavior until adolescence. Therefore, the adolescent-onset for girls is similar to the childhood-onset pathway in boys but there is no comparable pathway in girls to the adolescent-onset pathway in boys (the second pathway discussed).

In contrast of Moffitt (1993), and other early life-course theorist covering much shorter developmental time spans, Sampson and Laub (2003) examined trajectories of offending of delinquent boys from ages 7 to 70, who were, originally, in the Gleuck Unraveling Juvenile Delinquency 1950 study. The researchers assessed if there was a distinct offender group whose crime rates remained stable with increasing age, and whether individual differences, childhood characteristics, and family background can forecast long-term trajectories of offending. Results indicated crime declines with age sooner or later for all offenders groups, whether identified by childhood and adolescent risk factors, or retrospectively based on trajectories. Sampson and Laub (2003) and Bersani et al. (2009) concluded that desistance processes are working even among active

offenders and predicted life-course persisters, and that childhood predictions account poorly for long-term trajectories of offending. They also reported on "turning points" which have the ability to turn trajectories from negative to positive and from positive to negative. A good example of a turning point that continues to strengthen a new trajectory away from antisocial behavior is marriage. Marriage limits the person's past (negative peer association) behaviors, provides new relationships, new commitments and structured environments and patterns that focus on more conventional social-behavioral roles.

Individual racial and ethnic differences also are associated with variations in rates of arrests, convictions, and sentencing for juvenile offending. Official record studies consistently show that blacks exhibit higher levels of involvement in criminal offending than whites do (Piquero & Brame, 2008). In 2007, although black youth accounted for just 17 % of the youth population ages 10–17, black juveniles were involved in 51 % of juvenile Violent Crime Index arrests and 32 % of juvenile Property Crime Index arrests (Puzzanchera, 2007). Research has identified overrepresentation of minority youths in contact with police and court officials and in nearly every state. African-Americans are often involved in juvenile justice at more than twice their presence in the general population ages 10–17 (Feld, Hawkins, Graham, & Kempf-Leonard, 2011).

Understanding these racial disparities, however, is another matter; no one model has sufficiently addressed the reasons for such disparities (Hawkins, Laub, Lauritsen, & Cothern, 2000). Although racial disparities in official reports of juvenile offending appear to be on the decline, differences remain that will likely continue to spur theoretical and policy debate. Individual-level economic disadvantage is often studied, for example, but it is an inappropriate proxy for community-level socioeconomic disparity, which is rarely measured. Community and neighborhood factors can contribute to racial disparities in offending via through multiple mechanisms including: (1) through increased opportunities for involvement in antisocial behavior (e.g., differential involvement), and/or (2) by greater police surveillance/presence

in disadvantaged neighborhoods (e.g., differential selection) (Chauhan, Reppucci, Burnette, & Reiner, 2010; Peterson & Krivo, 2005; Sampson & Wilson, 1995; South & Messner, 2000).

## Family Factors Influencing Risk and Resiliency

Family factors associated with the development of violent and offending behavior involve an array or characteristics and aggressive behaviors (Beaver, 2011; Maguin et al., 1995; McCord, 1979). Typically these factors can be characterized as either discreet (family size) or process (poor family management) factors, often linked to conduct disorders. Family risk factors include child maltreatment, younger maternal age, family size, parental alcohol and drug abuse, parental antisocial behavior and criminality, poor family management and supervision practices, harsh or inconsistent discipline, poor parent child relations, parental rejection, and having a delinquent sibling (Denno, 1990; Eron, Huesmann, & Zelli, 1991; Ferguson et al., 2009; Fergusson, Horwood, & Nagin, 2000; Liu, 2011; Maguin et al., 1995). Certain family factors like maternal age and family size are more likely to contribute to serious delinquency if they are part of a larger constellation of family and cumulative risk factors. In contrast, a supportive family environment may contribute to the development of dispositional resources that successfully regulate emotional and behavioral functioning across the lifespan and represent additional routes that protect mental and physical health of the youth. Such resources include optimism, psychological control, and other personality characteristics (Aspinwall & Taylor, 1997).

## Social and Community Factors Influencing Risk and Resiliency

### Peer Factors

Negative peer influences also contribute to the risk for aggressive, delinquent, and violent behavior (Gifford-Smith, Dodge, Dishion, & McCord, 2005; Liu, 2011). As children age, peer influences versus family influences take on increasing importance in contributing to delinquency and criminal behavior. Children who display antisocial tendencies at an early age are more likely to be rejected by their peers because of their aggressive behaviors. Antisocial behavior and peer rejection then serve as risk factors for promoting later deviant peer associations with pro-violence or delinquent attitudes (Dodge et al., 2003). Association with deviant peers may then prevent desistence for those who do offend, and present transition difficulties into adulthood. Conversely, associating with peers who exhibit anti-violent prosocial attitudes is a protective factor that reduces a youth's chance of later offending. Peer groups appear to be a place for linking negative and aggressive behaviors for youth already headed in that direction (Gifford-Smith et al., 2005; Loeber & Hay, 1994). Association with antisocial peers may further contribute to the escalation of antisocial behaviors, including substance abuse, delinquency (Farrington, 2006; Farrington & Hawkins, 1991), and school failure and gangs (U.S. Office of the Surgeon General, 2001).

### School Factors

The majority of serious delinquent youth typically had one or more school problems, including suspension, truancy, poor academic achievement, lack of school connectedness, and drop out (McNeely, Nonnemaker, & Blum, 2002; Snyder & Sickmund, 2006). School problems are common and powerful correlates to delinquency (Maguin & Loeber, 1996; Snyder & Sickmund, 2006). It is not unusual for chronic juvenile offenders to have significant school problems including the need for special education programs for emotional, remedial, and learning disability deficits (Mullis et al., 2005). The school environment itself can also be a risk factor that fosters noncompliance, aggression, delinquency, and violence. Disorganized schools structures with lax discipline and enforcement of rules, crowded physical space, and lack of conformity to behavior routines can increase the propensity

toward aggression and violence (Flannery, 1997; Gottfredson, 1981; Guerra, Huesmann, Tolan, Acker, & Eron, 1995; Sander, Patall, Amoscato, Fisher, & Funk, 2012). Outside of the school environment, unsupervised after-school time is a risk factor that has been associated with increased delinquency substance abuse, and association with deviant peers (Flannery, Williams, & Vazsonyi, 1999).

## Community Factors

Inner city urban neighborhoods tend to have higher crime rates and more severe criminal events than their suburban and rural counterparts. Neighborhoods that have high concentrations of risk factors generally have high crime rates, especially among youth (Ludwig, Duncan, & Hirschfield, 2001). Neighborhood and community factors that influence delinquency development include poverty, gang involvement, availability of drugs (Maguin et al., 1995), the presence of violence or high crime rates (Berg, Stewart, Brunson, & Simons, 2012; Gottfredson & Hirschi, 1990; Sampson, Raudenbush, & Earls, 1997), and low neighborhood attachment and social disorganization (Chung & Steinberg, 2006; Maguin et al., 1995; Sampson & Lauritsen, 1994). Gottfredson & Hirschi, 1990, 2003) argue that neighborhoods characterized by social disorganization have high levels of economic deprivation, familial adversities, and social isolation that can impact important socialization mechanisms in community and child-rearing practices that influence the development of self-control, a key variable associated with delinquent behavior.

## Summary

Although we have briefly and separately examined the most common risk and protective factors, it is the interrelationships among these factors that hold the most promise in explaining serious juvenile delinquency and violent offending. For example, children with early difficult temperaments and neurocognitive self-regulatory deficits (e.g., high levels of negative emotionality) are more likely to experience harsh parental discipline, particularly if they are male. These children also are more likely to have parents with similar histories (heredity) and resulting deficits in their own impulse control capacities. Experiencing such harsh and hostile discipline in turn may contribute to social information-processing deficits whereby hypervigilant children misattribute hostile intent in other's motives, and therefore react aggressively (Dodge, Pettit, Bates, & Valent, 1995; Pettit, Dodge, & Brown, 1988). As these coercive interaction styles become reinforced through repeated family and community transactions, they become valued and routinized interaction and problem-solving styles, leading to delinquency, conduct disorder, and other serious aggressive and antisocial behaviors. Disentangling these types of complex risk (and protective) factor interrelationships, conceptualized with moderating and meditating influences during developmentally sensitive time periods, represents the current and future state of juvenile violence and delinquency research.

## Evidence-Based (EB) Treatment Interventions in the Community and Home

According to Caldwell and Van Rybroek (2013) effective programs have similar components which include: a philosophical view; the approach is grounded in human behavior theory; the approach relies on a structured treatment system; the model has guiding principles and a structured manual; and have program modules to deliver services, assure treatment integrity, include evaluation, and have defined program outcomes.

Family-based treatments for delinquent and violent adolescents have emerged as evidence-based treatments and have been taken to several hundred community practice settings. These models include multisystemic therapy, functional family therapy, multidimensional treatment foster care, and, a promising family-based approached, brief strategic family therapy (Henggeler & Sheidow, 2012). To be designated a *Program That*

*Works*, the program must significantly reduce antisocial behavior in multiple studies and those studies much include a comparison group (Caldwell & Van Rybroek, 2013).

## What Works

Multisystemic Therapy or MST targets chronic, violent, or substance-abusing male or female juvenile offenders, aged 12–17, at risk of out-of-home placement, and their families. MST is a family-based model that addresses multiple factors related to delinquency across key ecological settings. It promotes behavior change in the youth's natural environment, using a strengths-based approach (Henggeler & Sheidow, 2012). Critical service characteristics include low caseloads (5:1 family to clinician ration), intensive and comprehensive services (2–15 h per week), and time-limited treatment duration (4–6 months) (Henggeler, 1999). Treatment adherence and fidelity are key ingredients for achieving long-term, sustained effects and decreasing drug use.

Evaluations of MST for serious juvenile offenders have demonstrated a reduction in long-term rates of re-arrest, reductions in out-of-home placements, and improvements in family functioning, and decreased mental health problems for serious juvenile offenders (Greenwood & Welsh, 2012; Henggeler, 1999; Henggeler, Mihalic, Rone, Thomas, & Timmons-Mitchell, 1998). Based on the program's success, rigorous randomized trials were conducted to explore the feasibility and effects of adaptations of MST with other target populations. MST adaptation results have been positive for treating problem sexual behavior, child abuse and neglect, substance abuse, serious emotional disturbances, and chronic health care conditions (MST Services, 2012). MST is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Model Program (http://blueprintsprograms.com/allPrograms.php).

Functional Family Therapy (FFT) is a family-based intervention program that targets youth between the ages of 11 and 18 who are at risk for and/or presenting with delinquency, violent or disruptive behavior, or substance use. It is time limited, averaging 8–12 sessions for referred youth and their families, with generally no more than 30 h of direct service time for more difficult cases. Like MST, FFT is multisystemic and multilevel in nature, addressing individual, family, and treatment system dynamics. FFT integrates behavioral (e.g., communication training) and cognitive-behavioral interventions (e.g., a relational focus). Assessment is an ongoing and multifaceted part of each phase (Alexander & Parsons, 1973; Henggeler & Sheidow, 2012).

Aside from effectively treating aggressive, delinquent, and disruptive youth, FFT has also been successfully used for teens with substance abuse problems. Other notable effects relate to reducing youth's penetration and progression through other service systems, particularly more restrictive and higher cost services (Alexander, Barton, Shulman, Waldron, & Sexton, 1998; Aos et al., 2011; Greenwood & Welsh, 2012; Sexton & Alexander, 2000; U.S. Department of Justice Programs, 2011; Underwood, Sandor von Dresner, & Phillips, 2006). However, Fagan (2013) emphasizes the need for program fidelity and cites the FFT program in Washington from the Washington State Institute for Public Policy (Barnoski, 2002) that found the youth who received services from FFT therapists who deviated substantially from FFT had higher rates of recidivism than the youth in the control group. Adherence of implementation integrity is a key component for program success. FFT is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Model Program.

Multidimensional Treatment Foster Care (MTFC) is a cost-effective alternative that targets teenagers with histories of chronic and serious criminal behavior at risk of incarceration. The program emphasizes behavior management methods to provide youth with a structured and therapeutic living environment. Parents receive pre-service training, supervision, and attend weekly group meetings run by a program case manager. Additional supervision and support is also given during daily telephone calls to check on youth progress and functioning. During placement, the youth's biologic (or adoptive)

family maintains contact with their child through supervised home visits and frequent contact with the MTFC case manager regarding their child's progress. In addition, they also receive family therapy with the ultimate goal of returning the youth back to the home. Continuity is maintained because biological parents are taught to use the same type of structured behavior management between the MTFC case manager and teachers, probation officers, and other key individuals in the youth's life. Evaluations of MTFC have demonstrated that program youth compared to control group youth are stepped down from restrictive placements quicker, spend fewer days incarcerated at 12-month follow-up, and have fewer subsequent arrests (Aos et al., 2011; Greenwood & Welsh, 2012; Chamberlain, 2002; Chamberlain & Reid, 2002; U.S. Department of Justice Programs. (n.d. [a, b, c, d, e])). MTFC is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Model Program.

## What Might Work

The Risk-Need-Responsivity (RNR) model offers a guide for offender assessment and treatment planning by targeting certain categories of offenders to target specific services (Vitopoulos, Peterson-Badali, & Skilling, 2012). The RNR model has shown to reduce offender recidivism by up to 35 % by directing services for moderate and high-risk cases; addressing criminogenic needs; and utilizing cognitive social learning approaches for reducing criminal behavior (Andrews & Bonta, 2010). A comparative analysis of 39 male and 37 female justice system-involved youth indicated the RNR assessment tool predicted recidivism equally for males and females; the matching of services to RNR factors was significantly related with decreased offenses for males but not for females. A criticism of the model is that it doesn't take into account the unique needs of female offenders (Vitopoulos et al., 2012). Though the RNR model began as an adult model, it is being more frequently used in adolescent settings.

Brief Strategic Family Therapy (BSFT) is a brief (approximately 12–15 sessions over 3 months) family-based intervention for children and youth aged 6–17 who are at risk for substance abuse and behavior problems (Robbins & Szapocznik, 2000; Robbins, Szapocznik, & Perez, 2007; Szapocznik & Williams, 2000). Szapocznik and Williams (2000) initially investigated the effectiveness of BSFT to engage and retain children with conduct problems and their families in treatment. Later studies focused on treating adolescent substance abuse and included both Hispanic and African American families. Through the BSFT Training Institute, the model has been disseminated to approximately 100 sites in the United States and other countries, and these sites have treated more than 2,500 families (Henggeler & Sheidow, 2012).

BSFT employs a structural family framework and focuses on improving family interactions. Therapists coach families to improve interactions contributing to youth problem behavior. Major techniques include joining the family and organizing a team; diagnosing family strengths, problem situations, and interactions; and restructuring these interactions to attain positive levels of family functioning. Evaluation results demonstrate decreases in substance abuse, conduct problems, associating with antisocial peers, and improvements in family functioning (Robbins et al., 2007; Robbins & Szapocznik, 2000; Szapocznik & Williams, 2000).

*Wraparound/Case Management* is a multifaceted intervention designed to keep delinquent youth at home and out of institutions by "wrapping" a comprehensive array of individualized services and support networks "around" young people, rather than forcing them to enroll in predetermined, inflexible treatment programs (Bruns, Burchard, & Yoe, 1995; National Wraparound Initiative Advisory Group, 2006). Wraparound programs feature several basic elements and most programs require clearly defined performance measures, which are used to track the progress of the wraparound initiative and guide its evolution over time. Repeated evaluations of the program have found marked improvement in behavior and socialization, and youth are

significantly less likely to recidivate than graduates of conventional programs (Carney & Buttell, 2003; National Wraparound Initiative Advisory Group, 2006). Many wraparound programs have focused on youth with mental health needs but the program appears to have the ability to reach different types of at-risk youth, including those without a mental health diagnosis such as those with a substance use disorder.

Positive Family Support Check-Up formally the Adolescent Transitions Program (ATP) is a multilevel, family-centered intervention targeting children at risk for problem behaviors or substance use. The program is delivered in a middle school setting. Parent-focused segments of Positive Family Support Check-Up concentrate on developing family management skills such as using rewards, monitoring, making rules, providing reasonable consequences for rule violations, problem solving, and active listening (Dishion & Kavanagh, 2003). Connell, Dishion, Yasui, and Kavanagh (2007) reported the Positive Family Support Check-Up intervention group had significantly fewer arrests, less use of tobacco, alcohol, and marijuana, and less antisocial behavior compared with the control group. Positive Family Support Check-Up is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Promising Program.

Communities that Care (CTC) is a system for planning and organizing community resources to address adolescent problematic behavior such as aggression or drug use. It has five phases to help communities work toward their goals. The CTC system includes training events and guides for community leaders and organizations. The main goal is to create a "community prevention board" comprising public officials and community leaders to identify and reduce risk factors while promoting protective factors by selecting and implementing tested interventions throughout the community. Hawkins et al. (2012) reported through Grade 10, delinquency, alcohol use, and cigarette use were lower by grade 10 among students in CTC communities than in control communities. CTC is also an Anne E. Casey

Foundation supported Blue Print for Healthy Youth Development Promising Program.

Alternatives to detention have brought encouraging results and one such intensive home-based program, under the evaluation of Dr. Kretschmar is the Ohio's Behavioral Health and Juvenile Justice Program (BHJJ) which involves youth who are involved with the criminal justice system who also suffer from mental or behavioral health issues, diverting them from local and state detention centers into more comprehensive, community-based mental and behavioral health treatment (Kretschmar, Flannery, & Butcher, 2011). Programs such as these may offer a practical community-based option to the institutionalization of youth (http://begun.case.edu/wp-content/uploads/2013/07/BHJJ-2011-Evaluation-Final.pdf).

## Intensive Protective Supervision

Since probation is the major intervention tool of the juvenile court, it is important to discuss intensive protection supervision models. Intensive protective supervision (IPS) models remove or divert juvenile offenders from criminal justice institutions and provide them with more proactive and extensive community supervision than they would otherwise receive. Offenders assigned to IPS are closely monitored by counselors who carry reduced caseloads and interact more extensively with the youth and their families than traditional parole officers. The counselors make frequent home visits, provide support for parents, develop individualized service plans, utilize frequent drug testing, and arrange for professional or therapeutic services as needed. While many different types of intensive juvenile supervision models exist, evaluation results thus far have ranged from mixed to finding IPS ineffective (Greenwood, 2008). More recently, Mulvey et al. (2010) reported as one of the highlights of the Pathways to Desistance longitudinal study that in a 6-month period post-incarceration, intensive community (intensive or non-traditional) supervision was effective for youth who have committed serious

offenses, and these youth were more likely to work, attend school, and reduce re-offending. Since probation and parole is a major tool of the juvenile court, it is likely that IPS models will continue to be developed and refined.

## What Does Not Work

Programs that emphasize characteristics such as discipline, structure, challenge, and self-esteem that are not directly associated the offender's criminal behavior have shown to be ineffective as a deterrent to juvenile delinquency and violence. These types of programs such as wilderness programs, boot camps, and Scared Straight, while popular with the media or the general public, do not generally guarantee lower recidivism rates for program participants (Aos, Miller, & Drake, 2006; Lipsey, 1992; MacKenzie, 1997; MacKenzie, Wilson, & Kider, 2001).

## Prison Deterrence Programs

Petrosino, Turpin-Petrosino, and Buehler (2003) conducted a meta-analysis of seven randomized studies of juvenile deterrence programs. Their meta-analysis revealed not only that these types of programs were ineffective, but that they were actually associated with *increases* in post-intervention offending rates (Petrosino et al., 2003). An updated 2013 meta-analysis of seven interventions support the 2003 findings that not only do these programs fail to deter crime, but they actually lead to more offending behavior. The intervention increases the odds of offending by between 1.6 to 1 and 1.7 to 1 (Petrosino, Turpin-Petrosino, Hollis-Peel, & Lavenberg, 2013).

## Waiving Juveniles to Adult Court

To deal with juvenile crime, many states charge juveniles as adults. This is done by a process of waiver. Waiver allows adult criminal courts to have jurisdiction over juveniles. Once a juvenile

case is *waived* from juvenile court to adult court, that is where the juvenile will be tried as an adult and receive adult sentences. Anti-waiver arguments include the age of the juvenile (younger juveniles are less able to make decisions and have immature brain development), type of crime, and if the juvenile should be provided rehabilitation services in a juvenile setting compared to an adult setting (Flesch, 2004). In fact, Jordan and Myers (2011) examined Pennsylvania youths legislatively waived to adult court finding (1) greater severity in punishment in adult court; (2) no difference in punishment certainty between juvenile and adult courts; and (3) court processing occurred more quickly in juvenile court. Juveniles present with a number of unique factors that warrant special attention in the criminal justices system that may be neglected if waived to the adult courts and may have no effect on recidivism or juvenile behaviors as a whole.

## Evidence-Based (EB) Treatment Interventions in Controlled Settings

### What Works

Theoretically, rehabilitation has been the goal of juvenile correctional programs. Yet, in general, treatment in public facilities and custodial institutions is less effective than other community alternatives. On a practice level, juvenile intervention programs are often poorly implemented, similar to adult correctional treatment programing. Additionally, given the large number of delinquents and offenders who pass through residential and institutional facilities, there are a relatively small number of recent evaluations that test appropriately matched treatments that have been clearly defined and analyzed rigorously. The systematic meta-analysis review conducted by Lipsey (1992) examined results from 548 studies conducted from 1958 to 2002 including evaluations of intervention policies, practices, and programs. Lipsey (1992) grouped evaluation studies into seven categories: Surveillance; deterrence; discipline; restorative programs; counseling; skill building; and multiple

coordinated services. Lipsey (1992) found interventions constructed on punishment and deterrence appeared to increase criminal recidivism; whereas therapeutic approaches based on counseling, skill building, and multiple services had the greatest impact in reducing criminal behavior. Garrido and Morales (2007) also found evidence of positive effects for cognitive and cognitive-behavioral treatments for juvenile offenders in controlled settings.

## What Might Work

Two promising programs for juveniles that demonstrate the above principles are worth mentioning. First, the Residential Student Assistance Program (RSAP) is a residentially based substance abuse program to address high-risk multi-problem youth living in a residential facility (i.e., correctional setting, mental health facility). This program uses trained professionals to provide individual and group substance abuse prevention and early intervention services to youth in residential facilities. This program has been recognized as a model program by the Substance Abuse and Mental Health Services Administration (U.S. Department of Health and Human Services, 2001). Second, Aggression Replacement Training (ART) combines social skill training, or structured learning, with anger management training and moral education (Goldstein, Glick, & Gibbs, 1998; U.S. Department of Justice Programs, 2012). ART has been used in schools as well as detention facilities. Therapist modeling and group role playing are used to observe and practice the development of social skills such as identifying problems, stating complaints, and resisting group pressure (Gundersen & Svartdal, 2006). Anger control training involves using self-talk to decrease aggressive and impulsive behaviors. Three randomized controlled studies found that youth improved social skills (Goldstein et al., 1998); however, behavioral improvement was mixed (Washington State Institute for Public Policy, 2004). Nevertheless, OJJDP re-reviewed ART in 2012 and rated the program as "*effective*" (U.S. Department of Justice Programs, 2012).

## What Does Not Work

The theory of high rates of institutionalization and incarceration are expected to correlate with crime reductions has continued to find the opposite outcome and calling incapacitation theories into question (Stahlkopf, Males, & Macallair, 2010). Not only youth incarceration in the juvenile system demanding examination but the transferring of youth into adult court has also garnished additional scrutiny. Schubert et al. (2010) found youth that are transferred into the adult court system may have negative outcomes. Investigations into this phenomenon suggest analyses of larger outcomes from these groups and a better understanding of those youth retained in the juvenile system compared to the characteristics of those youth transferred are needed. Youth incarceration has proponents that believe incarceration can be viewed as a time of rehabilitation and may impact youth maturation in a positive way (Dmitrieva, Monahan, Cauffman, & Steinberg, 2012).

## Psychopharmacology and Adolescent Delinquency and Violent Behavior

Adolescent aggression and violent behavior are a public health problem that have grown in recent years and research into its characteristics, causes, related factors, and successful treatment options have received considerable attention from policy makers, researchers, clinicians, and community agencies and families themselves. Aggressive behavior can be the outcome of typical adolescent development or the result of a traumatic exposure to an external event(s) which may contribute to the behavior (Hanana & Ronen-Shenhav, 2013). Often the behavior is seen in conjunction with other issues such as drug addiction and mental health problems (Abram, Teplin, McClelland, & Dulcan, 2003; Huizinga & Jakob-Chien, 1998; Liu, 2011; Nevels, Dehon, Gontkovsky, & Alexander, 2010; Tardiff, 1999). Empirical studies have consistently found a co-occurrence between

violent juvenile offending and drug use, with more violent offending being associated with more serious drug use (Doran, Luczak, Bekman, Koutsenok, & Brown, 2012; Huizinga & Jakob-Chien, 1998; Mulvey, Shubert, & Chassin, 2010). Teplin, Abram, McClelland, Dulcan, and Mericle (2002) found that 60 % of male juvenile detainees and two-thirds of female juvenile detainees had diagnosis-specific impairments for one or more psychiatric disorders. Rates of depression and dysthymia were especially high among both male and female detained youth. Treating adolescent aggression is particularly difficult because it is associated with a wide range of primary diagnoses, such as ADHD, depression, conduct disorder, and mental retardation (Pappadopulos et al., 2006).

Empirical studies have consistently found a co-occurrence between violent juvenile offending and drug use, with more violent offending being associated with more serious drug use (Doran, Luczak, Bekman, Koutsenok, & Brown, 2012; Huizinga & Jakob-Chien, 1998; Mulvey, Shubert, & Chassin, 2010). Commonly abused substances which have been found to be associated with violent behavior include stimulants, hallucinogens, amphetamines, inhalants, prescription drug use for nonmedical reasons, and alcohol (Kretschmar & Flannery, 2007).

Neurotransmitters such as dopamine, norepinephrine, and serotonin form the basis to the transmission of information throughout the brain, and in this sense underlie all types of behavior, including sensation, perception, learning and memory, eating, drinking and, more controversially, antisocial behavior. Though serotonin, dopamine, and norepinephrine account for only a small proportion of cell firing in the brain, they are thought to be highly important in the context of brain and behavior.

A single psychopharmacological cure for juvenile aggression and violence does not exist, since there are various causes of this behavior. The psychological disorders which are associated with youth violence are, however, often responsive to drug treatment. Short-term psychopharmacological treatments for psychotic patients who may need immediate treatment include a variety of antipsychotics and antianxiety drugs (Schur et al., 2003; Tardiff, 1999). Psychostimulants such as amphetamines have also shown promise in the long-term reduction of violence associated with attention-deficit/hyperactivity disorder. Several other long-term medications such as risperidone, lithium, beta blockers, and anticonvulsants have tentatively proven effective in reducing violence among patients, particularly when paired with psychotherapy and social interventions (Engel, Abulu, & Nikolov, 2012; Miller, Riddle, Pruitt, Zachik, & dosReis, 2013; Nevels, Dehon, Gontkovsky, & Alexander, 2010). According to Engel et al. (2012), successful pharmacological treatment of adolescents needs to include (1) good assessment, prior to diagnosis, (2) identification of target symptoms known to respond to medication, and (3) a working therapeutic alliance.

## The Prevention of Delinquency and Violence

While many factors are associated with youth violence and crime, longitudinal research on risk factors and developmental pathways has helped to identify a common set of predictive factors associated with the etiology and progression of delinquent behaviors. The general goal of most prevention and intervention models is to reduce such risk factors and enhance protective factors across multiple life domains (i.e., individual, family, peer, situational, and community). Therefore, it is difficult to separate pure prevention strategies from intervention strategies because in theory as well as practice they are often integrated to address multiple-need populations across different contexts. Likewise, it is difficult to separate early aggressive behavior from delinquency because childhood aggression is one of the strongest antecedents of delinquency, and therefore is targeted by most delinquency prevention and intervention programs.

In reviewing the evidence for effective delinquency treatment and prevention, we focus on community settings, briefly describing programs or interventions that have the strongest empirical support, followed by those that are particularly

promising, and then those that don't work. In addition, due to the strong developmental relationship between aggression and delinquency, and the need for early intervention, we will briefly discuss effective prevention programs. See Petrosino et al. (2013) for a systematic review of Juvenile Awareness Programs for Preventing Juvenile Delinquency.

## What Works

Most prevention models are either family-based or school-based. A comprehensive review of all prevention programs is beyond the scope of this chapter, but we have included a table of key resources in this field (Table 24.1). While there are a number of family-based home visitation models, the premiere model in terms of effectiveness is the Nurse Family Partnership (NFP). The Nurse Family Partnership consists of intensive home visitation by nurses for low-income, at-risk pregnant women during their first pregnancy and for the first 2 years after the birth of their child. The program is designed to help women improve pregnancy outcomes, infant and toddler care, and maternal health and development, including educational and vocational achievement, as well as prevent future unplanned pregnancies. A 19-year follow-up of low-income, teenage mothers and their children who participated in NFP showed that girls in the NFP program were less likely to have been arrested and convicted. In addition, girls born to mothers who received NFP had fewer children and less Medicaid use than those in the comparison groups (Eckenrode et al., 2010). NFP is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Model Program.

Promoting Alternative Thinking Strategies (PATHS) is a universal, school-based curriculum implemented by teachers and counselors. PATHS develops social and emotional competencies in elementary school-aged children ideally beginning at entry into school and involving and continuing through fifth grade. Teachers lead 20–30-min sessions three times per week, helping children to identify, manage, and regulate feelings, while developing perspective-taking and problem-solving skills. PATHS has been effectively utilized with both regular education and special education students. Evaluation results have promoted verbal fluency, positive behaviors (Riggs, Greenberg, Kusché, & Pentz, 2006), and had higher emotion knowledge skills and more socially competent (Domitrovich, Cortes, & Greenberg, 2007). PATHS is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Model Program.

## What Might Work

*Fast Track* is a comprehensive, long-term prevention school-based program that aims to prevent chronic and severe conduct problems in high-risk children from 1st through 10th grades. According to the National Institutes of Justice, Fast Track is based on the view that antisocial behavior stems from the interaction of multiple influences such as school, home, and the individual. The main goals of the program are to increase communication and bonds between and among these three domains; to enhance children's social, cognitive, and problem-solving skills; to improve peer relationships; and ultimately to decrease disruptive behavior at home and in school. Fast Track has demonstrated effectiveness in reducing aggression and conduct problems as well as associations with deviant peers for students of diverse demographic backgrounds, including sex, ethnicity, social class, and family composition (Conduct Problems Prevention Research Group, 2002; U.S. Department of Health and Human Services, 2001).

Linking the Interests of Families and Teachers (LIFT)/*Good Behavior Game* is an elementary school-based prevention program that targets antecedents of youth delinquency and violence. LIFT combines school-based skills training with parent training for 1st and 5th graders using 21-h sessions over 10 weeks. LIFT utilizes a playground peer component to encourage positive social behavior and a 6-week group parent-training component. A classroom-based component of LIFT is the Good Behavior Game. The

**Table 24.1**   Evidence based practice web sites

| Title | Authors and institutions | URL |
|---|---|---|
| Blueprints for Violence Prevention | Center for the Study and Prevention of Violence | University of Colorado | http://www.colorado.edu/cspv/blueprints |
| Exemplary and Promising Save, Disciplined, and Drug-Free Schools Programs | Safe, Disciplined, and Drug-Free Schools Expert Panel | U.S. Department of Education, 2001 | http://www2.ed.gov/admins/lead/safety/exemplary01/exemplary01.pdf |
| Preventing Crime, What Works, What Doesn't, What's Promising | A Report to the United States Congress Prepared for the National Institute of Justice | Department of Criminology and Criminal Justice, University of Maryland | https://www.ncjrs.gov/works/ |
| SAMHSA Model Programs | Substance Abuse and Mental Health Services Administration | Department of Health and Human Services | http://modelprograms.samhsa.gov/about-us/index.aspx |
| Model Programs & NCJRS Library | Crime Solutions | Office of Justice Programs | http://www.crimesolutions.gov/TopicDetails.aspx?ID=62 |
| Youth Violence: A Report of the Surgeon General | Centers for Disease Control and Prevention, National Center for Injury Prevention | U.S. Department of Health and Human Services | http://www.surgeongeneral.gov/news/2001/01/youth-violence.html |
| OJJDP Program Models | Office of Juvenile Justice and Delinquency Prevention | U.S. Department of Justice, Office of Justice Programs | http://www.ojjdp.gov |
| Girls in the Juvenile Justice System (2000) cited in Montgomery (2000) | Imogene Montgomery | National Center for Juvenile Justice Publications | http://www.ncjj.org |
| MH Courts for Youth Show Promise but Need Study | Aaron Levin | Psychiatric News, Gains Center for Behavioral Health and Justice Transformation, Substance Abuse and Mental Health Services Administration | http://gainscenter.samhsa.gov |
| Academic Centers for Excellence on Youth and Violence Prevention | Centers for Disease Control and Prevention | U.S. Department of Health and Human Services | http://www.cdc.gov/violenceprevention/ace/index.html |

*Important themes*: Evidence-based practice; treatment of chronic serious and violent offenders in the community (reduction in state facilities); the role of biology/genetics and crime; greater focus on targeted service needs and addressing risk and resiliency factors; gender differences in criminal acts; judicial/probation
This table was created/adapted by authors Baughman Sladky, Hussey, Flannery, and Jefferis (2014)

Good Behavior Game uses classroom behavior management as a primary strategy to improve on-task behavior and decrease aggressive behavior. LIFT was found to have a significant effect on reducing the rate of growth in tobacco and illicit drug use among students in grade 5–12. LIFT also reduced playground aggression and increased family problem solving. LIFT youths also had a 10 % reduced risk in initiating alcohol use by 12th grade (DeGarmo, Eddy, Reid, & Fetrow, 2009).

Raising Healthy Children (RHC) formally known as Seattle Social Development Project (SSDP) is a universal, multidimensional intervention that targets both general and high-risk youth in elementary and middle school. The program utilizes teacher and parent training, emphasizing classroom management for teachers, and conflict management, problem-solving, and refusal skills for children. Parents receive optional training programs targeting rules, communication, and strategies to support their child's academic success. Follow-up at age 18 shows that the program significantly improves long-term attachment and commitment to school and school achievement and reduces rates of self-reported violent acts and heavy alcohol use. At age 21, students who received the full intervention were also less likely to be involved in crime, to have sold illegal drugs in the past year, or to receive a court charge in their lifetime (Hawkins, Kosterman, Catalano, Hill, & Abbott, 2005). RHC is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Model Program.

*Second Step: A Violence Prevention Curriculum* is a classroom-based curriculum for preschool through junior high school students (i.e., ages 4–14) that attempts to reduce impulsive, high-risk, and aggressive behaviors while increasing socioemotional competence and protective factors. The curriculum teaches three core competencies: empathy, impulse control and problem-solving, and anger management. Students participate in 20–50-min sessions 2–3 times per week where they practice social skills. Elementary school parents can participate in a 6-session training that familiarizes them with the

content in the children's curriculum. Teachers also learn how to deal with disruptions and behavior management issues. Several self-reported behavioral improvements were found and a sense of school membership was reported by Second Step youth (McMahon & Washburn, 2003). Children in the Second Step program also showed a greater drop in antisocial behavior compared to those who did not receive the program. Second Step children also behaved less aggressively and were more likely to prefer prosocial goals (Frey, Nolen, Edstrom, & Hirschstein, 2005).

Cognitive-Behavioral Intervention for Trauma in Schools (CBITS) is used in schools for children aged 10–15 who have had substantial exposure to violence or other traumatic events and who have symptoms of posttraumatic stress disorder (PTSD) in the clinical range. The CBITS program has three main goals: (1) to reduce symptoms related to trauma, (2) to build resilience, and (3) to increase peer and parent support. The program was developed to reduce symptoms of distress and build skills to improve children's abilities to handle stress and trauma in the future. The intervention incorporates cognitive-behavioral therapy skills in a small group format to address symptoms of PTSD, anxiety, and depression related to exposure to violence. Symptom reduction is accomplished through cognitive techniques and trauma-focused work in imagination, writing, and narratives. Each session, a new set of skills is taught to the child, using didactic presentation, age-appropriate examples, and games. The child then uses the skills to address his or her problems through homework assignments collaboratively developed by the child and clinician. CBITS was found to be more accessible to families who may not have been able or willing to participate outside of schools. CBITS was also found to significantly improve depressive symptoms in students with PTSD (Jaycox et al., 2010). CBITS is also an Anne E. Casey Foundation supported Blue Print for Healthy Youth Development Promising Program.

The *Strengthening Families Program for Parents and Youth formally called the Iowa Strengthening Families Program.* The

Strengthening Families Program is a universal family-based intervention designed to reduce substance abuse and behavior problems through improved skills in nurturing and child management by parents and improved interpersonal and personal competencies among youths. The program consists of 7 two-hour sessions and combined family activities. Four booster sessions are added 6 months and 1 year after the initial series to reinforce previously learned skills. A 5-year longitudinal evaluation found that experimental group youth had statistically significant reductions in conduct problems and substance abuse (Molgaard, Spoth, & Redmond, 2000). An adaptation of the Strengthening Families Program aims to reduce substance use and behavior problems during adolescence through improved skills in nurturing and child management by parents and improved interpersonal and personal competencies among youths.

## What Does Not Work

The Drug Abuse Resistance Education (DARE) program is a well-known example of a widely used school-based drug use prevention effort that has met with a lack of success (General Accounting Office, 2003). Although it has continuously expanded in scope, the original DARE program involved uniformed police officers teach a core curriculum of 17 h-long drug resistance lessons to fifth- and sixth-grade students (National Institute of Justice, 1994). The spread of DARE programs has been rapid: DARE programs were reportedly operating in 80 % of US School districts by 2002 (General Accounting Office, 2003).

Despite its enormous popularity, the DARE program has had little demonstrable effect on the long- or short-term drug use of participants. A meta-analysis of DARE programs reported by the National Institute of Justice found that the programs were best at increasing students' knowledge about drug use and improving their social skills, while short-term effects on actual substance use by students were not significant (National Institute of Justice, 1994). A report to Congress by the General Accounting Office

(2003) examined six methodologically rigorous evaluations of the long-term effectiveness of DARE. The General Accounting Office (2003) reported that none of the studies found statistically significant differences between intervention and comparison groups in their levels of illicit drug use. Recognizing that the growing body of research has found little support for DARE, and despite its continued popularity, the DARE program made changes to its curriculum in order to improve its efficacy. These adjustments led to the newly school-based programs to be developed and studied. One such large-scale school-based prevention program, Take Charge of Your Life (TCYL) was implemented in schools across the United States and almost 20,000 students were enrolled (Sloboda et al., 2009). This study found that TCYL had a negative effect on youth (treatment group) use of alcohol and tobacco (risk seeking behaviors).

## Recommended Best Practice

Research has found that at least two important themes need to be taken into account when developing or implementing treatment programs for delinquent, violent youth. The first theme is that early, immediate intervention should be prioritized since behavioral problems, aggression, and other risk factors can be identified at an early age. The second theme is the need for well-coordinated, multicomponent, integrated, evidence-based prevention and intervention models that impact key risk and resiliency factors across multiple life domains (i.e., individual, family, peer, situational, and community). In general, comprehensive and multifaceted interventions are more effective than to single-component interventions because they are able to address a range of delinquent behaviors by integrating a variety of treatment approaches that target the adolescents' needs. An additional benefit to such programming is that these types of interventions often address interrelated problem clusters, for example, drug abuse and delinquency, and therefore have additional positive benefits promoting healthy youth development and functioning.

Programming should adhere to implementation fidelity, provide appropriate treatment intensity and duration, and new advances in the neurosciences will allow further examinations into adolescent delinquency and violent behavior. Researchers, policy makers, community leaders, educators, and families will need to continue to explore the many facets of juvenile delinquency and violent behavior to be able identify what interventions for the home, school, and residential setting are effective for the youth in need.

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# Gang Behavior

## Mark B. Borg Jr.

Youth gangs constitute the largest component of criminally active adolescent peer groups in the United States (Howell, 2003a, 2012). More generally, street gangs remain opaque largely because they are shrouded in myths (many of which they create themselves), folklore, urban legends, media exaggeration, popular misconceptions, and international intrigue. Applying primary prevention and health promotion models to this topic is a complex matter, especially in light of the guiding definition of primary prevention and health promotion used in this volume, which is "those planned actions that help participants prevent predictable problems, protect existing states of health and healthy functioning, and promote desired goals for a specified population" (Gullotta & Bloom, 2003, p. 9). Research is also hindered by the general lack of agreement among researchers on a common definition of an adolescent gang, the validity of current gang theories, associated risk and resiliency factors, and effective strategies for dealing with adolescent gang behavior (Egley & Howell, 2011; National Gang Center, 2010a).

That said, one thing is clear, communities must organize themselves better than the gangs and present a more formidable front if any progress is going to be made in the realm of *treating*

(i.e., preventing and suppressing) gang activity (Howell, 2012; National Gang Center, 2010b). The latest findings show that no single technique effectively prevents, ameliorates, or suppresses gang activity (Agnew, 2005; Curry & Decker, 2003; Howell, 2003a, 2012; Knox, 1995; Welsh, Sullivan, & Olds, 2010). Instead, a range of specifically targeted programs and services have been shown to be much more effective in light of established patterns of delinquency, crime, and gang affiliation (Lipsey, Wilson, & Cothern, 2000). Nevertheless, the majority of strategies (especially within the juvenile criminal justice system) have emphasized suppression techniques that tend to reinforce individual gang member commitment and to strengthen gang affiliation and identity (Deuchar, 2009; Skogan, Harnett, Bump, & Dubois, 2008).

Historical evidence showing the ineffectiveness of suppression techniques can be traced to Thrasher's (1927) early research into gangs, in which he proposed that gangs themselves serve as a suppression technique against actual and perceived threats—physical, racial, ethnic, or socioeconomic—in hostile environments. Cohen and Vila (1996) observed that "if it were not for gang rivalries, hostile police and [suppressing] neighbors, there would be little to hold these groups together save for the thrill-seeking derived from delinquent behavior" (p. 133).

Before describing a comprehensive and integrated "treatment approach" to gangs, I present

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an overview of (a) the demographics and primary organizational issues of adolescent gangs, and (b) the characteristics, behaviors, and family and their community backgrounds of adolescent gang members. Based on the assertion that gangs—as "street organizations"—rarely respond favorably to the current array of prevention, intervention, and suppression "treatments" (Branch, 1997; Cohen, Piquero, & Jennings, 2010; Curry & Decker, 2003; Short & Hughes, 2010), I instead focus on treatment approaches that focus on the individual, familial, and community characteristics and behaviors that previous researchers have identified.

## Overview

Spergel and Curry (1995) have identified five general strategies that American agencies have historically used to address the gang problem: (a) community organizing (including mobilization and empowerment), (b) social intervention (e.g., outreach, counseling, crisis intervention), (c) service provision (e.g., job training, tutoring), (d) suppression (enforcement, arrest, and incarceration), and (e) organizational change and development (response programs, case management, advocacy).

Howell (2003a) believes that these five strategies can be boiled down to three: prevention, intervention, and suppression. According to his analysis,

> Prevention efforts reduce the number of youths who join gangs at the same time that intervention in gang careers with treatment/rehabilitation removes youths from gangs, while suppression strategies (especially graduated sanctions)—within this combination—can weaken gangs and help thwart their recruitment efforts, serving to help diminish the presence and influence of gangs in the community (pp. 88–89).

Howell (2003a) suggests that *windows of opportunity* for gang prevention, intervention, and suppression exist throughout childhood until the ages of 14/15—peak ages for gang involvement (Esbensen & Winfree, 1998; Huff, 1998). According to Lahey, Gordon, Loeber, Stouthamer-Loeber, and Farrington (1999), the

intervention opportunity window overlaps with the prevention window that extends into later ages. Intervention efforts include programs and policies aimed at reducing conduct problems, failure in school, delinquency (juvenile and violent), and gang membership. Early interventions target children and young adolescents showing initial involvement in a number of problem behaviors (Arciaga, Sakamoto, & Jones, 2010; Hill, Howell, Hawkins, & Battin-Pearson, 1999), while treatment or rehabilitation interventions (combined with graduated sanctions) are used with adolescents who are more advanced in terms of gang involvement and violent delinquency (Loeber & Farrington, 1999).

## Theoretical Perspectives

### Racism-Oppression Theories

Racism and societal oppression have long been considered key reasons for the establishment of gangs (Melde & Esbensen, 2011; Vigil, 1988, 2002). It is generally assumed that when social forces and institutions fail to function effectively, street subcultures—gangs—are formed to fill the void (Pyrooz, Fox, & Decker, 2010). According to racism-oppression theorists, the list of important causal determinants and reinforcing agents of gang activity in America includes the following: (a) patterns of ethnic conflict and competition; (b) our country's social structure and institutionalized patterns of race relations; (c) acts of accommodation to an affluent society by the poor and minorities; and (d) individual experiences, patterns of enduring racial conflict, and perceptions of racism and oppression (Esbensen, Brick, Melde, Tusinski, & Taylor, 2008).

Vigil (1988) originated the concept of *multiple marginalities* to describe persons having more than one minority group status—for instance, a disabled African-American female who lives in a ghetto—who regularly face complex mixes of prejudicial and discriminatory experiences. Multiple marginality involves clusters of interrelated socioeconomic, cultural, psychological, and ecological factors that may include inadequate

living conditions, stressful personal and family changes, and a combination of racism and cultural repression in schools and communities (Krohn, Schmidt, Lizotte, & Baldwin, 2011). Along this line, Majors and Billson (1992) have posited that

> Joining a gang is a way to organize and make sense of the marginal world of the inner city neighborhood … For black males [and members of other ethnic minorities] who have been locked out of the social and economic mainstream, running with a gang can be a form of social achievement (p. 50).

These theories imply that gangs will exist as long as ethnic or racial oppression exists. For whites, gang membership is less a matter of racial or ethnic subjugation than competition with minorities in a context of mutually disagreeable economic conditions. In his broad overview of gang theories, Knox (1995) asserted that racism-oppression theory "is remarkably predictive in determining the onset and persistence of American gangs in correctional, educational, and community setting" (p. 91). According to this theoretical approach, gangs—and other social problems—will remain a symptom of a society that ignores social justice issues and the needs of certain populations in favor of large-scale oppression and discrimination against marginalized citizens (Fromm, 1955; Rappaport & Seidman, 1986; Sloan, 1996; Vigil, 2002).

## Developmental Theories

The majority of contemporary researchers appear to favor development theories for understanding the individual, family, and community factors that contribute to the gang problem in America (Aldridge, Shute, Ralphs, & Medina, 2009; Dupere, Lacourse, Wilms, Vitaro, & Tremblay, 2007; Howell, 2003a; Loeber & Farrington, 1999; Thornberry, Krohn, Lizotte, Smith, & Tobin, 2003). Current developmental theories have emerged from a sociological framework of examining human experience known as the *life-course perspective* (Baltes, 1987; Elder, 1985), which views human development across an entire life-span, and focuses on individual progress according to age-graded and culturally defined roles and social transitions. In the United States, young persons are expected to complete their education, begin their careers, and then get married and start families—patterns of social development and social institutions that are described as *trajectories* and *pathways*. The word *transition* is used to describe short-term changes in social roles within long-term trajectories—for example, divorce, dropping out of school, or desistance from gang affiliation.

Elder (1985) has described life courses as being structured by webs of generally consistent, interlocking trajectories that are occasionally interrupted by transition life events that can include everything from marriage to being arrested. "Off-age" (i.e., not age appropriate) transitions can produce disorder (Thornberry et al., 2003); individual adaptations to these changes are considered important because they lead to different trajectories (Sampson & Laub, 1993). From a life-course perspective, childhood, adolescence, and adult experiences are viewed as parts of a continuous process of change that are dependent on the consequences of earlier behavioral patterns and the influences of risk factors in family, school, and community domains.

In the 1980s, criminologists began using the life-course perspective to formulate developmental theories of juvenile delinquency (Thornberry et al., 2003). Developmental theories are gaining greater acceptance due to the usefulness of viewing offending "careers" over time. They can be used to study causal or risk factors that in turn are used to explain the onset, escalation, de-escalation, and desistance components of individual gang members' careers (Farrington, 2000). Developmental theories assume that "delinquent careers are not predetermined but are malleable, changing as the person's life unfolds" (Thornberry et al., 2003, p. 2). Howell (2003a) adds that the developmental process that produces a gang member "is affected by numerous factors in childhood and adolescence" (p. 49). We therefore assume that transitions (including change points or milestones) provide opportunities for

alternative and healthier pathways that families and communities can use to steer at-risk adolescents away from lives of crime and gang membership.

## Organizational Theories

Organizational theories are associated with the study of formal and complex organizations and bureaucracies (Thornberry et al., 2003). While many social scientists view gangs as social networks that embed their members in deviant routines and isolate them from prosocial arenas, the application of organizational theory is difficult because "Gangs are more than small groups and less than bureaucracies" (Knox, 1995, p. 233). Yet, if we accept Krohn's (1986) suggestion that all social networks constrain the behaviors of their members to be consistent with the group's dominant behavioral themes, it seems worthwhile to apply organizational theory to adolescent gangs. There are other methodological issues that make researching gangs as organizations particularly tricky—for instance, the use of crime statistics as "organizational data" removes most gang organizational functions from the purview of researchers. In other words, organizational theory suggests that we shift our analysis away from the individual and toward the group, yet access to gangs for purposes of data collection remains extremely limited if not impossible (Krohn & Thornberry, 2008).

Still, there are at least two good arguments in support of applying organizational theories to adolescent gangs: first, they are considered well-formulated groups with both internal and external regulatory mechanisms, and second, there is considerable evidence showing that they are more than just loosely constructed collections of marginalized individuals—for example, many gangs are multigenerational and show signs of community stability, despite qualitative differences in cross-generational membership (Branch, 1997). But despite the paucity of organizational gang theory research, analyses of gangs in terms of organizational characteristics have been effectively used for classifying their risk dimensions and for understanding the many ways that gangs,

as organizations, strive for and develop greater sophistication. At the same time, much of the information that is overlooked in traditional and contemporary gang theories seems very pertinent to assessing the gang problem in America. I agree with Branch's (1997) assertion that "misconceptions about gangs and their [organizational] dynamics have been responsible for the failure to develop effective assessment and intervention strategies" (p. 4).

## Gangs as Facilitating Environments for Delinquent Behavior

The perspective of gangs as facilitating environments for delinquent behavior is based on organizational theory. According to this view, "because gangs clearly connote groups that have a deviant or criminal orientation, a strong relationship between gang membership and high rates of involvement in delinquency and drug use is hardly surprising" (Thornberry et al., 2003, p. 96). Gangs manifest their facilitation component through their normative structures and group processes, resulting in high rates of delinquency, drug use, and other kinds of deviant and criminal behaviors (Deschenes & Esbensen, 1999; Hagedorn, 1988). Researchers who use this theoretical perspective have suggested that group norms and group processes that revolve around such dimensions as status, solidarity, cohesion, and exposure to risky and violent situations are likely to increase delinquent acts among gang members (Egley & Howell, 2011; Klein & Maxson, 2006; Miller & Brunson, 2000; Rosenfeld, Bray, & Egley, 1999).

## Clinical Theories

Clinical theories—defined by Branch (1997) as theories that are normally applied in clinical and family interventions—have been uniformly overlooked in association with adolescent gangs, perhaps because of the historical failures of the prevention, intervention, and suppression techniques that have been applied to gangs as organizations. Furthermore, this perspective challenges psychological theories regarding the characteristics

of individual gang members—i.e., that they are hyperactive, conduct disordered, cognitively impaired, impulsive, and sociopathic. There is considerable evidence suggesting that gang members have none of these traits, at least not wholly, since "street organizations" (as some gang members like to call them) have certain cognitive, behavioral, organizational, and leadership guidelines that discourage such behavior (see Howell, 2012). These guidelines suggest that gang members must be able to interact with others in ways that are rewarding to the entire organization; at times, members must set aside their individual needs in order to achieve group goals. Other membership requirements include the capacity to function within a set of limits (either loosely or well articulated), fidelity, understanding gang membership nuances, and delaying gratification—all evidence supporting the idea that extremely individualistic, sociopathic, impulsive, and narcissistic individuals may not function well as gang members (Branch, 1997). These qualities contradict more traditional gang theory and demand more detailed analysis regarding the application of organizational theory to prevention, intervention, and suppression strategies.

## Definitional Issues

There are no universally accepted definitions of youth gang, gang membership, or gang behavior. Thrasher (1927), considered the first gang researcher, noted that "no two gangs are just alike; [they take on] an endless variety of forms" (p. 5). I will suggest that all contemporary gang researchers still agree with Thrasher's observation, yet state and local jurisdictions continue to develop their own "universal" definitions of what constitutes a gang. For my purpose, I use two definitions that we consistently encountered throughout the literature. The first was established by Thrasher (1927), who characterized gangs in behavioral terms: face-to-face meetings, "milling," movement through space as a unit, and conflict and planning. Such collective behavior results in the development of tradition, an unreflective internal

structure, an *esprit de corps*, solidarity, moral, group awareness, and territorial attachment.

Thrasher's definition has been disputed, modified, and completely reworked over more than seven decades. I offer Jankowski's (1991) definition as being sufficiently comprehensive in terms of the major issues that are addressed in this chapter:

> A gang is an organized social system that is both quasi-private and quasi-secretive and whose size and goals have necessitated that social interaction be governed by a leadership structure that has defined roles; where the authority associated with these roles has been legitimized to the extent that social codes are operational to regulate the behavior of both leadership and the rank and file; that plans and provides not only for the social and economic services of its members, but also for its maintenance as an organization; that pursues such goals irrespective of whether such action is legal or not; and that lacks a bureaucracy (pp. 28–29).

Collectively, these organizational definitions present a broad overview of what constitutes a gang, yet defining adolescent gangs remains a slippery task for at least three reasons: (a) individual gangs tend to evolve and adapt over time to meet the demands of environments that often become increasingly hostile to their presence (Hagedorn, 1994; Horowitz, 1990; Taylor, 1990); (b) there has recently been a proliferation of "hybrid" gangs—that is, gangs whose membership is ethnically and racially diverse, and that include both male and female members (Miller & Brunson, 2000; Starbuck, Howell, & Lindquist, 2001); and (c) ways in which youth gangs have been portrayed in the popular media (e.g., the films *Colors* and *Boyz in the Hood*), which are based on stereotypes rather than scientific knowledge (Miethe & McCorkle, 1997).

The second definition that consistently shows up in the literature was developed by the US Department of Justice's Office of Juvenile Justice and Delinquency Prevention (OJJDP); this definition has gained general acceptance within the criminal justice system. As restated by Howell (1997), a youth gang is a "self-formed association of peers having the following characteristics: a gang name and recognizable symbols, identifiable

leadership, a geographic territory, a regular meeting pattern, and collective actions to carry out illegal activities" (p. 1).

## Incidence Rates

At the time this chapter was being written, the 2009 *National Youth Gang Survey*[1] (NYGS) conducted by the OJJDP (National Gang Center, 2010a) was considered the most current and valid source of information on gang incidence rates (Howell, 2012). Since 1996, the National Gang Center, through the NYGS, has collected data annually from a large, representative sample of local law enforcement agencies to track the size and scope of the national gang problem (Egley, 2002; Egley & Arjunan, 2002; Egley & Major, 2003; Howell, 1997; Thornberry et al., 2003).

The prevalence rate of gang activity increased slightly from 2008 (32.4 %) to 2009 (34.5 %) (Howell, 2012). Over the entire survey period, three trends are apparent in the prevalence rate of gang activity: a sharp decline throughout the late 1990s, a sudden upturn beginning in 2001 and continuing until 2005, and a relative leveling off thereafter. Larger cities exhibited a large and stable prevalence rate of gang activity from 2005 to 2009, while the less populated areas reported a smaller rate with a more fluctuating pattern.

Based on law enforcement reports, it is estimated that in 2009, there were 28,100 gangs and 731,000 gang members throughout 3,500 jurisdictions in the United States. The number of jurisdictions with gang problems and the number of gangs increased more than 20 % from 2002 to 2009, with both indicators recording a 5 % increase in more recent years. The number of gang members, which has averaged more than 750,000 across survey years, decreased slightly from 2008 to 2009 but remains unchanged from the 2002 total.

As in previous years, gang-related homicides remain highly concentrated in the most populated jurisdictions, with larger cities and suburban counties accounting for more than 96 % of all gang-related homicides recorded in the NYGS in 2009. Of the 167 cities with populations of more than 100,000 that provided gang homicide data, 57 (34 %) reported no gang-related homicides and the remaining (66 %) reported a total of 1,017 gang-related homicides in 2009. This total represents a 2 % increase from 2002 and an 11 % increase from 2008 for these same cities.

Respondents also estimated year-to-year changes regarding other gang-related crimes and violence in their jurisdictions. For the gang-related offenses of robbery, aggravated assault, drug sales, and firearms use, respondents most frequently reported that there was "no substantial change" (i.e., neither significant increase nor decrease) from 2008 to 2009 in the number of offenses committed. One notable exception to this pattern is graffiti—a little more than 40 % of the respondents reported an increase in gang graffiti in their jurisdictions, while fewer than 3 % reported no such incidents in 2009.

Half of the survey respondents (49.8 %) characterized their gang problems as "staying about the same" in 2009, the largest percentage ever recorded in the NYGS. Agencies reporting a fluctuating pattern of gang activity over the past 5 years were more likely to characterize their gang problems as "getting worse" than were agencies consistently reporting gang activity. Half or more of the survey respondents viewed drug-related factors, intergang conflict, and returning inmates as significantly influencing local gang violence (Decker, 2007; McGloin, 2005), followed by gang member migration within the United States and emergence of new gangs (Krohn & Thornberry, 2008).

In virtually every survey year, law enforcement agencies report a greater percentage of adult (18 and over) gang members compared with juvenile (under 18) gang members. The most recent figures provided by law enforcement are that approximately three out of every five gang members are adults. Larger cities and suburban counties, which typically have long-standing gang problems, are more likely to report slightly more adult gang members than are juvenile gang members.

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[1] For a description of the NYGS study population and sample methodology, see www.nationalgangcenter.gov/Survey-Analysis/Methodology.

Conversely, smaller cities and rural counties, whose gang problems are relatively more recent, are more likely to report juvenile gang members.

Law enforcement agencies overwhelmingly report a greater percentage of male gang members versus female gang members—a typical finding from law enforcement data but one that is challenged by other research methodologies. Despite a growing concern of females joining gangs, little to no change in the percentage is observed across survey years. A large percentage of agencies (nearly one-quarter) could not provide information regarding the prevalence of female membership within gangs, suggesting this issue is of secondary or lesser significance for law enforcement. Of those agencies that could provide information, proportionally few (less than 15 %) reported that none of the gangs in their jurisdictions have female members. Nearly half of the gangs outside of the larger cities are reported to have female gang members, compared with approximately one in four in the larger cities. Of course, these results must be interpreted cautiously because of the sizeable amount of missing data.

Law enforcement agencies report a greater percentage of Hispanic/Latino and African-American/black gang members compared with other race/ethnicities. The most recent figures provided by law enforcement are 50 % Hispanic/Latino gang members, 32 % African-American/black gang members, 10 % white gang members, and 8 % other race/ethnicity gang members. Across all area types, the majority of law enforcement agencies report that African-American/black and/or Hispanic/Latino individuals predominate among documented gang members. Prevalence rates of white gang membership are lowest in larger cities (9 %) but significantly higher in other area types, including rural counties (19 %), where the rate is more than twice as high.

## Risk and Resiliency Factors

The available evidence shows that resiliency factors are clearly outweighed by gang-related risk factors, not only in terms of the actual factors

influencing risk and resilience but also regarding the research efforts in both areas. In Howell's (2003a) words, "Research on protective factors has been slower to develop than risk factor studies, in part because of the absence of a standard for determining what constitutes [resilience]" (p. 90). Furthermore, individual, family, and community factors are highly intertwined and difficult to disentangle in the context of risk and resiliency research (Benard, 2004).

Several characteristics have been shown to predict gang membership and behavior. Tremblay and LeMarquand (2001) found that boys with chronic histories of physical aggression commonly exhibit cognitive-behavioral problems (i.e., inappropriate automatic reactions to situations). Such problems often lead to school failure, which is a strong predictor of gang membership (Hill et al., 1999; Howell, 2012). Individual characteristics that are thought to have links with cognitive-behavioral problems include learning disabilities, hyperactivity, conduct problems, and lack of self-control (e.g., impulsivity, risk-seeking tendencies, and physical problem-solving tendencies); many of these same characteristics have been identified as key risk factors for gang membership (Esbensen, Huizinga, & Weiher, 1993). The list of characteristics that predict gang membership also includes illegal gun ownership (Bjerregaard & Lizotte, 1995; Lizotte, Tesoriero, Thornberry, & Krohn, 1994) and early involvement in delinquency, alcohol/drug use, early dating and precocious sexual activity, and mental health problems (Loeber, Burke, & Pardini, 2009; Thornberry et al., 2003). Thornberry et al. (2003) also found that youngsters (particularly boys) who experience numerous negative/stressful life events—failing a course at school, being suspended from school, breaking up with a boyfriend/girlfriend, having a major fight or problem with a friend, etc.—are also more likely to join gangs.

In short, children and adolescents with conduct disorders or who show worsening antisocial behavior as early as the first grade are at high risk of joining gangs (Esbensen et al., 1993). These children are often identified as learning disabled and show evidence of developing deviant lifestyles

at an early age (Hill et al., 1999). The most dedicated gang members exhibit low self-control and tendencies toward risk-seeking behavior (Knox, 1995). Regardless of gender, future gang members are more likely to have conduct problems at a very young age, to develop delinquent beliefs, to cultivate delinquent friends, to begin dating early, and to become involved in drug use in late childhood and early adolescence (Thornberry et al., 2003). However, Howell (2003a) has also found evidence that a significant number of the youngest gang members "are good kids, from good families … are good students … [and] do not remain in gangs for long" (p. 90).

Some minor discrepancies in gang-related risk factors have been noted in terms of gender and race/ethnicity. However, at least one researcher has analyzed available data and concluded that risk factors for gang membership are very similar between adolescent girls and boys (Deschenes & Esbensen, 1999; Thornberry et al., 2003). In addition, Howell (2003b) has recently reported that for both genders, a strong association exists between having deficits in multiple developmental domains and the likelihood of joining a gang.

Evidence that risk and resiliency factors operate differently for members of different ethnic and racial groups has been presented by Spergel and Curry (1995) and Walker-Barnes and Mason (2001), among others. In terms of "multiple marginalities," ethnic minority and impoverished adolescents appear to be particularly at risk for gang membership. Although it remains clear that socioeconomic status and the effects of discrimination are the most powerful factors affecting risk and resilience (Vigil, 2002), there is much less clarity regarding the association between socioeconomic status and discrimination on the one hand and race/ethnicity/gender on the other. Thus, it has been suggested that criminal statistics regarding race and ethnicity should not be used to confirm differences in rates of gang participation but to confirm differences in arrest rates for gang-related offenses. There is considerable evidence showing that adolescents of color, irrespective of gang membership, are more likely to be detained and arrested than their Caucasian counterparts (Howell, 2003b; Vigil, 2002). It has also been noted that in early developmental phases, ethnic identity is a factor in individual associations with collectives (including youth gangs) for the purpose of resolving one's sense of personal identity. Individuals who feel socially marginalized often try a variety of approaches to resolving such crises—for example, affiliating themselves with others they perceive as being most like themselves. On the other hand, such affiliations may be related to a specific developmental phase, and may later lead to full participation in healthy expressions of ethnic identity—a powerful factor in resisting the appeal of gangs (Branch, 1997).

Some resiliency factors may simply be the opposite of risk factors—for instance, low parental support is considered a risk factor while high parental supervision is recognized as a resiliency/protective factor. Some evidence has been offered showing that resilience factors can interact with risk factors to reduce the likelihood of a child or adolescent joining a gang (Henderson, Benard, & Sharp-Light, 1999). Researchers continue to work toward establishing which resiliency factors are most likely to buffer risk factors (Bjerregaard & Smith, 1993; Howell, 2003b, 2012; Maxson, Whitlock, & Klein, 1998; Thornberry et al., 2003).

In the individual domain, support for personal skills, social skills, and self-efficacy is strongly correlated with resilience in young people who are at risk for gang involvement (Durlak, 1998; Howell, 2003a). Also, some of the membership characteristics that have been described as requirements for gang functioning—impulse control, fidelity, and delayed gratification—are also considered resiliency factors (Branch, 1997). Seeing that risk and resiliency factors are intertwined among individual, family, and social domains, developmental theories may be helpful in assessing the trajectories of individual life paths, especially for identifying key transition points for intervention. Assessing the impact of such transitions as entering high school or dating can be used to predict risk and emphasize resiliency by increasing support from such institutions as the family, school, or community agencies.

## Family Factors Influencing Risk and Resiliency

Key family risk factors for gang membership include structure (e.g., broken homes) and poverty (Briggs, Popkins, & Goerin, 2010; Howell, 2003b). Poor family management—including low parental supervision, lack of control or child monitoring (Le Blanc & Lanctot, 1998), and abuse/neglect (Thornberry et al., 2003)—is also a strong predictor. Interestingly, a high level of psychological control in the form of manipulative and guilt-based actions on the part of parents is also considered a risk factor for gang membership (Walker-Barnes & Mason, 2001). While it may seem obvious that the involvement of other family members (especially siblings and cousins) in gang activity would be a strong predictor, there is very little in the way of research evidence supporting this assumption (Egley, 2002). What research has been conducted to date shows that this factor is particularly strong in Latino communities in East Los Angeles and the American Southwest, and to a lesser extent in African-American communities in South Central Los Angeles (Vigil, 1983, 1988). There is also strong evidence that immigrants from countries that have recently suffered from the effects of war (examples include Vietnam and Nicaragua) are particularly vulnerable to gang affiliation (Vigil, 2002).

The primary resiliency factor associated with family context is good parent–child relationships, including the positive involvement of parents, consistent interaction between parents and children, and family bonding (Durlak, 1998; Farrington, 1993). Benard (2004) has identified the most important family resilience factors as caring relationships, parents sending high expectation messages to their children, and parents giving their children meaningful opportunities to contribute to a family's well-being. Additional factors that have been identified as enhancing resiliency in a family context include income, cohesion, shared interests and activities, communication, flexibility, safe and adequate housing, and conflict resolution skills (Henderson et al., 1999).

## Social and Community Factors Influencing Risk and Resiliency

Most contemporary gang theorists list the three most important contexts affected by social and community risk and resiliency factors as school, peers, and community (Howell, 2003a; Thornberry et al., 2003; Vigil, 2002). All three are contexts in which gang members show high levels of alienation (Esbensen, Osgood, Taylor, Peterson, & Freng, 2001; Howell, 2003b; Huizinga & Lovegrove, 2009).

At least two sets of researchers believe that the strongest school-related risk factor for gang membership is low achievement in elementary school (Le Blanc & Lanctot, 1998), which indicates low academic aspirations and a low degree of commitment to education (Le Blanc & Lanctot, 1998). Two other factors that have been identified as contributing to gang affiliation are the negative labeling of youngsters by teachers (Esbensen, 2000) and feeling unsafe at school (Gottfredson & Gottfredson, 2001). Furthermore, Howell and Lynch (2000) found that increased security measures at schools do not necessarily reduce gang presence.

Regarding peer risk factors, Thornberry et al. (2003) describe associations with peers who engage in delinquent acts as one of the strongest risk factors for gang membership, particularly for boys. Another strong risk factor is associations with aggressive peers—whether or not they are involved in delinquency (Lahey et al., 1999; Lyon, Henggeler, & Hall, 1992). The lack of adult supervision of child or adolescent interactions with friends is integrally related to the influence of delinquent friends on a youngster's decision to join a gang (Le Blanc & Lanctot, 1998).

Longitudinal studies have shown that the strongest community or neighborhood risk factors for gang membership are the availability of drugs, the presence of troubled neighborhood youth, a youngster's sense of feeling unsafe in a neighborhood, low neighborhood attachment, low level of neighborhood integration, local poverty, and neighborhood disorganization (Howell, 2003a, 2012). Researchers have long acknowledged that

gangs tend to cluster in high-crime and socially disorganized neighborhoods (Fagan, 1996; Short & Strodtbeck, 1965; Vigil, 1988). Vigil (2002) has suggested that during adolescence, many individual and family protective factors are strongly influenced by the level of disorganization in a neighborhood (Vigil, 2002); this includes the clustering of existing gangs in such communities.

Peer modeling, high-quality schools and teachers, clear and consistent social norms, and effective social policies in the community domain are all considered strong resiliency factors for potential gang members (Durlak, 1998; Howell, 2003a). Resiliency factors that can be supported by a community (especially when implemented within families and schools) are (a) strong social support, (b) setting clear and consistent boundaries, (c) filling free time with creative activities that emphasize prosocial values, (d) emphasizing commitment to a child's well-being and development, (e) stressing social competencies, and (f) supporting a child's sense of positive identity (including cultural identity) (Henderson et al., 1999). Furthermore, setting high but realistic expectations and opportunities for meaningful participation in schools and communities is strongly associated with resiliency (Benard, 2004).

In the same manner that increased family support during significant adolescent transitions can increase resiliency, there are many opportunities for social and community institutions to intervene and increase support at predictable points during an individual's life path. Such institutions as schools, churches, community organizations, and even the criminal justice system have the potential to provide support to adolescents as they make decisions that may or may not send them off on trajectories leading to gang affiliation.

However, despite the long list of social and community factors that influence risk and resiliency, the literature consistently states that adolescents who live in poor neighborhoods are demographically—if not psychologically—at greater risk of gang affiliation (Howell, 2003a; Thornberry et al., 2003). According to the evidence, it seems as though race and ethnicity are weaker determinants of risk margins or access to resiliency factors than such group association

factors as residing in poor neighborhoods, acting according to stereotypical behavioral scripts, and being targeted by law enforcement agencies.

## Evidence-Based Treatment Interventions for Adolescent Gang Members in Community Settings

There is considerable disagreement about the potential to achieve social improvements through community organizations (Howell, 2003a, 2012; Lipsey, 2009), especially in light of Short's (1990) reminder that "communities, too, have careers in delinquency" (p. 224). In a subsequent analysis of critical features of the youth gang problem, Short (1996) identified individual characteristics and group processes that must be taken into account when developing prevention and intervention programs. Short claimed that community factors contributing to gang delinquency and violence consist of macro- and micro-level influences, with the macro-level forces including the spread of gang culture, youth culture, and a growing underclass (Lipsey, Howell, Kelly, Chapman, & Carver, 2010). Quantifying these forces is a difficult task, but it is important that they serve as a backdrop in the development of community-based "treatment" efforts (Howell, 1999, 2003a). There is some evidence indicating that intensive community-based sanctions are more effective than restrictive and expensive confinement policies in reducing adolescent gang incidents and recidivism (Howell, 2003b). This is an important concept, considering that long-term confinement is the equivalent of "residential treatment" for many gang members.

### What Works

In their *National Assessment of Youth Gangs Survey*, Spergel and Curry (1995) suggested that community organization mobilization is the most effective strategy for dealing with adolescent gangs, but only when social opportunities are also provided. They recommended that communities create locally based youth agencies to

provide a continuum of services to gang and non-gang youth (Howell, 2003b; Thornberry et al., 2003). This idea became the cornerstone for Howell's (2003a, 2012) Comprehensive Gang Model (CGM)[2], which combines prevention, intervention, and suppression techniques with a strong emphasis on specific community contexts. The strategy encompasses all of the major treatment areas covered in this chapter, and is currently the primary method used by the juvenile criminal justice system.

The CGM incorporates five strategies:

1. *Community mobilization*: Involvement of local citizens, including former gang-involved youth, community groups, agencies, and coordination of programs and staff functions within and across agencies.
2. *Opportunity provisions*: Development of a variety of specific education, training, and employment programs targeting gang-involved youth.
3. *Social interventions*: Involving youth-serving agencies, schools, grassroots groups, faith-based organizations, police, and other juvenile/criminal organizations in "reaching out" to gang-involved youth and their families, and linking them with the conventional world and needed services.
4. *Suppression*: Formal and informal social control procedures, including close supervision and monitoring of gang-involved youth by agencies of the juvenile/criminal justice system and also by community-based agencies, schools, and grassroots groups.
5. *Organizational change and development*: Development and implementation of policies and procedures that result in the most effective use of available and potential resources, within and across agencies, to better address the gang problem (Spergel, 1995, pp. 171–296).

Communities that adopt the CGM will benefit from the simplified implementation process that the OJJDP (2009) has created. OJJDP synthesized the elements of the CGM into five steps:

1. The community and its leaders acknowledge the youth gang problem.
2. The community conducts an assessment of the nature and scope of the youth gang problem, leading to the identification of a target community or communities and population(s).
3. Through a steering committee, the community and its leaders set goals and objectives to address the identified problem(s).
4. The steering committee makes available relevant programs, strategies, services, tactics, and procedures consistent with the CGM's five core strategies.
5. The steering committee evaluates the effectiveness of the response to the gang problem, reassesses the problem, and modifies approaches, as needed (National Gang Center, 2010a, p. 3).

It is widely recognized that to be effective, community-based treatment must target the weaknesses and strengths of specific community structures beyond the gang problem—employment, schools, social services, health programs, and the like (Howell, 1999; Klein, Maxson, & Miller, 1995). Of the handful of effective programs for reducing gang involvement that have been identified in resiliency studies, one that stands out is the Health Realization/Community Empowerment program (Mills, 1993; Mills & Spittle, 2001)—a program that combines prevention, intervention, and building relationships between communities and agency resources, including law enforcement. This program has been shown to be effective in reducing crime, delinquency, and gang involvement in some of the United States' most disturbed neighborhoods, including South Central Los Angeles, Oakland, and the Bronx (Benard, 2004; Borg, 2002; Henderson et al., 1999).

## What Might Work

Gang interventions in community settings that serve to prevent, redirect, or reduce gang members and membership generally enlist the efforts

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[2]The Comprehensive Gang Model, presented by Howell (2012), is an extension of what he previously (Howell, 2003a) referred to as the Comprehensive Strategy Framework (CSF), as was detailed in the previous edition of this volume.

of local citizens, youth agencies, community organizations, and the criminal justice system. The emphasis has been on indigenous leadership to combat delinquency and to provide the community with a sense of involvement (Knox, 1995). There has been little evidence, however, to support the effectiveness of these programs (Howell, 1998; Thornberry et al., 2003). One such large-scale program—Mobilization for Youth started in New York City in the 1960s—was seen to provide short-term success but failed to achieve lasting reform (Klein et al., 1995). In brief, community interventions, which are historically difficult to evaluate, have not shown significant evidence in reducing the number of gangs or the level of delinquency—especially those that take on the gang problem directly (i.e., through criminal justice interventions).

However, there is evidence that community-based interventions that take a less direct approach might be effective in reducing adolescent gang membership (Goldstein & Huff, 1993; Howell, 1995). Such programs often focus on providing social opportunities and include a broad spectrum of educational and job-related opportunities. The most promising educational programs are those that use the school as the base for a multifaceted approach that addresses school performance, anti-gang education, and the building of self-esteem (Klein et al., 1995; Moore, 1991). Community interventions that are school-based programs have been shown to be effective in changing attitudes and increasing knowledge about gang issues, but their effect on behavioral change is unclear (Thornberry et al., 2003). Moreover, most of these programs are directed at marginal or peripheral youth rather than committed gang members (Howell, 2012).

Successful strategies combine prevention, intervention, and suppression efforts. When we consider programs that might work, we speculate on whether or not strategies applied to larger inner-city populations could be applied in suburban and rural settings, where incidence rates have been increasing over the past decade (Egley, 2002). Testing these strategies in these settings will become increasingly important if this pattern continues, but very few efforts have been made to date.

## What Doesn't Work

The prevailing opinion among researchers is that the "get tough on crime" approach (e.g., three strikes law, zero tolerance) has failed to reduce the gang (or any other crime) problem (Howell, 2003a; Klein et al., 1995). Suppression techniques without prevention and intervention do not work and very often backfire because they tend to increase the intensity of perceived threats to gangs, and cause them to become even more intractable. For this reason, it seems that suppression techniques—including the psychiatric hospitalization of gang-affiliated youth—have been generally counterproductive.

## Evidence-Based Treatment Interventions for Adolescent Gang Members in Residential Settings

Considerable contradictions mark the treatment of adolescent gang members in residential settings. The most common residential "treatment" has long been incarceration; however, up to 80 % of incarcerated adolescents have disorders that meet criteria for DSM-IV mental disorders (Cocozza & Skowyra, 2000; Fagan, Hanson, Hawkins, & Arthur, 2008) and up to 50 % of adolescents in psychiatric hospitals are admitted because of behavioral problems rather than mental disorders (Finkelhor, Turner, Ormrod, & Hambry, 2009; Howell, 2003a; Weithorn, 1988).

## What Works

In light of the failure of incarceration and other suppression techniques, residential treatment for adolescent gang members must incorporate prevention and intervention—the second and third components of Howell's (2003a, 2012) CGM. It seems most important to provide some form of aftercare whenever an adolescent has been placed in and released from residential treatment in order to prevent relapses into gang behaviors and to reduce recidivism (Howell, 2012). An important aspect of the CGM is its "graduated sanctions" approach to suppression and incarceration.

Krisberg and Howell (1999) have suggested that "the appropriate mix of residential and home-based services for different types of offenders" (p. 364) might provide a useful initial framework for determining what works for different types of offending and gang-prone youth. When connected to prevention and intervention programs, graduated sanctions have proven effective for reducing adolescent gang behavior and gang affiliation (Egley & Major, 2003; Esbensen, 2000; Howell, 2003a). Currently, this is a strategy being employed by the juvenile criminal justice system to target adolescent gang behaviors.

To be effective, however, the components of any graduated sanctions system must match the developmental history of an adolescent's delinquent career as well as the risk of recidivism. When offenders persist in committing serious and violent acts of delinquency, their positions in the graduated sanctions system should be advanced, and rehabilitation systems must become more intensive and structured. In the CGM, the five levels of sanctions are the following: (a) immediate intervention (e.g., counseling, probation) with first-time misdemeanors and nonviolent felony offenders and non-serious repeat offenders; (b) intermediate sanctions for first-time serious or violent offenders, including more intensive supervision and probation; (c) community confinement; (d) secure corrections for serious, violent, and chronic offenders; and (e) aftercare (Howell, 2003a). These gradations form a continuum of intervention options that require a matching continuum of treatment options that include referral and disposition resources. Intensive aftercare programs are critical to the success of such systems at all sanction levels (Howell, 2003a).

## What Might Work

As has been emphasized throughout this chapter, residential treatment interventions that address adolescent gang behavior must be part of a broader strategy that includes prevention and suppression. Although the OJJDP continues to apply such strategies in large cities, the applicability of these strategies to suburban and rural adolescents is still being debated (Egley, 2002). Recent studies of migration patterns have shed new light on strategies that might work in those geographic locations (Thornberry et al., 2003). While the CGM and other combined strategy approaches appear applicable to these new patterns, empirical studies need to be conducted to support their validity. Other residential treatment programs for adolescent gang members that have shown various degrees of beneficial results include wilderness challenge programs (Lipsey et al., 2000), restitution programs (Roy, 1995), and specialized facilities for specific behavioral problems (Reich, Culross, & Behrman, 2002). These approaches require more thorough evaluation.

## What Doesn't Work

Many prevention programs inadvertently create deviant peer groups (as often occurs in prisons) when they establish and run such activities as anger management classes (Lipsey et al., 2000). Being placed in one of these groups is often perceived as a form of punishment (Howell, 2003b), and such experiences can have iatrogenic effects—that is, the problem being addressed can be inadvertently made worse by the treatment procedure. Still, despite the large number of studies showing that punishment is ineffective for juvenile offenders (especially gang members), incarceration remains the most prevalent form of "residential treatment" for this population (Howell, 2003a; Klein et al., 1995; Thornberry et al., 2003). Ever since the mid-nineteenth century, advocates of incarceration alternatives have argued that prisons breed crime (Foucault, 1977; Krisberg & Howell, 1999), yet defenders of juvenile corrections continue to claim that confinement exerts a deterrent effect (DiIulio, 1995; Murray & Cox, 1979; Rhine, 1996).

Researchers have reported that the most ineffective forms of residential treatment are boot camps (Howell, 2012), large custodial facilities (Krisberg & Howell, 1999), and long prison terms—especially for adolescents sent to adult facilities (Howell, 1997, 2000, 2003a). Psychiatric hospitalization for adolescent gang

members has been described as the worst form of residential treatment (Howell, 2003a; United States Department of Health and Human Services [USDHHS], 2001) and one that does more harm than good (Burns, Hoagwood, & Mrazek, 1999; Weithorn, 1988).

## Psychopharmacology and Gangs

The effects of medication on childhood and adolescent behavioral problems—especially violence and delinquency—are still very much in need of research and evaluation (Howell, 2003a, 2009; Wasserman, Miller, & Cothern, 2000). The few studies that have been conducted on the long-term benefits of medication treatment for either chronic or acute violence and delinquency in adolescents have not specifically addressed gang-related issues (Burns et al., 1999; Howell, 2003a). When applied to aggression and delinquency, psychopharmacology typically focuses on physical acts of aggression (Rippon, 2000). Lynn and King (2002) have noted that "aggression and violence are often not precisely defined, and their [psychopharmacological] study is complicated as a result" (p. 305).[3]

A primary issue in addressing adolescent delinquency and aggression is that both are viewed as symptoms in the constellation of psychiatric disorders that include attention-deficit/hyperactivity disorders, conduct disorder, and oppositional defiant disorder. Aggression and delinquency can also occur in posttraumatic stress disorder, psychotic disorders, mood disorders, seizure disorders, pervasive developmental disorders, mental retardation, and traumatic brain injuries (Fagan et al., 2008; Fava, 1997). Furthermore, in terms of psychopharmacological studies, aggression and associated delinquencies are poorly understood in terms of their neurobiological underpinnings (Lynn & King, 2002). There is some consistency in research results concerning interactions among multiple neurotransmitter, neuroendocrine, and hormonal systems and their mechanisms for regulating aggression, impulsivity, and other behaviors that are commonly associated with gang activities (De Felipe, Herrero, & O'Brien, 1998; Finkelhor et al., 2009).[4]

## Preventing Adolescent Gangs and Gang Behavior

No one has yet discovered an effective strategy for preventing the formation of youth gangs (Hodgkinson et al., 2009; Howell, 2000, 2003a, 2012). As has been argued in preceding sections, it seems that in order to be effective, prevention must be considered as one part of a comprehensive strategy that also addresses intervention and suppression concerns. Here I will describe several programs organized outside the juvenile criminal justice system that are considered exemplars of the prevention component of the CGM.

### What Works

It is possible to prevent youth from joining gangs. The first level of prevention involves strengthening the core social institutions that let them down from the outset. It appears that the only prevention techniques that work are those that combine prevention efforts with intervention and suppression strategies. Hawkins et al. (2000) have proposed the following set of principles to guide the programming of prevention efforts: (a) address known risk factors for delinquency, violence, and substance abuse; (b) make clear connections between program activities and risk reduction goals; (c) attempt to strengthen protective factors while reducing risk; (d) address risk reduction activities before they become predictive of later problems; (e) provide intervention strategies that target individuals and communities that are exposed to multiple risk factors; (f) take a multifaceted approach to addressing key risk factors affecting a community; (g) include members

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[3] This statement could be considered ironic, since aggression, conduct problems, and antisocial behavior account for one-third to one-half of all child and adolescent referrals to psychiatric clinics (Lynn & King, 2002).

[4] It is important to note that the vast majority of the available studies used laboratory animals (Lopez, Vazqueuz, Chalmers, & Watson, 1997).

of all racial, cultural, and socioeconomic groups that will be affected.

While a number of prevention strategies have been developed to augment the CGM, three programs stand out as examples of a prevention component that could be viewed as reducing the necessity of implementing intervention and suppression components. All three programs were analyzed in detail during the development of the CGM (Egley, 2002; Howell, 2003a, 2012).

1. The Gang Resistance Education and Training (G.R.E.A.T.) program. G.R.E.A.T. is a school-based gang prevention program that is currently delivered to 365,000 public middle school students in the United States (Howell, 2003a). The program places particular emphasis on cognitive-behavioral skills training, social skills development, refusal skills training, and conflict resolution. It has been found to have positive long-term effects on reducing gang membership and delinquency (Esbensen et al., 2011; Esbensen & Osgood, 1999; Howell, 2003a, 2012).

2. The Montreal Preventive Treatment Program, designed to address antisocial behavior in 7-, 8-, and 9-year-old boys from low-income families who display disruptive behavior problems in kindergarten. This program has successfully demonstrated that a combination of parent training and childhood skills development can steer children away from gangs. The training uses coaching, peer modeling, self-instruction, reinforcement contingencies, and role playing to build skills. Evaluations have identified short- and long-term gains, including lower delinquency rates, less substance abuse, and less gang involvement at the age of 15 (Howell, 2000; Moore, 1998).

3. The Gang Prevention Through Targeted Outreach program, developed by the Boys and Girls Clubs of America. At-risk youth are identified and recruited into the program through direct outreach efforts and school referrals. Training is offered in character and leadership development, health and life skills, the arts, sports, fitness, and recreation. An evaluation of this program showed decreases in gang and delinquent behaviors, more positive adult and peer relationships, and positive changes in the participants' achievements in school (Arbreton & McClanahan, 2002; Esbensen, 2000; Howell, 2003a, 2012).

Two clinical approaches have been found to be effective in preventing child and adolescent antisocial behavior, delinquency, and associations with delinquent peers. The first is known as Multisystemic Therapy (MST) (Henggeler, Schoenwald, Bourduin, Rowland, & Cunningham, 1998). Based on a family preservation model, MST focuses on improving parental control and involvement with their children, and emphasizes the formation of a care continuum between families and community care systems (Henggeler, Cunningham, Schoenwald, Borduin, & Rowland, 2009).[5] The second is Functional Family Therapy (FFT) (Alexander, Barton, Schiavo, & Parsons, 1976; Alexander & Parsons, 1973), which uses behavioral techniques such as clear specification of rules and consequences, contingency contracting, use of social reinforcement, and token economy, as well as more cognitively based interventions (e.g., examining attributions and expectations) to increase communication and mutual problem-solving within the family as a whole. In well-controlled studies, both MST and FFT have been shown to be effective in improving family communication and in lowering recidivism of youth with histories of minor delinquency as well as those with more serious behavior problems (Swenson, Henggeler, Taylor, Addison, & Chamberlain, 2009; Wasserman et al., 2000).

## What Might Work

In terms of prevention, what might work raises issues similar to those reviewed in previous sections, especially in regard to strategies that account for certain gang-related migration patterns. Potentially successful approaches include the use of peer leaders to serve as anti-gang and anti-delinquency role models, especially in partnership

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[5] Because of its emphasis on care continuums, MST is frequently used to augment the OJJDP Comprehensive Strategy (Henggeler et al., 2009; Howell, 2003a, 2012).

with teachers who are charged with applying the curriculum (Howell, 2003a).[6] Other prevention approaches believed to be effective but not yet evaluated include Midnight Basketball, community service, and community enrichment programs (Gottfredson & Gottfredson, 2001; USDHHS, 2001).

A strategy that has shown mixed results is community policing. Because there are so many different versions of this approach (Peak & Glensor, 1999), it is not possible to present a coherent overview in this chapter. However, it appears that the most successful community police interventions have been those that support community resiliency efforts, did the most to build relationships between individual police officers and community residents, and used suppression only as a last-ditch option (Howell, 2003a).

## What Doesn't Work

Scare tactics, perhaps the most common approach to preventing adolescent gang behavior, simply do not work (Howell, 2003a). Viewed as presuppression tactics, their failure lends further support to the assertion that prevention and intervention must be incorporated into any successful antigang strategy. The failure of some generously funded and widely implemented programs supports this assertion, the most famous being the Drug Abuse Resistance Education (D.A.R.E.) program. Its success is widely acclaimed despite an ever-increasing number of reports attesting to its ineffectiveness as a substance abuse prevention program.[7]

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[6] The use of peer leaders without adult/teacher supervision has proven to be uniformly ineffective (Gottfredson & Gottfredson, 2001; Howell, 2003a, 2012).

[7] D.A.R.E. has grown into a $227-million/year enterprise that hires 50,000 police officers to teach its curriculum (Gottfredson & Gottfredson, 2001). Mixed results have been reported from at least 20 rigorous evaluations of the D.A.R.E. program (Howell, 2012). The three most rigorous studies, each of which used a random design, were conducted by Clayton, Cattarello, and Johnstone (1996); Rosenbaum, Flewelling, Bailey, Ringwalt, and Wilkinson (1994); and Rosenbaum and Hanson (1998). The results of these studies showed conclusively that D.A.R.E. is ineffective in achieving its stated goals.

Zero-tolerance policies are social control policies grounded in a philosophy of deterrence. They encourage punishment for any infraction of codes of conduct on the part of children and adolescents. In terms of gang-related behaviors, such policies have been implemented to address drug use, vandalism, threatening speech, and gun crimes in communities throughout the United States, but especially in low-income neighborhoods (Stimmel, 1996). The ineffectiveness of zero-tolerance policies may be due to a combination of their close relationship with suppression strategies and their demand for immediate and severe punishment for every single infraction of codes, rules, and laws, which taxes overburdened community resources.

## Conclusion: Best Practice Recommendations

Recent surveys have underscored the general lack of successful gang prevention, intervention, or suppression programs in the United States (Barrows & Huff, 2009; Hayeslip & Cahill, 2009; Howell, 2003a; Lipsey et al., 2010; Thornberry et al., 2003). Klein et al. (1995) concluded that "much of our local response and most of our state and federal responses to gang problems are way off base—conceptually misguided, poorly implemented, half-heartedly pursued" (p. 19). It appears that his assertion remains true today.

An extraordinary amount of time, effort, and money has been expended since Thrasher's (1927) initial explorations of the gang problem in America, and most researchers who have reviewed the enormous amount of available information have concluded that the problem can only be successfully controlled through a combination of prevention, intervention, and suppression (Egley, 2002; Hodgkinson et al., 2009; Howell, 2003a, 2009; National Gang Center, 2010a, 2010b; OJJDP, 2009; Thornberry et al., 2003). Based on that conclusion, Howell (2003a) has developed what he refers to as a CGM—an integrated approach to the adolescent gang issue that has been described as the "best practice" for dealing with the adolescent gang

problem by the US Department of Justice's OJJDP (Egley, 2002).

The CGM is a two-tiered system for responding proactively to juvenile delinquency, crime, and gang behavior. In the first tier, prevention and early intervention programs are used to prevent and mitigate initial acts of delinquency. If these efforts fail, then the juvenile justice system (the second tier) must respond to delinquency by addressing the recidivism risk factors and treatment needs of adolescent gang members.

The CGM is based on the following principles:

- Families must be strengthened in terms of their primary responsibilities to instill moral values and to provide guidance and support to children. Where no functional family unit exists, it is imperative to establish family surrogates and to provide them with adequate resources for guiding and nurturing their charges.
- "Core" social institutions such as schools, churches, and community organizations require additional support for their efforts in developing capable, mature, and responsible youth. The collective goal of these institutions should be to ensure that children have opportunities and support for becoming productive, law-abiding adults.
- When delinquent/gang behaviors occur, timely intervention is required to prevent first-time or very young offenders from becoming chronic offenders or committing more serious and violent crimes. Under an authoritative umbrella that includes police, intake, and probation agencies, initial intervention efforts should be established around family and other core societal institutions. In addition to ensuring appropriate responses, juvenile justice system authorities should act quickly and firmly when formal adjudication procedures and sanctions are required.
- Serious, violent, and chronic juvenile offenders who have committed felony offenses or who have failed to respond to intervention and nonsecure community-based treatment and rehabilitation services must be identified. Offenders who are considered threats to community safety may require placement in more secure community-based facilities (Howell, 2003a, 2012).

Unlike many other gang prevention and control programs, the CGM is research based, data driven, and outcome focused. It is a framework that is based on decades of research findings and a synthesis of program evaluations; its focus is on empowering communities to assess their own gang problems and needs, and then provide guidance for using the data to design and implement their own comprehensive strategies. The CGM was established on the premise that local ownership of programs and strategies breeds success (Tolan, Perry, & Jones, 1987).

The CGM is considered "comprehensive" in the following respects:

- It encompasses the entire juvenile justice enterprise—prevention, intervention, and suppression—in the form of graduated sanctions.
- While it specifically targets serious, violent, and chronic offenders, it provides a framework for dealing with all juvenile offenders as well as at-risk children and adolescents.
- It calls for an integrated, multi-agency response to childhood and adolescent problems that promotes a unified effort on the part of the juvenile justice, mental health, child welfare, education, and law enforcement systems and community organizations.
- It links all juvenile justice system resources in an interactive manner, reflecting the belief that comprehensive juvenile justice is not a zero-sum game.
- It guides jurisdictions in developing response continuums that parallel offender and gang member careers, beginning with early intervention and followed by a combination of prevention and graduated sanctions. Such a continuum allows a community to organize an array of programs that corresponds to how gang member careers develop over time.

The integration of strategies (e.g., provision of support in separating from gangs with suppression that discourages further involvement in gang crime) and services (multiple service providers and high dosage levels) has emerged as a predominant feature of effective gang programs. In addition, Hodgkinson et al. (2009) systematic review of comprehensive gang programs suggests that key features of effective programs are (1) case management (an intervention team),

(2) community involvement in the planning and delivery of interventions, and (3) expertise sharing among involved agencies. A continuum of programs aimed at specific points in a gang member's career or an at-risk adolescent's life course has a much better chance of succeeding than any single intervention. Programs are needed that address family risk factors during the preschool years, school-focused interventions are required from preschool through elementary school, and programs that buffer the exposure of adolescents to delinquent and gang peer influences are required during the junior and senior high school years. Prevention, intervention, and suppression strategies that counter individual, family, and community risk factors for joining gangs are clearly needed at all points of a young person's life course.

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# Substance Misuse and Abuse

<span style="float:right">**26**</span>

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This chapter overviews selected factors on adolescent substance misuse and abuse etiology, prevention, and treatment. *Primary prevention* is defined in this chapter to include planned actions that help adolescents prevent predictable problems, protect existing states of health as well as healthy functioning, and promote desired

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goals for adolescents. *Treatment* is defined as activities and actions that focus on helping adolescents reduce problems associated with substance use/misuse and that change individual substance abuse behavior and enhance social functioning. This chapter overviews selected factors at the individual level, family level, and social/community level, which have been found to be associated with adolescent substance use and misuse. Promising adolescent drug abuse prevention and treatment interventions are also presented.

Adolescent interventions in the United States have targeted risk and protective factors as well as problems associated with use. Risk and protective factors are grounded in early resiliency and invulnerability studies (see Hawkins, Catalano, & Miller, 1992) within a public health context. Risk and protective factors include individual characteristics, attributes, situational conditions, or environmental contexts that increase the probability of drug use or misuse or transition to another level of use (Clayton, 1992). Protective factors inhibit, reduce, or buffer the probability of drug use and misuse or a transition to further drug involvement. However, risk and protective factors cannot always be differentiated at the individual level. For example, a protective factor for one adolescent could be a risk factor for another. Substance use can also change the balance of risk and protective factors, which may change the level of substances used.

A bio/psycho/social/spiritual theoretical perspective (Leukefeld & Leukefeld, 1999) proposes a way of thinking about substance abuse. This framework presents theoretically grounded approaches and incorporates the interaction of behavior, environment, spirituality, and biology. It is also compatible with a public health focus on the interaction of the agent (substance), the host (the adolescent), and the environment (the setting that brings the two together) (see Daugherty & Leukefeld, 1998). The bio/psycho/social/spiritual theoretical perspective incorporates four possible pathways or combinations of pathways to substance abuse. (1) *Biology or genetic* pathways include heritability and biologically based theories of substance abuse which are commonly described as the disease model of addiction. (2) *Psychological* pathways incorporate individual characteristics that contribute to the motivation to use substances, expectancies to use, personality factors, and thinking that substance abuse is a learned behavior that can be unlearned. (3) *Social and environmental* pathways include laws, culture, family norms, customs, and peer associations related to substance abuse. (4) *Spirituality* incorporates the idea that a belief in something is a protective factor while being important for recovery from substance abuse. Although the clinical literature is fairly consistent in the idea that spirituality is related to recovery, it is not without controversy.

## DSM-V and Incidence/Prevalence Rates

Findings from the 2011 Monitoring the Future Study (Johnston, O'Malley, Bachman, & Schulenberg, 2012) indicate that by eighth grade 33.1 % of students have tried alcohol and 14.8 % had been drunk at least once. Marijuana was tried by 16.4 % of eighth graders, and it had been used by 7.2 % of eighth graders in the previous month. Likewise, 13.1 % of eighth graders said they had used inhalants, 5.2 % tried amphetamines, and 18.4 % said they had tried cigarettes. Most students had tried alcohol with 56.0 % of tenth graders and 70.0 % of twelfth graders who had tried alcohol. There was more limited use of marijuana with 34.5 % of tenth graders and 45.5 % of twelfth graders who had tried marijuana.

## Biological and Genetic Factors

The individual's biology and the substance interact to affect drug-taking behavior. Monozygotic, dizygotic, and adoption studies provide evidence of a moderate genetic component to alcoholism (see Hawkins et al., 1992). Studies have further determined that genes contribute to both the initiation and perpetuation of tobacco, alcohol, and cannabis use (Schmid et al., 2009). For example, early, heavy nicotine and alcohol use (i.e., before the age of 15) as well as regular substance use moderates the dopamine transporter gene (i.e., *DAT1*), which predicts early adult substance use and dependence. Importantly, environmental influences have been shown to be more influential than genetics in younger adolescents and at the beginning stages of substance use (see Lynskey, Agrawal, & Heath, 2010). Finally, the genetic factors that contribute to the adolescent substance use can overlap with genetic factors associated with adolescent externalizing psychopathology (see Lynskey et al., 2010).

Psychiatric disorders that are common among youth with substance use disorders include (1) *mood disorders* (major depression and bipolar disorder), (2) *anxiety disorders* (generalized anxiety disorder, social phobia, panic attacks, and post-traumatic stress disorder), and (3) *disruptive disorders* (conduct disorder, oppositional defiant disorder, and attention deficit hyperactivity disorder [ADHD]). Bulimia nervosa is also associated with adolescent substance use (Kilpatrick et al., 2003). Untreated psychiatric comorbidity has been related to treatment failure and can persist after successful treatment (Wise, Cuffe, & Fischer, 2001). Table 26.1 presents a summary of disorders that are commonly comorbid with substance abuse in addition to pharmacological treatment strategies. It is important to emphasize that treating psychiatric disorders alone has not been associated with significant improvement in substance use, and psychiatric medications are not the first line of treatment but should be considered part of treatment (Riggs, Mikulich, & Hall, 2001).

**Table 26.1** Psychiatric disorders, substance use, and promising pharmacological treatment strategies (Adapted by Martin, Sanchez, & Lester, 2012)

| Comorbidity | Medication | Impact on psychiatric symptoms | Changes in substance use |
|---|---|---|---|
| *Mood disorders* | | | |
| Bipolar, aggression | Lithium D | Stabilizes mania | Decreases substance abuse (Geller et al., 1998) |
| Mood lability, conduct disorder | Depakote | Stabilizes mood | Decrease in marijuana use (Levin et al., 2004) |
| *Disruptive disorders* | | | |
| ADHD | Stimulants | Stimulant use (methyphenidate, dexedrine short and long acting, lisdexamfetamine dimesylate) is associated with decreases in inattention and impulsivity<br><br>*Note*: longer acting may have less abuse potential and lisdexamfetamine dimesylate must be metabolized before effect and thus less likely used in other than the oral route | Decreased use of all substance abuse other than nicotine. Increases nicotine use in laboratory setting (Daviss et al., 2001; Henningfield & Griffiths, 1981; Vansickel, Stoops, Glaser, Poole, & Rush, 2011; Wilens, Faraone, Biederman, & Gunawardene, 2003) |
| ADHD + Depression | Bupropion | Since bupropion is effective for both depression and ADHD it may be considered when the disorders occur together. Has good safety profile in substance users. There is an increased risk for seizure in patients with bulimia and bulimic is associated with alcohol abuse | Used as a smoking cessation aid |

In addition to the general association of substance use disorders with psychiatric comorbidity, there appear to be selected disorders that have particular risk for specific substance use. "Self-medication" may be seen in adolescents with ADHD who self-administer nicotine to tap into its effect on concentration (Conners et al., 1996). Adolescents with social phobia may use alcohol to decrease anxiety in social situations (Kushner et al., 1996). Thus, these drugs may have strong reinforcing and behavioral effects for vulnerable adolescents and may help explain the link of ADHD to cigarette smoking (Milberger, Biederman, Faraone, Chen, & Jones, 1997) as well as the link of social phobia and panic attacks to alcohol use disorders in adolescents (Zimmermann et al., 2003).

The contributions of psychiatric disorders and/or personality traits on unique drug use choices have been examined in adults. For example, Chait (1994) reported that normal subjects who chose methylphenidate over placebo scored higher on the extroversion and impulsivity subscales of Eysenck's Personality Inventory and the experience seeking subscale of the sensation seeking (SS) scale when compared to subjects who did not choose either methylphenidate or placebo. Martin, Kelly, Delzer, and Rayens (1999) demonstrated that the interaction of conduct disorder and sensation seeking (SS) scale was associated with the reinforcing effects of amphetamines in young adults.

Sensation seeking, the tendency to seek novel and exciting stimuli, has been associated with tobacco, alcohol (including binge drinking), marijuana, and other drug use in adolescents (Martin et al., 2002; Sargent, Tanski, Stoolmiller, & Hanewinkel, 2010). Hopelessness, another personality dimension as measured by the Substance Use Risk Profile Scale, is associated with earlier onset alcohol, tobacco, and other drug use. There is evidence that tailoring messages and treatment to the personality type can lead to reduction in drug use (Palmgreen, Donohew, Lorch, Hoyle, & Stephenson, 2001).

## Individual Factors Influencing Risk and Resiliency

A number of individual factors have been associated with adolescent drug and alcohol misuse and abuse. Examples of these factors include childhood conduct disorders (Lynam, 1996),

low self-esteem (Overholser, Adams, Lehnert, & Brinkman, 1995), sensation seeking (Beck, Thombs, Mahoney, & Fingar, 1995), and—from literature reviews by Hawkins et al. (1992) and Schulte, Ramo, and Brown (2009)—poor impulse control, genetic predisposition to alcoholism, altered P300 amplitudes, low family bonding, antisocial behavior, aggressiveness, academic failure, low school commitment, early peer rejection, drug-using peers, alienation, early drug use, and favorable drug use attitudes. Schulte et al. (2009) document gender differences in vulnerability to alcohol use with findings that boys have reduced responses to alcohol, later maturation of brain structures controlling executive function, higher estimates of peer drinking, and socialization into traditional gender roles.

Variability in acute drug effects, individual differences in the adolescent drug user and differences in social context when a drug is used, drug withdrawal, and the combination of drug effects must be taken into account when assessing individual factors and vulnerabilities to develop a tailored treatment. Drug effects can range from decreasing anxiety seen in a group of socially anxious friends who smoke cigarettes before school to moderate dysphoria and disinhibition to an adolescent who gets a family message that he/she is a failure, begins drinking alcohol, and decides to kill himself/herself. When assessing ways to assist adolescents, issues associated with immediate morbidity must be addressed first and then the complex system in which substance abuse occurs can be addressed.

Psychiatric disorders and psychological symptoms may be associated with the timing an individual initiates drug use, continued drug use following the initial exposure, and the rate of progression of use and/or continued drug use despite adverse social or health consequences (Winters, Stinchfield, Latimer, & Stone, 2008). Measures of individual differences can include a structured psychiatric assessment, personality measures, or specific tasks that measure variables such as attention or impulsivity or response to reward. Another possible determinant of drug use risk is the discriminative, reinforcing, and/or behavioral drug effects (e.g., Brady & Lukas, 1984).

Early substance abuse can change the developmental trajectory of an adolescent who is undergoing dramatic physiological, social, and interpersonal changes which are likely to exacerbate psychiatric disorders (Crowley & Riggs, 1995). Adolescents who engage in high-risk behavior because of disinhibition and high sensation seekers may be particularly vulnerable under the influence of disinhibiting drugs like alcohol. In general, high-risk behaviors that increase under the influence of alcohol and other drugs include aggression, violence, and risky behaviors like unprotected sex (see Jessor & Jessor, 1977). For example, adolescents under the influence of alcohol and other drugs are more likely to be in car accidents, be raped, or drown (Lescohier & Gallagher, 1996). Marijuana use has been associated with increased risk for motor vehicle accidents, assault, and self-inflicted injuries (Gerberich et al., 2003). Although adolescents with conduct disorder may display bravado initially, adolescents with conduct disorder and depression are at highest risk for a lethal suicide attempt, particularly under the influence of an illicit drug (Fergusson, Woodward, & Horwood, 2000). In addition, vulnerability to depression and disinhibition may be aggravated by acute drug effects, which can propel an adolescent into dangerous behavior including harm to self and others.

## Family Factors Influencing Risk and Resiliency

Familial factors have a role in risk and resiliency to adolescent substance use and abuse (Leukefeld et al., 1998). These factors include family structure, history, and relationships, as well as parenting styles and parental drug use. According to Cattarello, Clayton, and Leukefeld (1995), a factor may add to risk or resiliency depending on its direction. For example, although being in a single-parent home may be a risk factor for adolescent substance abuse, having both parents at home may be a protective/resiliency factor against substance abuse. Ethnicity and gender also play a complex role in adolescent substance use and abuse (Beauvais & Oetting, 2002).

Family structure has an important role in risk or resiliency for adolescent substance abuse. For example, in one study, children of addicted parents showed resilience to addiction if they had a younger sibling to "protect" or positive interactions with extended family (Ronel & Haimoff-Ayali, 2010). Conversely, having an older sibling who uses drugs increases the risk for adolescent substance abuse (Low, Shortt, & Snyder, 2012). A study by Dube et al. (2003) reported that a family history of abuse, neglect, and dysfunction contributes to adolescent substance use and abuse. In that study, adverse childhood events (ACEs) and substance abuse were examined for adults in the Kaiser Health Plan. Findings suggest that ACEs increase the risk of initiation of illicit drug use by age 14 and lifetime drug use. That is, respondents who reported histories of emotional physical/sexual abuse or emotional or physical neglect were more likely to report adolescent substance use.

The interaction and relationships within a family are another factor that can contribute to the risk for and resiliency to adolescent substance abuse. For example, in families with higher levels of rules and monitoring, there were significantly lower levels of drug use initiation in a sample of Seattle students over 11 years (Guo, Hill, Hawkins, Catalano, & Abbott, 2002). These results indicate that increased levels of family involvement, bonding, and discipline contributed to no or less drug use. However, a more recent review did not support parental incarceration (i.e., parental rule-breaking) in adolescent drug use (Murray, Farrington, & Sekol, 2012).

Parenting style, or perceived parenting style, can also play a role in adolescent substance use (Montgomery, Fisk, & Craig, 2008). For example, neglectful, indulgent, or non-authoritative parenting style for both mothers and fathers was associated with an increased likelihood of drug use (Benchaya, Bisch, Moreira, Ferigolo, & Barros, 2011), while authoritative parents were less likely to have children who used alcohol (Bahr & Hoffman, 2010). That study also showed that religiosity decreased the likelihood of heavy alcohol use.

Parental substance use has been identified as one of the most common risk factors for adolescent substance use (Ronel & Haimoff-Ayali, 2010).

For example, longitudinal data from Indianapolis students over 18 months clearly demonstrated the impact of parental substance use on adolescent substance use (Li, Pentz, & Chou, 2002). Specifically, parents' tobacco and marijuana use was significantly associated with tobacco, alcohol, and marijuana use by their children. Parents' alcohol use also predicted alcohol use by their children. This effect was increased when both parents reported using a substance.

Gender and race–ethnicity also contribute to adolescent substance use. For African American women, family poverty was associated with lower lifetime marijuana and cocaine use, but not for African American men (Ensminger, Juon, & Fothergill, 2002). It is important to note that the effects of gender upon risk and resiliency to substance use are complex and variable. For example, the higher prevalence of drug use in males may in part be accounted for by greater numbers of opportunities to use drugs for males than for females (e.g., Van Etten & Anthony, 2001). However, research has shown that once there is an opportunity to use drugs, males and females do not generally differ in transiting to drug use.

Race–ethnicity also plays a complex and variable role in risk and resiliency to use drugs. For example, African Americans report exposure to a larger number of risk factors than European Americans (Gil, Vega, & Turner, 2002), even though the prevalence of some drug use (i.e., marijuana) is lower in most minority groups in the United States, when compared to whites (Beauvais & Oetting, 2002). Risk factors within an ethnic group have not consistently been predictive of drug use (Vega, Zimmerman, Warheit, Apospori, & Gil, 1993). This difference in the predictive value of risk factors within an ethnic group may be related to culture (Semple, Amaro, Strathdee, Zians, & Patterson, 2009).

## Social and Community Factors Influencing Risk and Resiliency

Social and community factors also contribute to risk and resiliency for adolescent substance misuse and abuse (for review, see Leukefeld et al., 1998).

These factors include peer attitudes toward substance use, school environment, prevention efforts, and multiple community factors like cultural norms, population mobility, neighborhood deviance, role models, and poverty (Yamaguchi, Johnston, & O'Malley, 2003). Like family factors, social and/or community factors can add to risk or resiliency, depending on the direction. Practitioners should be aware that gender and ethnicity can influence risk and resiliency to drug abuse and should not take a "one size fits all" approach to adolescent substance abuse prevention and treatment.

Peer and attitudes and substance use can influence adolescent substance use and misuse (Swadi, 1999). For example, in a sample of Seattle youth followed over 11 years, high levels of peer prosocial activity were protective against drug use initiation, while antisocial peer activity was a risk factor for drug use over time (Guo et al., 2002). In another longitudinal study, New York youth who associated with peers who smoked cigarettes or used marijuana were more likely to initiate marijuana use (Brook, Kessler, & Cohen, 1999). However, peer influence appears to be age dependent, because for adolescents older than 12, peer attitudes and drug use were better predictors of substance use than for children (Sale, Sambrano, Springer, & Turner, 2003). Consequently, practitioners should be mindful of age.

School environment and prevention efforts can also contribute to risk and resiliency for adolescent substance use (e.g., Brooks, Magnusson, Spencer, & Morgan, 2012). For example, adolescents who actively participated in sports or other extracurricular activities were less likely to smoke cigarettes or use marijuana but not alcohol (Harrison & Narayan, 2003). Thus, a school environment that encourages participation in extracurricular activities may be protective against adolescent drug use. School prevention activities contribute to risk and resiliency for substance abuse (Trudeau, Spoth, Lillehoj, Redmond, & Wickrama, 2003). For example, results from rural seventh graders showed that students involved in *Life-Skills Training* (Botvin, 2000) were slower to initiate substance use than students with minimal contact. However, not all school prevention efforts target risk, but drug test which may not reduce drug use (Yamaguchi et al., 2003).

Social behaviors, including drug taking, are learned through cultural factors, and are influenced by culture and community norms (Brooks et al., 2012). Oetting, Donnermeyer, and Deffenbacher (1998) describe numerous cultural/community factors, which include population mobility, neighborhood deviance, and poverty, that can influence adolescent substance use (Oetting et al., 1998). Although a full discussion of these factors is beyond the scope of this chapter, one critical community factor that may influence adolescent use is neighborhood environment. Novak, Reardon, and Buka (2002) reported that neighborhood environment significantly contributed to beliefs about substance use among urban youth. That is, perceived risk of hard drug use was associated with their residential neighborhood, which was in addition to past drug experiences. Perceived risk of drug use can also contribute to adolescent use (Johnston, O'Malley, & Bachman, 2003) while another determinant of substance use is a negative nonparental adult role model (Hurd, Zimmerman, & Xue, 2009).

Like family factors, gender and ethnicity contribute to the way that social and community factors can influence adolescent substance use (Harrison & Narayan, 2003). Perry et al. (2003) reported a significant difference in self-reported substance use for boys following the *Drug Abuse Resistance Education* (DARE) Plus prevention program. However, differences were not found among girls. Another study showed that perception of discrimination increased the likelihood of substance use and association with substance using peers in male African American adolescents, but not in female African American adolescents (Brody, Kogan, & Chen, 2012). Thus, gender and ethnicity are associated with risk and resiliency as social and community factors which contribute to substance use (O'Malley, Johnston, & Bachman, 1995). Consequently, practitioners should tailor individual prevention and treatment strategies because risk and resiliency factors vary with a person's gender and ethnicity.

## Evidence-Based Treatment Interventions in Community Settings

Program characteristics have been associated with successful treatment. Overall, there are three types of adolescent substance abuse treatment interventions: (1) community-based outpatient treatment, (2) residential treatment, and (3) therapeutic community treatment. The varied programs reflect efforts to target risk factors (Paglia & Room, 1999), including the *individual* with genetic susceptibility and general demographics, *schools* with school alienation and poor academics, the *family* with familial conflict and family disruption, *peers* who befriend peer substance users, and the *community* with cultural norms and substance availability.

## What Works

Current research shows that the most effective adolescent substance abuse intervention programs integrate multiple approaches, which include individual and group counseling, behavioral therapy, continued care following the intervention, education, specialist services like case management and specialized family therapy to address an adolescent's development and maturation, and patterns that link drug use with other problem behaviors (Dennis et al., 2004). There are databases, which present what works—called evidence-based practice. These databases include the National Registry of Evidence-Based Programs and Practices (Substance Abuse and Mental Health Services Administration, 2013), The Department of Justice Crime Solutions (Office of Justice Programs, 2013), and the Agency for Healthcare Research (U.S. Department of Health & Human Services, 2013).

Family-Based Therapy and Family-Based Adolescent Interventions have been shown to be effective in changing adolescent substance use, particularly interventions that target multiple parts of a youth's life (Lynskey et al., 2010). Specifically, the family-based Multidimensional

Family Therapy (MDFT)—a three-phase treatment program on social competence, pro-social behaviors, antidrug use attitudes and behaviors, peer network, family relationships, problem solving, and lifestyle changes—has been found to be effective (Liddle, Rowe, Dakof, Henderson, & Greenbaum, 2009). Other effective family therapy programs include Multisystemic Therapy (MST) (Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002) and Functional Family Therapy (FFT), which uses a family systems approach and integrates components of Cognitive Behavioral Therapy (CBT) and MST (Alexander & Parsons, 1982). A meta-analysis of family therapies found that MDFT, MST, and FFT each produced better outcomes than treatment as usual or another therapy (Henggeler et al., 2002).

Motivational Enhancement Therapy (MET) has shown success with adults (Carroll, 1996). Smaller clinical trials indicate that these approaches can be effective for adolescents (Walker et al., 2011). With MET, motivation is internal rather than external. Consequently, the clinician guides a client toward change through listening and reflection, goal setting, non-confrontational therapy sessions, and by increasing the client's self-efficacy with past successes (see Miller & Rollnick, 1991).

CBT is structured to build coping skills through group discussions, behavioral modeling, and role play. CBT is effective as a stand-alone treatment (Waldron & Turner, 2008) as well as in combination with other therapies (Dennis et al., 2004). The Cannabis Youth Treatment Study found that MET with five CBT sessions as well as MET with 12 CBT sessions produced positive treatment effects (Dennis et al., 2004).

## What Might Work

A potential approach for treating drug-involved adolescents is the *Family Empowerment Intervention* (FEI) (Dembo, Livingston, & Schmeidler, 2002). FEI treatment is provided at home by a trained paraprofessional who delivers three 1-h weekly meetings focused on enhancing

family functioning, parenting skills, and increasing involvement in social support networks. Twelve-month outcomes included fewer drug sales, decreased episodes of intoxication, better psychosocial outcomes, and lower hair-test positive rates for marijuana use when compared to the controls (Dembo et al., 2002).

Another approach is the Adolescent Community Reinforcement Approach (ACRA) which combines individual and family sessions and focuses on establishing contingencies that compete with drug use behavior and developing a support system within the family and the community (Godley, Godley, Dennis, Funk, & Passetti, 2002). The Cannabis Youth Treatment Study compared the efficacy of ACRA, MET with five CBT sessions, and MDFT (Dennis et al., 2004). Outcomes indicated that the total days of not using drugs were not significantly different. However, ACRA was more cost effective. More randomized studies are needed.

Overall, the emphasis of delivering treatment to the family is a common denominator among the MDFT, MST, FFT, FEI, and ACRA programs. Clearly, family treatment is an important part of increasing adolescent treatment outcomes (see Rowe, 2012). Additional clinical trials are needed to determine which aspects are more efficacious and cost effective.

## What Does Not Work

Two peer-led interventions, the *Multifamily Educational Intervention* (MEI) and the *Adolescent Group Therapy* (AGT), were tested against the efficacy of MDFT treatment intervention described above (Liddle et al., 2001). MEI combined psycho-educational and family interventions for troubled adolescents and their families. The AGT intervention incorporated adolescent therapy groups on stress management, developing social skills, and building group social support. Although each of the adolescents in these three treatment approaches demonstrated some improvement, the adolescents in the AGT and MEI treatments had higher drop-out rates,

higher substance use, lower academic performance, and showed less family functioning compared to MDFT. Given the efficacy of MDFT and the more limited success of AGT compared to MEI, a critical aspect of successful treatment is the concurrent focus on the adolescent and his/her family in individualized-tailored treatment (Liddle et al., 2001).

## Evidence-Based Treatment Interventions in Residential Settings

Among criminal justice system-involved adolescents, national treatment studies show that residential treatment is an effective approach for treating adolescents and reducing their criminality despite long histories of violent crime, child maltreatment, and personal and/or family dysfunctions (see Williams & Chang, 2000).

## What Works

Given the successes of *adult therapeutic communities* (TCs) when combined with aftercare, the TC has been modified to address adolescent-specific needs. Jainchill, Hawke, De Leon, and Yagelka (2000) describe the treatment modifications made to the TC model for adolescents, which included family participation in the process, limited use of peer pressure, a more vertical authority structure, and adolescent clients having less input than their adult counterparts in TC management. The TC model has been shown to be effective for treating adolescents, with decreased drug use across most drug categories, even among high-risk adolescent offenders (Hawke, Jainchill, & De Leon, 2000). Despite these successes, only 31 % of the youth completed treatment and 52 % dropped out (Jainchill et al., 2000). However, it is important to note that treatment entry and treatment retention are significant obstacles in treating adolescents (Dembo et al., 2002), particularly those in residential treatment (Orlando, Chan, & Morral, 2003).

## What Might Work

Although TCs have been the residential treatment modality that has received the most attention in the literature, other residential programs have been evaluated with mixed outcomes. For example, Sealock, Gottfredson, and Gallagher (1997) evaluated a short-term residential program for drug-involved juvenile offenders. The intensive phase of treatment, which included daily communication, regular support group meetings, and family support sessions, was delivered in the community after 2 months of residential treatment. This evaluation demonstrated problems including treatment fidelity and integrity during intensive treatment. Although there were no differences in alleged or adjudicated offenses between aftercare clients and the control group, aftercare youth reported that they committed fewer new crimes and were less likely to report drug use (Sealock et al., 1997).

In another study, adolescents received residential treatment for 10 weeks and participated in social development and substance refusal group sessions followed by 6 months of aftercare (Hawkins, Jenson, Catalano, & Wells, 1991). This study demonstrated an indirect relationship between social skills and drug use at the 1-year follow-up; improvements in male subjects' social skills lowered intentions to use drugs, and decreased intentions to use were associated with positive drug and alcohol outcomes (Jenson, Wells, Plotnick, Hawkins, & Catalano, 1993).

## What Does Not Work

Shorter treatment lengths associated with residential treatment, such as the 2-month Baltimore study described above, have reduced outcomes. National studies have shown that treatment duration and frequency of contact are critical, since adolescents require longer time in treatment than adults (Lipsey, Tanner-Smith, & Wilson, 2010). Defining how much attention, time, and resources should be devoted to these areas is a gap in the literature because few treatment programs earmark monies for evaluation (Dembo et al., 2002). Adolescents are also less likely to complete treatment when they perceive diminished control over treatment entry and level of autonomy while in treatment (Crome, 1999). The literature suggests that adolescent relapse is closely associated with social pressure, so the formation of positive peer groups is important during and after adolescent treatment (Dembo et al., 2002).

## Psychopharmacology and Substance Abuse

Acute drug effects and withdrawal have not received rigorous laboratory assessments in adolescents. Although drug withdrawal symptoms may be less frequent in adolescents when compared to chronic adult users, withdrawal symptoms and syndromes should be assessed and treated the same way as adults (Bukstein, 1997). Table 26.2 presents common drugs of abuse, their effects, and withdrawal symptoms as well as pharmacologic interventions that show promise for treating adolescent substance abuse. Although the use of medications in adolescent treatment is more limited than adult treatment, a basic understanding about the effects, both psychologically and physiologically, that various drugs can have in adolescent treatment is important. Withdrawal from some substances such as alcohol and opioids can require hospitalization initially for safe detoxification.

Overall, one of the most important aspects of successful adolescent treatment involves multiple interventions that target multiple facets of an adolescent's life, growth, and development. These components can include family functioning, peer networks, social competence, problem solving, vocational development, and educational development. Targeted therapy, with family involvement in treatment, has shown promise in promoting successful treatment outcomes for adolescents.

**Table 26.2** Drugs of abuse: acute effects and withdrawal symptoms and promising (and of label in adolescents) pharmacologic treatments (Adapted from Bezchlibnyk-Butler, Jeffries, & Virani, 2007; Kaminer & Marsch, 2011; National Institute on Drug Abuse (NIDA), 2011 by Martin, Sanchez, & Lester, 2012)

| Drug (examples of street names) | Pharmacological effects | Withdrawal symptoms | Management |
|---|---|---|---|
| *Nicotine* | Euphoria, increased heart rate and blood pressure, weak analgesia, nausea and vomiting, increased attention | Anxiety, irritability, decreased concentration, restlessness, hunger, tremor, heart racing, sweating, craving, insomnia, drowsiness, headaches, depression, digestive disturbances | Nicotine replacement therapy including nicotine gum, transdermal patch, inhaler, lozenges, and nasal spray (Hanson, Allen, Jensen, & Hatsukami, 2003)<br>• Buproprion (Zyban, Wellbutrin) (Muramoto, Leischow, Sherrill, Matthews, & Strayer, 2007)<br>• Varenicline (Chantix, Champix) (Gray, Carpenter, Lewis, Klintworth, & Upadhyaya, 2012) |
| *Alcohol* (Booze, juice, brew, hooch) | 100 mg/mL blood alcohol level (BAL): mild sedation and intoxication (slurred speech, staggering gait, slowed reflexes)<br>100–200 mg/mL: impairment of visual-motor skills and integration of sensory information<br>>200 mg/mL: severe intoxication and sedation<br>>450 mg/mL: stupor and coma<br>Personality change (belligerence, irritability, dysphoria, social disinhibition) | Acute: increased heart rate and blood pressure, agitation, tremors, increased reflexes, auditory and visual hallucinations<br>12–14 h: seizures (infrequent) | Withdrawal: hospitalization is often required; sedative–hypnotics/benzodiazepines for withdrawal symptoms<br>*Major health risk:* delirium tremens: hospitalization as this may be life threatening<br>• Disulfiram (Antabuse)<br>• Naltrexone (Revia) and Nalmefene (Revex)<br>• Acamprosate (Campral) (Clark, 2012; Niederhofer & Staffen, 2003a, 2003b) |
| *Sedative/hypnotics* (Xannie bars, footballs, candy) | Somnolence, slurred speech, ataxia, elevated/labile mood, irritability, impaired judgement/cognition/memory, disinhibition | Onset 24 h to 14 days. Includes anxiety, agitation, tachycardia, palpitations, muscle cramps/spasms, confusion, psychosis, hyperpyrexia, seizures | Withdrawal: hospitalization is often required; sedative–hypnotics/benzodiazepines for withdrawal symptoms |
| *Marijuana* (Reefer, weed, bud, blunt, pot, grass, chronic) | Euphoria, relaxation, and disinhibition; impaired problem-solving skills and difficulty organizing thoughts and conversing; impaired cognitive function and motor coordination | Irritability, restlessness, nervousness, loss of appetite, weight loss, insomnia, chills, tremors, and sleep disturbance<br>"Amotivational syndrome"; depression in some | N-acetyl cysteine (Gray et al., 2012) |
| *Stimulants* (amphetamines) (Bennies, black beauties, crosses) | Restlessness, dizziness, tremor, irritability, insomnia, weakness, hyperactive reflexes, headache, chills, flushing, excessive sweating, palpitations, increased blood pressure and heart rate, anorexia, nausea and vomiting, diarrhea<br><br>Acute toxicity: paranoid symptoms and panic, hyperthermia, and seizures | Crash (9 h to 4 days): acute sadness leading to agitation, depression, and drug craving followed by fatigue and exhaustion<br>Withdrawal (1–10 weeks): less drug craving, more normal sleep, depressed or anxious mood<br>Extinction (indefinite): mood normalizes but episodic drug craving persists, especially with certain cues (alcohol use) | Intoxication: Support and benzodiazepines to calm<br>Chronic use: hospitalization is often required because of withdrawal depression |

| Drug | Pharmacological effects | Withdrawal symptoms | Management |
|---|---|---|---|
| *Cocaine* (blow, bump, coke, crack, rock, snow) | Rapid euphoria, mydriasis, sexual dysfunction, hyperpyrexia, additional symptoms similar to stimulants | (See stimulants) | (See stimulants) <br> *Major health risk*: hospitalization for medical conditions if necessary, including cardiac conditions |
| *Opioids/heroin* (Perc 30, Oxy, tabs, china white, white horse) | Analgesia, "rush" sensation followed by relaxation, decreased tension, euphoria, state of gratification, sedation, "deadening of emotions" | Acute: symptoms last 10–14 h (longer with methadone) <br> Yawning, Rhinorrhea, lacrimation, dilated pupils, vasodilation, tachycardia, hypertension, vomiting, diarrhea, tremor, chills, bone pain, abdominal pain and cramps, anxiety and insomnia | Opiate withdrawal is generally not life threatening <br> Treatment options: <br> • Treat acute withdrawal (clonidine, methadone) <br> • Narcotic antagonists to reverse effects of toxicity (naloxone, naltrexone) <br> • Detox or maintenance treatment (methadone, buprenorphine (Woody et al., 2008) |
| *Gamma-hydroxybutyrate* (*GHB*) (G, liquid ecstasy, soap, scoop, goop, liquid X) | Feeling of well-being, lowered inhibitions, sedation, euphoria, amnesia, hallucinations, agitation, aggression | Acute: 1–6 h after cessation, lastly up to 5–15 days <br> Symptoms: nausea, vomiting, insomnia, anxiety, confusion, tremor, tachycardia, hypertension, delirium with auditory and visual hallucinations | No known antidote |
| *Drugs of abuse without withdrawal symptoms* | | | |
| *Drug* | *Pharmacological effects* | *Management* | |
| *Inhalants* (glues, aerosols, solvents) | Disinhibition, disorientation, dizziness, headache, red/watery eyes, respiratory problems <br> High dose: confusion, impaired judgment, memory difficulties, seizure, coma, slowed heart rate <br> *Major health risk*: death via cardiopulmonary arrest or respiratory depression | Acute effects: delirium requiring hospitalization with supportive care | |
| *Hallucinogens* (PCP, LSD, Mescaline, Psilocybin, mushrooms) | Increased blood pressure and heart rate, confusion, sweating, agitation, visual hallucinations, nausea, and vomiting <br> PCP: more likely to cause acute psychotic reactions | Supportive care of excess CNS stimulation, hydration, electrolyte replacement, reassurance, and reduction of threatening external stimuli | |

**Table 26.2** (continued)

| Drug (examples of street names) | Pharmacological effects | Withdrawal symptoms | Management |
|---|---|---|---|
| *MDMA (Ecstasy, E, X, XTC, lover's speed)* | Confusion, depression, insomnia, anxiety, paranoia, hangover 24 h later, increased heart rate and blood pressure, dehydration, heart failure, kidney damage, malignant hyperthermia, bruxism, euphoria, comfort and empathy, connecting with others, decreased inhibitions<br>*Major health risk:* suicidal the following day | Acute intoxication: safe environment with reassurance; benzodiazepines for agitation | |
| *Synthetic cathinones (MDPV, mephedrone)* ("Bath Salts," white lightning, cloud 9) | Tachycardia, hypertension, arrhythmia, hyperthermia, sweating, rhabdomyolysis, seizures, anxiety, panic, agitation, severe paranoia, hallucinations, psychosis, severe aggression, self-mutilation, suicidal ideation<br>*Major health risks:* cerebral edema, stroke, cardiorespiratory failure, myocardial infarction, death | Primarily supportive including IV fluids, IV benzodiazepines, close monitoring, restraints to prevent self-harm and harm to others<br><br>Routine drug screens may not detect MDPV | |
| *Synthetic cannabinoids (K-2,* Spice, Serenity) | Euphoria, anxiety, tachycardia, conjunctival injection. Case reports of chest pain, myocardial infarction, muscle twitching, palpitations, seizures, hypertension, and hallucinations. Synthetic cannabinoids appear to be 4–5 times more potent and appear to have more pronounced and severe cardiovascular adverse effects than traditional marijuana (Gunderson, Haughey, Ait-Daoud, Joshi, & Hart, 2012) | Supportive treatment including cardiac monitoring, benzodiazepine for psychosis | |
| *Anabolic steroids* (Roids, juice) | No intoxication effects, HTN, blood clotting and cholesterol changes, hostility and aggression, acne, liver cysts, premature stoppage of growth | | |
| *Rohypnol (Flunitrazepam)* (Date rape drug, roofies, roach) | Fast acting, produces disinhibition and relaxation of voluntary muscles, causes anterograde amnesia for events that occur under the influence of the drug, alcohol potentiates the effects<br>*Major health risks:* slowed pulse, lowered blood pressure, slowed breathing, tolerance, withdrawal, increased risk of respiratory distress and death with alcohol | Management similar to that of other benzodiazepines | |
| *Dextromethorphan* (Triple C's, Red hot, skittles, robo) | At doses of:<br>• 100–200 mg, mild stimulant effect with hyperexcitability<br>• 200–400 mg, intoxication phase with mild hallucinations<br>• 300–600 mg, depersonalization, altered status and nystagmus<br>• 600–1,500 mg, full dissociative state | Management is primarily supportive measures, although there is a high concern of co-intoxication (acetaminophen, etc.) due to OTC formulations with combined active ingredients | |

## The Prevention of Substance Abuse

Recent literature reviews identified characteristics associated with effective prevention programs that target low- and high-risk youth. While earlier prevention programming focused on single behaviors (Catalano, Hawkins, Berglund, Pollard, & Arthur, 2002), more recent drug prevention interventions focus on schools, communities, mass media, policy changes, and enforcement (see Bauman & Phongsavan, 1999). Prevention interventions are successful when they incorporate broad health-promotion and competence-enhancement strategies, targeting reductions in risk factors and enhancing protective factors. Studies also indicate that prevention must be age-appropriate (Kumpfer & Alvarado, 2003; Nation et al., 2003) and socio-culturally relevant to be successful. Studies have shown that an antidrug message to adolescents is effective when focused on the short-term effects of substance use such as diminished attractiveness rather than the long-term adverse effects, such as poor health (Paglia & Room, 1999).

## What Works

One example of a successful comprehensive prevention program is the *Midwestern Prevention Project* (Pentz, 1998). This project included mass media, school-based skills training, parent programming, school policy changes, and community organization to address changing local ordinances on the availability of alcohol and tobacco products. Adolescent alcohol, cigarette, and marijuana use decreased significantly from baseline to the 1-year follow-up, and reduced rates of cigarette and marijuana use among high- and low-risk youth were maintained over 3 years (Chou et al., 1998).

   Family participation in treatment is another cornerstone of an effective prevention program (Nation et al., 2003). Research consistently suggests that strategies for improved family relations, communication, and parental supervision are critical links to improved outcomes

(Ary et al., 1999). The National Institute on Drug Abuse endorses family interventions/therapy because family relationships are associated with risk factors, mediators, or protective factors in the literature (Swadi, 1999). Programs like *Preparing for the Drug Free Years* (Kosterman, Hawkins, Haggerty, Spoth, & Redmond, 2001) and the *Strengthening Families Program* (Kumpfer & Alvarado, 2003) which target parents or 6- to 10-year-old children of substance abusers and families of young children and preteens are examples of family-based prevention programs. Both of these family preventive programs (1) target reducing familial risk factors, such as poor familial communication, (2) provide parenting skills training, and (3) enhance protective factors associated with teen substance use. An evaluation of the Preparing for the Drug Free Years reported significant reductions in teen alcohol use at 1-, 2-, and 3½-year follow-ups (Kosterman et al., 2001). Other evaluations reported the efficacy of enhanced parenting skills, family conflict, and family communication across ethnic groups, in rural and urban settings (Aktan, Kumpfer, & Turner, 1996).

## What Might Work

A school-based project with multiple prevention activities is called *Project Northland*, which targeted middle school-aged children with four program components—parental involvement, educational activities, peer leadership, and community task force activities—that were implemented in randomized school districts (Perry et al., 1996). By the end of eighth grade, intervention participants showed decreased alcohol use, even among regular drinkers, as well as reduced cigarette and marijuana use. Another experimental tobacco trial called *Program to Advance Teen Health* (PATH) found that a school-based and community-based program was more successful in decreasing tobacco use among teens than school-alone (Biglan, Ary, Smolkowski, Duncan, & Black, 2000). Thus, comprehensive prevention programs, that use consistent messages from multiple social contexts, show efficacy in

delaying adolescent substance use and abuse (Paglia & Room, 1999).

Other studies have shown that sufficient intervention dosage, such as the quantity and quality of intervention contact hours, is a critical part of successful prevention interventions (Kumpfer & Alvarado, 2003; Nation et al., 2003). In a longitudinal, randomized trial of a school-based prevention program, Botvin, Baker, Dusenbury, Botvin, and Diaz (1995) reported that a multicomponent approach in the seventh grade with booster sessions in the eighth and ninth grades reduced alcohol and drug use for the intervention group, with these gains maintained at a 6-year follow-up. Another school-based program, *Project ALERT*, used booster sessions in the eighth grade to reinforce what youth had learned in the previous year and demonstrated, in a large randomized study in 30 schools, that Project ALERT reduced drug use among high- and low-risk students (Ellickson & Bell, 1990). The school-based *Reconnecting Youth program* targeted high school students with behavioral problems who are at risk of dropping out (Eggert, Thompson, Herting, Nicholas, & Dicker, 1994). Reductions in substance use and involvement with deviant peers were found at the follow-up; however, study replication is needed.

## What Does Not Work

Prevention researchers advocate using varied, interactive teaching methods to enhance important life skills, which include assertiveness, communication, and coping (Nation et al., 2003; Tobler et al., 2000). However, educational approaches alone, particularly those that use didactic teaching methods, have demonstrated limited decreases in drug use among youth (Paglia & Room, 1999). In a meta-analysis of 207 school-based programs, Tobler et al. (2000) found that interactive programs and smaller programs were significant predictors of effectiveness. In contrast non-interactive lecture prevention programs, to deliver drug knowledge or affective development, demonstrated small effects.

A popular, but ineffective, prevention program that uses didactic teaching is *DARE*.

Fifteen evaluation studies report that DARE does not have long-term effects on adolescent drug use (Clayton, Leukefeld, Harrington, & Cattarello, 1996). The proliferation of DARE exemplifies the need for theory and research support before program implementation (Nation et al., 2003). Effective prevention programs have been developed and identified, but are rarely implemented (Ennett et al., 2003; Kumpfer, 2002). DARE was revised (i.e., DARE Plus) to include increased parental participation, community involvement, and extracurricular activities, which are key elements of effective prevention programs (Perry et al., 2003).

Because rural and other communities can be in low stages of prevention program readiness (see Plested, Smitham, Jumper-Thurman, Oetting, & Edwards, 1999), prevention practitioners should be sensitive to historical and cultural issues that support drug use and use local information to identify effective and feasible program models and to target local resources.

## Recommended Best Practice

- Practitioners should assess for risk factors associated with drug misuse and abuse. These factors include individual factors like poor school attendance, low grades, delinquency, low self-esteem; family factors such as family disorganization, lack of family cohesion, and poor parenting; peer factors like peer substance use and peer problem behaviors; and social/community factors including inconsistent messages.
- Practice should be grounded in the adolescent etiological literature which embraces the importance of risk and protective factors across individual, family, peers, and community.
- A therapeutic relationship is critical which embraces ongoing assessment and knowledge about drug effects, drug withdrawal, and comorbidity.
- Practitioners should work with each adolescent to select approaches which target maturation and development on attitudes, values, and behavior linked to drug misuse, abuse, and other behaviors.

- Effective intervention programs incorporate multiple approaches including individual and group counseling, behavioral therapy, aftercare, education, case management, and family involvement (see Dennis et al., 2004).
- Effective drug abuse treatment programs should use evidence-based practices. See the National Registry of Evidence-Based Programs and Practices (SAMHSA, 2013), The Department of Justice Crime Solutions (Office of Justice Programs, 2013), and the Agency for Healthcare Research (U.S. Department of Health & Human Services, 2013).
- Adolescents benefit most from treatment with active family involvement.
- The hallmark of effective adolescent prevention programs is tailored interactive education and participation that target multiple behaviors, specific age, and culturally appropriate values.

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# Homicide

## Jill D. Sharkey, Kayleigh L. Hunnicutt, and Michael J. Furlong

## Introduction

When an adolescent commits homicide, communities pause to consider why a youth at a stage of life that should be full of self-discovery, exploration, and opening doors of opportunity for the future felt the need to murder. Reaction to the massacre that occurred at Sandy Hook Elementary School in New Town, Connecticut in December 2012 showcased the impulse to understand these senseless acts. In response, there were calls proposing almost every kind of strategy including establishing a national homicide prevention task force, placing limits on assault-type guns, and placing armed guards in every school in the United States. Yet, within a few weeks after this tragedy, in the United States there were more youth victims or perpetrators of homicide than dead in the New Town shooting. Most of these other homicides involved a single adolescent victim (less than 4 % of all homicides in the United States involve two or more victims; Cooper & Smith, 2011) or perpetrator. These

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homicides did not garner media attention but illustrated that the factors precipitating adolescent homicides are complex and vary from case to case. Because there is so much passion and confusion surrounding juvenile homicides, the goal of this chapter is to contribute to the understanding of this phenomenon by examining trends in adolescent homicide, evaluating what is known about adolescents who commit homicide, and exploring prevention strategies designed to reduce the incidence of homicide and the behaviors precipitating it. This analysis is critical because adolescent homicide has significant implications for society in terms of the care and treatment of its youth and the potential for misplaced investment in strategies that do further harm rather than help.

## Homicide, an International Problem

Homicide is the act of unlawfully killing another human being (this excludes death due to reckless or unintentional acts including manslaughter). Homicide rates by country vary widely and are associated with conditions such as poverty, drug trafficking, and warfare (diminished rule of law), with the highest rates by far occurring in Central American and Caribbean countries (e.g., Honduras, 82 per 100,000) and in sub-Saharan African countries (e.g., Zambia, 38 per 100,000; United Nations Office on Drugs and Crime [UNODC], 2011). Because people and societies differ in

**Fig. 27.1** Annual number of homicides committed by juvenile homicide victims by age of perpetrator (adapted from Puzzanchera & Kang, 2012). *Data source*: Federal Bureau of Investigation. Supplementary Homicide Reports for the years 1980–2010

their perceptions of violence and the factors that precipitate it, this chapter focuses primarily on homicides committed in the United States, which has an overall homicide rate of 5.0 per 100,000—higher than comparable industrial countries (e.g., Australia, 1.2; Canada, 1.8; UNODC, 2011). We focus on homicides committed by adolescents aged 12–17 years.

## Juvenile Homicides and Victimization in the United States

As with homicides in general, the youth homicide rate in the United States exceeds that of all other industrial nations (UNODC, 2011). Between the years 1980 and 2010 there were 42,413 homicides attributed to adolescents aged 12–17 years, with most of these involving youths aged 14–17 years (see Fig. 27.1). During the early 1990s, adolescent homicides increased dramatically in the United States and were predominately committed by males (91 % of the total in the 1994 peak year), using firearms (82 % of the total in the 1994 peak year), and the perpetrator often knew the victim (48 % of the total in

the 1994 peak year; Puzzanchera, Chamberlin, & Kang, 2012).

Between 1994 and 2008, adolescent homicide arrests in the United States decreased from 12.0 to 5.1 per 100,000 (Cooper & Smith, 2011). This decrease of the homicide rate is part of a broader pattern—all forms of violent crimes (e.g., aggregative assault) have decreased, particularly for males (Puzzanchera, 2009) with an overall decline of 81 % in the rate of serious violent crime (from 610 to 160 per 100,000) between 1994 and 2010 (White & Lauritsen, 2012). Despite this welcome trend, homicide is still the second-leading cause of death of youths aged 15–17 years—between 1980 and 2010, 22,378 males and 5,058 females were homicide victims. Between the peak year in 1993 and 2010, there was a 56 % decrease in the annual number of teens aged 15–17 years who were murdered. Finally, by way of perspective on the scope the juvenile homicide problem—between 1976 and 2005, for youths under age 18, females accounted for just 0.8 % and males 9.2 % of the 411,487 known homicides committed in the United States (Heide & Solomon, 2009) (Fig. 27.2).
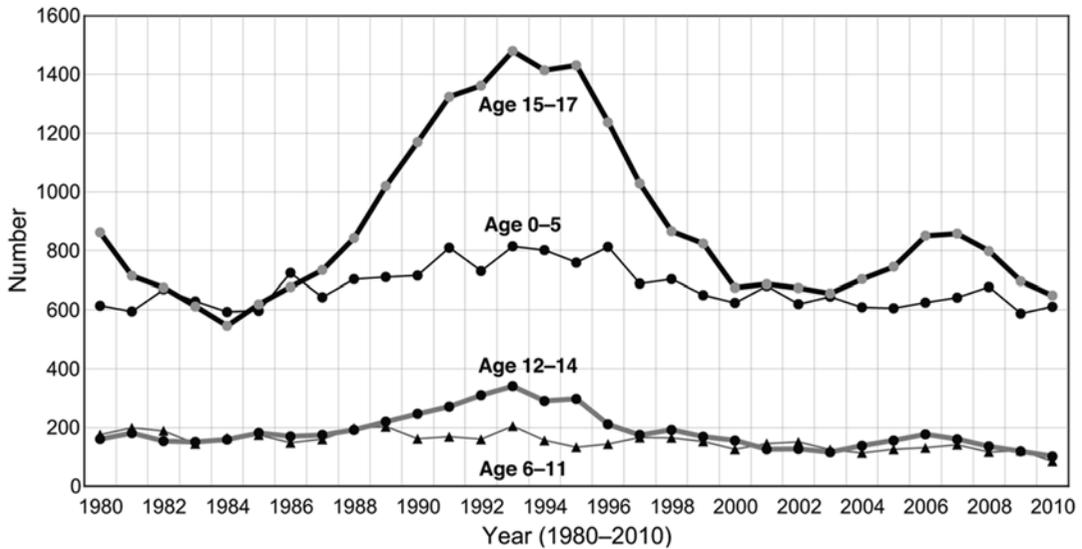
**Fig. 27.2** Annual number of juvenile homicide victims by age of victim (adapted from Puzzanchera, Chamberlin, & Kang, 2012); although not primarily related to juvenile homicide, children ages 0–5 have the second highest annual number of homicide deaths. More females are killed during the first year of life than any other subsequent year across their lifespans. *Data source*: Federal Bureau of Investigation. Supplementary Homicide Reports for the years 1980–2010

## DSM-V Diagnoses and Juvenile Homicide

Early investigations of juvenile homicides pointed to its possible associations with mental illnesses, but were based on small samples, used case study methods, and included cases that were unique to the setting in which the data were collected (e.g., a psychiatric facility; Cornell, 1990). Researchers have subsequently used larger samples in both retrospective and prospective methodology to examine the role of mental illness in juvenile homicide.

## Retrospective and Prospective Studies

Retrospective studies of juvenile offenders reveal that mental illness is not one of the primary factors associated with juvenile homicides. Cornell, Benedek, and Benedek (1987) compared 72 juveniles (aged 12–18 years) charged with murder to 35 juveniles charged with nonviolent larceny and found that only five of the homicide offenders had a recorded psychotic diagnosis—the homicide group was actually *less likely* than the larceny group to have previously received outpatient (22 % vs. 54 %), inpatient (15 % vs. 43 %), or psychoactive medication (11 % vs. 31 %) mental health services, a finding replicated in other studies (e.g., DiCataldo & Everett, 2008; Dolan & Smith, 2001; Shumaker & McKee, 2001).

Prospective studies are more accurate for understanding lifetime prevalence of mental disorders. Wareham and Boots (2012) specifically examined the link between indicators of five DSM diagnoses (affective problems, anxiety problems, somatic problems, attention-deficit/hyperactivity problems, and oppositional defiant problems, as measured by the Youth Self-Report; Achenbach, 1992) and physical violence (not homicide) with data from two waves of the Project on Human Development in Chicago Neighborhoods. The only DSM-oriented problem related to the prevalence of future violence was oppositional defiant problems, which only had a weak effect (OR = 1.05). In another well-known longitudinal study (Pittsburgh Longitudinal Study), Loeber et al. (2005) found that of the

child psychiatric disorders measured, only disruptive behavior diagnosis differentiated between youth who committed homicide and those who committed other violent offenses. Thus, even prospective studies have found little evidence that mental health disorders are the key factors associated with adolescent homicide.

## Recent Consideration about DSM Diagnoses and Adolescent Homicide

It is possible that the DSM has not provided enough distinction between types of mental health disorders to differentiate between youth who commit nonhomicide violent offenses and those who commit homicide. Research has identified links between adolescent antisocial behavior, instrumental aggression, and callousness or psychopathy (Myers & Vo, 2012; Pardini, 2006; Reidy, Shelley-Tremblay, & Lilienfeld, 2011; Smith & Hung, 2012). Kahn, Frick, Youngstrom, Findling, and Youngstrom (2011) conducted an investigation to explore a possible future perspective on the link between mental illness, juvenile violence, and homicide through a revision of the DSM-IV criteria for Conduct Disorder to include a *callous-unemotional* subcategory for the DSM-V. This new category is operationalized as when a youth shows two of these four traits over a minimum of 12 months: shallow affect, lack of concern about poor school performance, lack of remorse/guilt, and lack of empathy (Frick, 2009; Willoughby, Waschbusch, Moore, & Propper, 2011). Kahn et al. (2011) used a community-solicited sample of the general population of youth in Grades 3–7, and others recruited from a community mental health clinic. They found that youths who were rated by teachers or parents as having callous-unemotional traits had higher aggression and cruelty ratings on self, teacher, and parent reports. Additional research is needed to determine if the callous-unemotional subcategory would help explain youth homicide.

Given the evidence of studies examining youth violence and perpetration of homicide, it seems clear that the factors that ultimately lead an adolescent to commit a homicidal act are more complex than individual characteristics including mental health and are embedded within broader transactional-ecological system that includes biological, individual characteristics, family dynamics, and school, and community influences (Wareham & Boots, 2012). In the following sections, we discuss the associations of these factors with adolescence homicide.

## Biological and Genetic Factors

There is substantial research pointing to genetic and biological influences on the development of antisocial aggressive behavior, with these perspectives suggesting various ways in which biological and social factors interact. For example, Liu, Portnoy, and Raine's (2012) research provided an example of a clear biological marker that is being explored for its relation with youth antisocial and conduct behavior problems. Previous research with adults identified a low 2D:4D ratio (the second to fourth finger length digit ratio) as being associated with self-reported anger and aggression and reactions to frustrations in simulation studies (Liu et al., 2012). Although the specific mechanism through which the 2D:4D ratio influences behavior is undetermined, it is known that lower ratios are associated with higher prenatal exposure to testosterone. This prenatal androgen exposure at sensitive periods of fetal development are thought to affect neurological development; for example, increased androgen exposure might affect the development of the amygdala, which, in turn, is associated with reduced conditioning effects of fear and thereby increased potential for involvement in high-risk behaviors. In the Liu et al. study (2012), the 2D:4D marker was measured for Chinese children during preschool and then behavior ratings from parents and teachers were collected for 239 children, who were then in Grade 5. They found that lower (less than 1.0) left-hand 2D:4D ratios were significantly associated (moderate effect size) with parent and teacher ratings of the children's attention problems and aggression behaviors.

Building on research that examined childhood predictors of antisocial and aggressive behavior,

Raine (2002) provided a review of research related to other important biological variables implicated with later youth and adult antisocial behavior and violence: low resting heart rate, prefrontal cortex deficits, and early health factors. Raine (2002) identified resting heart rate as, "the best-replicated biological correlate of antisocial and aggressive behavior in children" (p. 417) because it is one of only two independent predictors of violence (the other being poor concentration; Farrington, 1997). Ortiz and Raine (2004) completed a meta-analysis of 45 studies that examined resting pulse rate with antisocial behavior and found effect sizes of −0.49 (resting) and −0.76 (under stress) and the effect was found for both males and females. In another study, Raine, Venables, and Mednick (1997) found that resting heart rate taken at age 3 years was related to measures of antisocial behavior at age 11 and that low pulse rate was found only in youths with conduct disorders and in no other childhood psychiatric disorder group (Rogeness, Cepeda, Macedo, Fischer, & Harris, 1990). Among the possible, yet to be confirmed, explanations for the robust relations between low resting heart rate and antisocial behavior is that the antisocial behavior is a reaction to under arousal and that youths with a low heart rate are seeking stimulation, which might manifest itself as more frequent involvement in fearless behaviors. Although neuroimaging studies with youths that link frontal lobe deficits with violent behavior have not been done, more traditional neurological assessments have been completed. These studies have found that delinquent and antisocial youths compared to controls do more poorly on tests of attention, self-regulation, and concept formation, which all involve frontal lobe executive functions (May & Beaver, 2014).

## Individual Factors

A robust finding related to youth involvement in antisocial and violent behavior is that these behaviors often emerge out of recognized patterns that first manifest during the preschool

years and escalate into the adolescent years. Loeber and Burke (2011) called these development patterns *pathways* and defined them as, "the orderly behavioral development between more than two problem behaviors with individuals differing in their propensity to progress along the successive problem behavior represented by the pathway during development" (p. 34). These are probabilistic and not deterministic pathways that describe a process or cascading effect (Masten & Tellegen, 2012) of behaviors and life circumstances that increase the odds of a child on that pathway committing violence compared to a child not on the same pathway. Masten and Tellegen (2012) have suggested that problem behaviors are linked and spread over time. However, most individuals on problematic pathways will not commit homicide, but *youths who are not on a delinquency pathway are extremely unlikely to commit a homicide* because their promotive development-enhancing skills and behaviors are also linked and spread over time.

Moffitt (1993) proposed a theory of aggression that explains why only a small percentage of offenders follow a course of violent offending, while most engage in only a few delinquent acts. Research into the nature of reoffending has found that 5–8 % of all first-time offenders go on to commit over half of all violent crimes (Bear, Webster-Stratton, Furlong, & Rhee, 2000; Schumacher & Kurz, 2000). Moffitt has named those youths who have stable aggressive careers *life-course persisters* and those who only engage in one or two acts between the ages of 14 and 17 as *adolescent-limited* delinquents (Bear et al., 2000). Moffitt argued that neurological impairment is a necessary precursor to persistent antisocial activity. Moffitt, Caspi, Harrington, and Milne (2002) conducted a follow-up analysis with the Dunedin longitudinal study, which isolated a group of males who displayed childhood-onset vs. adolescent-onset antisocial behavior, yet had similar patterns of delinquent behavior in adolescence. These youths differed in that childhood-onset (not adolescent-onset) youths had neurocognitive concerns: a difficult temperament, poor parenting, serious hyperactiv-

ity, psychopathy, and violent behavior. In this study, Moffitt et al. (2002) isolated life-course persistent (LCP) and adolescent-limited (AL) offenders and added three more comparison groups: a *recovery* group that met criteria for antisocial behavior in childhood, but did not persist in extreme criminal behavior in adolescence; an *abstainer* group of males that did not engage in antisocial behavior between ages 5 and 18 years; and *unclassified* youths as those who did not fit in any other category. The abstainer group (5 %) was socially awkward and academically inclined in adolescence, but generally well adjusted and successful as young adults. The recovery group (8 %) was protected from crime due to social isolation and other internalizing problems, but its members were likely to experience other significant life impairments, such as mental health problems. The LCP group (10 %) was the most violent and the least likely to turn away from crime. They also had poor work experiences, tended to have substance abuse problems, and were likely to be callous and unavailable partners and parents. The AL group (26 %) had better outcomes than the LCP group on most indicators; however, they still were likely to have some involvement in criminal behavior and to have symptoms of a psychiatric diagnosis.

The biopsychosocial model has been linked to Moffitt's work and further explains the role of individual risk factors in youth violent behavior (Liu, 2011). Rooted in the pre-, peri-, and postnatal periods of a child's life, this model proposes that biological and psychosocial risk factors (maternal smoking, maternal alcohol use, teenage pregnancy, birth complications, maternal depression, malnutrition, lead exposure, head injury, child abuse, and maternal stress) present health risks to the toddler that, if not offset by protective factors (e.g., high-quality prenatal care and strong parent–child bonding), can lead to compromised health, brain dysfunction, and increase the risk of later aggression and violence. The risk factors of inattention, low heart rate, hyperactivity, lower IQ, all of which implicate some underlying biological factors, are associated with increased risk of early onset and life-course involvement in delinquent and violence

behavior. Palermo (2010) and Scarpa and Raine (2007) have suggested that these factors do not cause violence but affect a person's judgment and lead to poor decision making, which predisposes him or her to antisocial, aggressive behavior.

Individual factors related to abuse provide further insight about which individual factors are associated with violent and homicidal behavior. Zagar, Isbell, Busch, and Hughes (2009) examined data from five studies that aimed to understand the risks associated with being abused as a child and which factors predict later violence perpetration, including homicide. Using various comparison groups, the results lent empirical support for a developmental hypothesis of youth homicide similar to the biopsychosocial model. Youths who committed homicide experienced many more illnesses in infancy including jaundice and asthma (4.8 vs. 1.2) and had a higher incidence of low birth weight (76 % for infants later homicidal, 78 % infants later violent–nonhomicide, and 36 % in control group). Of the infants who later committed homicide, 86 % had injuries, burns, poisoning, or fetal substance exposure compared to 25 % of the control group. Zagar, Isbell, et al. (2009) suggested that risks experienced in utero and in early childhood affected neurological functioning, particularly executive functioning, as evidenced by these youths having later more frequent court contacts than was true of nonviolent youths. Frequent court contacts, can be considered a marker for cumulative risk of aggression, inability to inhibit impulses, and a lack of cognitive ability to avoid getting caught, all linked with executive functioning challenges. These results suggest that youth who go on to commit homicide are more likely to have biological and neurological risks that impact their self-control and ability to plan, which in turn increases their risk of committing homicide.

Using the Pittsburgh Youth Study, Farrington, Loeber, and Berg (2012) compared the childhood behavioral indicators of juvenile homicide offenders to a control group of nonoffenders. They found that offenders differed from nonoffenders across a range of behavioral indicators such as: being truant from school, showing cru-

elty to other people, and having positive attitudes toward drug use. However the only four discriminating factors emerging from the multivariate analysis were: school suspension, positive attitude for delinquency, high conduct disorder risk score, and having a disruptive behavior disorder. *Although only 17 % of the youth who had all four behavioral risk factors were subsequently a homicide offender, less that 1 % of the youths with zero risk factors committed homicide.* These four behavioral risk factors were more strongly associated with later homicides than the family and community risk factors that were examined. In summary, the confluence of evidence suggests that individual risks are the most salient factors that predict youth perpetrated homicide vs. any other violent or nonviolent delinquent act.

## Gender

Between 1980 and 2010, males committed 92 % of the homicides by adolescents (aged 12–17

years), a stable pattern for more than 30 years (see Fig. 27.3). Although there is recent interest in and concern about adolescent female involvement in violent acts (e.g., Bennett, Ogloff, Mullen, & Thomas, 2012; Muftić & Moreno, 2010), the juvenile homicide problem in the United States is largely attributable to male associated dynamics and precipitators. When females commit homicides, the victim is more likely to be a family member and the act emerges out of interpersonal conflict and turmoil (Heide, Roe-Sepowitz, Solomon, & Chan, 2012; Loper & Cornell, 1996; Sellers & Heide, 2012). Roe-Sepowitz (2009) compared female ($n=29$) adolescent homicide or attempted homicide perpetrators to their male ($n=107$) counterparts and found that the female offenders were more likely to have higher levels of anger (38 % vs. 19 %), depression/anxiety (41 % vs. 14 %), and suicidal ideation (38 % vs. 11 %). Confirming other findings, the females were less likely than males to murder someone that they did not know (17 % vs. 56 %) and to use a gun (14 % vs. 58 %).
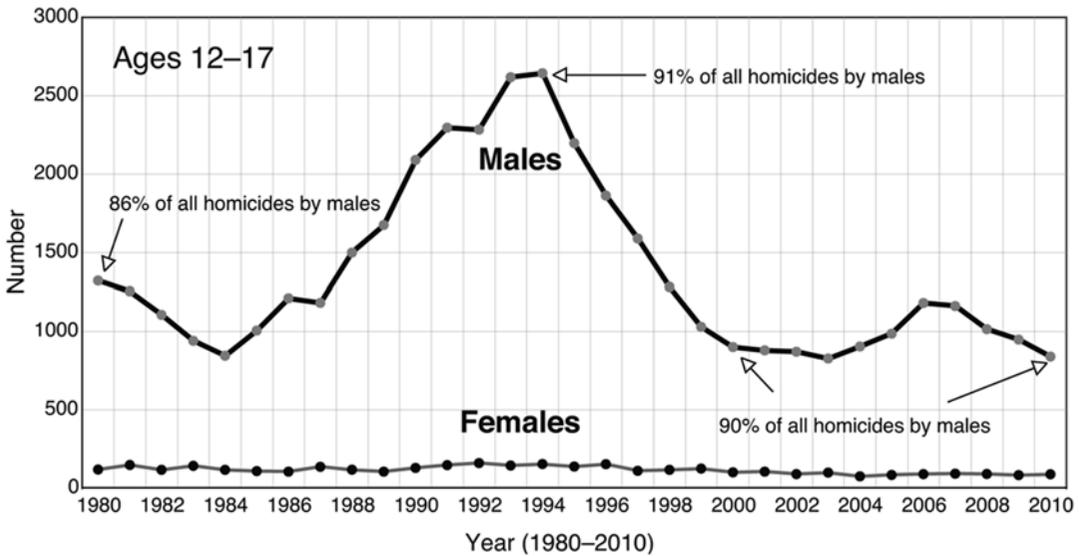


**Fig. 27.3** Annual number of juvenile homicide victims by gender of perpetrator (adapted from Puzzanchera, Chamberlin, & Kang, 2012). *Data source*: Federal Bureau of Investigation. Supplementary Homicide Reports for the years 1980–2010

## Ethnicity

Disproportionate numbers of Black juveniles are involved in homicides as both perpetrators and victims. Black juveniles committed a homicide more often than Whites (25,766 vs. 18,958) over the years 1980–2010. In addition, homicide is the leading cause of death of African Americans aged 15–24 and the second-leading cause of death for Hispanics aged 15–24. Between 1980 and 2010, there were slightly more White (29,178) than Black (27,454) juvenile murder victims. Blacks were the victims of 47 % of all homicides, but they made up only 16 % of the juvenile population (Puzzanchera & Kang, 2012). In 2007, the homicide victimization rate per 100,000 among 10–24-year-olds was highest for Blacks (33.9), followed by Hispanics (11.7), American Indian/Alaskan Natives (8.2), Asian/Pacific Islanders (3.0), and Whites (2.6) (Centers for Disease Control and Prevention, 2011).

## Family Factors

Characteristics associated with neurological impairment such as hyperactivity and poor self-control interact with environmental forces such as poor parenting skills to place a youth at increased risk of antisocial behavior. Based on their examination of five studies focused on understanding which at-risk youth go on to commit homicide, Zagar, Isbell, et al. (2009) argued that violent reactions might be associated with impulses born out of past trauma, poor executive functioning, and lack of support to transform aggressive coping strategies into positive ones. Furthermore, youths with neurological deficits tend not to learn from punishment and consequences are less likely to have a deterrent effect. Instability of home and school environments likely exacerbated rather than repaired these youths' increasing emotional and behavioral challenges.

Specific family risk factors for violence include antisocial and abusive parents, poverty, and parent–child relationships characterized by low supervision, low warmth, and punitive discipline (Lipsey & Derzon, 1998). One review found that a family history of criminal behavior, substance abuse, family management problems, family conflict, and parental attitudes supporting criminal behavior and substance use were related to youth violence (Kashani, Jones, Bumby, & Thomas, 1999). Other familial factors included parental modeling of aggressive behavior, overly harsh parental discipline, insufficient monitoring, and low warmth. Furthermore, adolescents who were abused as children commit more violence than those who were not, and youths growing up in homes with multiple forms of violence (i.e., spousal abuse and child abuse) had higher rates of violent offenses than youths coming from homes with less violence (Christoffersen, Soothill, & Francis, 2007; Kashani et al., 1999).

One aspect of the Farrington et al. (2012) prospective analysis of juvenile homicide offenders in the Pittsburgh Youth Study examined the relations between family and neighborhood risk factors and later homicide. Four risk factors were significantly associated with later homicides when the offenders were compared with controls: living in a disadvantaged neighborhood (OR=3.2), having a young mother (OR=2.5), having an unemployed mother (OR=1.9), and living in low socioeconomic circumstances (OR=2.0). Of note, none of these factors alone was discriminating, but when a youth had 3 or 4 factors present in early childhood they were more likely to later commit homicide compared with those youths who had 0–2 risk factors (OR=5.4). Despite the increased risk for youth with four risk factors, only about 10 % of these youths later committed a homicide, but this compared to close to 0 % of the youths with no risk factors. These risks were associated with a pattern in which homicide was a nearly nonexistent possibility (for those with 0–2 family risks) to where it was an unusual, but possible outcome (for those with 3–4 family risks).

## Parricides

Parricide, murder of a parent or close relative, accounts for about 2–6 % of all homicides annually (Hillbrand, Alexandre, Young, & Spitz,

1999; Myers & Vo, 2012). Using the FBI's Supplementary Homicide Report database Heide and Peete (2007) examined more than 5,000 parricides that took place between 1976 and 1999. Of these parricides, 22 % ($N$ = 1,208) were committed by juveniles 18 years and younger, with 66 % of the juvenile parricide victims being fathers. Offenders are more often White, middle-class males without a history of prior criminal offense. Precipitating risk factors leading to parricide include severe abuse (Myers & Vo, 2012), family, and community ignorance or denial of the abuse, and presence of guns (Hillbrand et al., 1999).

## Social and Community Factors

### Gang Homicides

The Bureau of Justice Statistics reports that from 1993 to 2005 the number of homicides involving gangs dropped at a similar rate as the overall homicide rate (30 %). Not well-recognized, gang-associated homicides account for only a small subset of homicides (6 %; Fox & Zawitz, 2007). Egley, Logan, and McDaniel (2012) provide a summary of data regarding gang homicides in five US cities from 2003 to 2008. According to the National Violent Death Reporting System, gang homicides disproportionately involve adolescents, racial minorities, and males. Gang homicides appeared to be related to a subculture that promotes rapid retaliation for perceived personal wrongs with firearms in public places and were not typically related to criminal behavior (e.g., drug trading). Given these gang-specific homicide circumstances, interventions need to include prevention of youths joining gangs and teaching youth how to resolve conflicts nonviolently (Egley et al., 2012).

### School-Associated Homicides

One of the national indicators of school violence and safety in the United States is the number of homicides that occur at school, which is defined as, "a homicide, suicide, or legal intervention (involving a law enforcement officer), in which the fatal injury occurred on the campus of a functioning elementary or secondary school in the United States" while the victim was on the way to or from regular sessions at school or while the victim was attending or traveling to or from an official school-sponsored event (Robers, Zhang, & Truman, 2012, p. 8). Between July 1992 and June 2010, 826 students aged 5–18 years were counted as a school-associated death (National Center for Education Statistics, 2011). This was 0.3 % of all youth homicide victims during the same time period. As school-associated homicide is such a rare event, it is difficult to study.

Although schools are among the safest public setting for youth, when mass murder killings occur, such as at Columbine High School in 1999 and Sandy Hook Elementary School in 2012, they are intensively covered by the mass media and public fear rises. Archival data collected by the Center for Disease Control provide objective data regarding 125 school-related homicide cases that involved ether a juvenile offender or victim between the years 1994 and 1999 (Kaufman, Hall, & Zagura, 2012). Despite the images and impressions that media coverage of school mass murders convey, 90 % of incidents involved a single victim, 88 % were perpetrated by a male, 70 % involved a victim of the same gender, 62 % were of the same racial-ethnic background, and 71 % were attributed to interpersonal or gang-related disputes. Multiple victim incidents accounted for only 26 % of homicides committed by Whites, but only 7 % by Blacks and 4 % by Latinos; hence, they are unusual but troubling events.

### Firearms and Juvenile Homicide

A review of the literature on firearm availability and homicide found that individuals in households with guns are at a markedly higher risk for homicide victimization, especially from family, intimates, and acquaintances (Hepburn & Hemenway, 2004). DiCataldo and Everett (2008) found that juveniles who committed
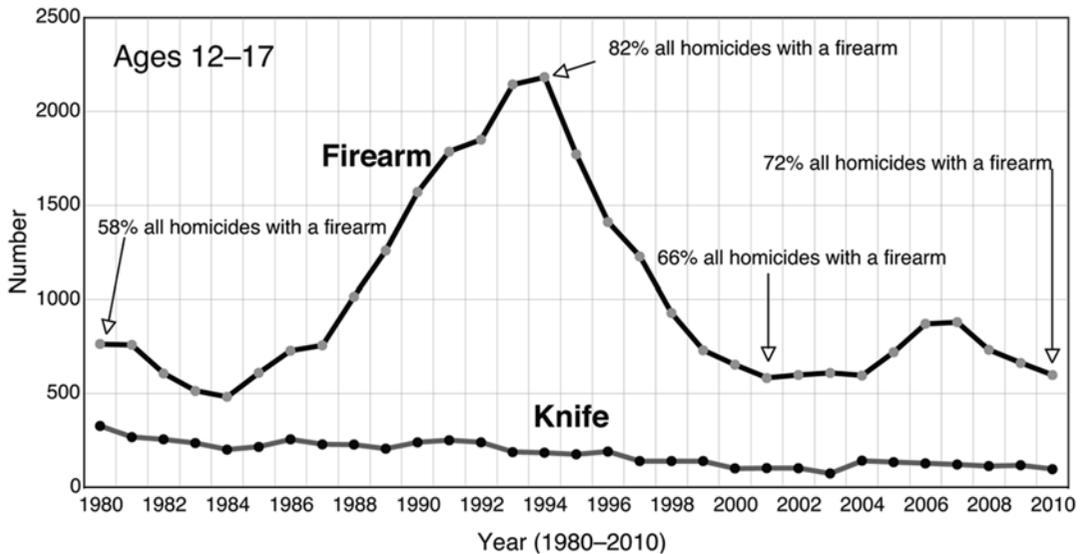
**Fig. 27.4** Annual number of homicides committed by juvenile homicide victims by gun or by knife (adapted from Puzzanchera & Kang, 2012). *Data source*: Federal Bureau of Investigation. Supplementary Homicide Reports for the years 1980–2010

homicide differed from juveniles who committed other violent crimes in that they were significantly more likely to regularly keep a gun in their home and to have committed an offense using a gun. The mere presence of the gun increased the odds that a homicide would occur even though the youth who ultimately committed homicide had lower risk profiles that the non-homicide comparison youths in this study. The key role of firearms in juvenile perpetration of homicides between 1976 and 2005 is demonstrated in Fig. 27.4. Although the number of non-gun weapons used by adolescent to commit murder was stable and declined over the entire period, the proportion of homicides committed with a gun increased dramatically in the mid-1990s and has declined since then, mirroring the overall homicide pattern. Within the United States, even after controlling for poverty, unemployment, alcohol consumption, urbanization and crime levels, for both genders, and for age, states with more guns experience significantly higher homicide rates (Hepburn & Hemenway, 2004). Easy access to firearms in combination with positive attitudes toward guns (Downey, Zun, Burke, & Jefferson, 2013) and their pivotal

role in homicides makes gun accessibility an important issue in considering how to reduce homicide rates.

## Alcohol and Substances

A consistent research finding implicates substance use to juvenile homicides as illustrated by DiCataldo and Everett's (2008) report that juveniles who commit homicide were more likely to have been abusing substances at the time of the murder as compared with nonhomicide violent offenders. This finding is the same as that found by Dolan and Smith (2001) in a British sample of juveniles who committed homicides, as they were more likely to have used alcohol at time of the offense in comparison to adolescents who set fires. In addition, an examination of the Pittsburgh Youth Study found that a substantial number of youths report being under the influence of a substance when committing illegal acts (White, Tice, Loeber, & Stouthamer-Loeber, 2002)—42 % percent when engaged in gang fighting, 37 % when they attacked another person, and 49 % when strong-arming another person. Aggressive offenses were

more often related to alcohol than marijuana use. Heavy alcohol and drug users were more serious offenders, more impulsive, and had more deviant peers (White et al., 2002).

## Exposure to Violence

Exposure to community violence increases children's aggressive behavior and promotes pro-aggression normative beliefs (Guerra, Huesmann, & Spindler, 2003). The risk for criminal offending among young adults increases with recent exposure to community violence along with a history of receiving traumatic news, direct victimization in the community, and associations with deviant peers increases (Eitle & Turner, 2002). Once juveniles are engaged in a social context where crime and violence is prevalent, it also increases the odds of future exposure. For example, Farrington et al. (2012) compared the number of prior arrests for juveniles who committed homicides with those who did not. They found that of the 189 boys in the Pittsburgh Youth Study who had five or more juvenile arrests, 10 % (19) later committed a homicide, which contrasted with just 1 % (12) of the other 1,254 youths in the study.

## Evidence-Based Treatment Interventions

Though researchers have recently been calling for more empirically-based interventions for juvenile offenders (e.g., Karnik & Steiner, 2007), the very small overall number of juveniles who commit homicide each year presents difficulties in tailoring and evaluating treatments specific to this small demographic. In addition, researchers often note the multitude of challenges in gathering and evaluating the effectiveness of treatment for violent offenders in general (Byrne & Pattavina, 2006; Zagar, Busch, & Hughes, 2009). Thus, evidence-based treatment interventions specifically for juveniles who commit homicide do not currently exist. As will be discussed further below, most often youth are sentenced to a correctional facility.

## What Works

When it comes to examining what might work to prevent juvenile homicide, this quest is complicated by the fact that these acts occur in differing social contexts and have different motivations. For example, DiCataldo and Everett (2008) found that after a detailed review of homicides committed by juveniles in Massachusetts, there was no single predominant precipitating event, but included homicide in the acts of: committing a felony, revenge for perceived harm, preemptive response to a perceived threat, and even related to a sexual offense. Hence, no single strategy or intervention has been designed to address the myriad of factors that precipitate or increase the risk that a homicide might occur. For this reason, adolescent homicide prevention strategies typically take a comprehensive, whole-child approach that simultaneously seek to build the social capital a youth needs to refrain from violence that leads to homicide.

## What Might Work

With respect to youth violence, Bilchik (1999a, 1999b) emphasized the importance of transitioning from individual-focused programs to broad-focused programs because homicide results from the interaction of individuals and life context factors—programs should not only hold youths accountable for crime, but also help change their path towards a positive direction (Bilchik, 1998). This occurs through his three stated goals for the juvenile justice system: (a) accountability; (b) enabling capability, productivity, and responsibility; and (c) protecting the community. Recent research is generally supportive of Bilchik's assertions. For instance, criminal justice stakeholders and researchers alike have shifted their focus from a punishment/deterrence model to one of rehabilitation and treatment-centered approaches of psychopathology (e.g., Karnik & Steiner, 2007). Rehabilitation, treatment, and offender change become even more prudent issues when considering offender populations that will be released back into society at some point in the future (Byrne & Pattavina, 2006;

Byrne & Roberts, 2007). Furthermore, offenders usually return to resource-deprived communities that do not offer the treatment services that are needed, which has been found to be significantly associated with increased risk of violent crime recidivism (Mears, Wang, Hay, & Bales, 2008). In general, this underlying theme emphasizes the importance of proactively treating offenders while they are under the supervision of the criminal justice system.

In addition, preliminary research supports Bilchik's notion of providing a range of treatment services. Research with juveniles who have committed serious or violent crimes suggests that providing comprehensive treatments (i.e., multisystemic therapy (MST)) for juvenile offenders is significantly more effective in reducing recidivism than individual therapy alone (Sawyer & Borduin, 2011). A review of interventions for juvenile offenders supported a multimodal approach as having the best outcomes (Karnik & Steiner, 2007). Some researchers have specifically suggested including substance abuse treatment and aftercare treatment to offenders who will be re-entering society (e.g., Wexler, 2003). Preliminary research on an offender reentry program in Boston has produced promising results to this end—offenders who participated in a transition program offering a variety of services to acclimate offenders to the community experienced significant reductions in overall and violent recidivism compared to controls (Braga, Piehl, & Hureau, 2009).

## What Does Not Work

Most often juveniles who murder are sentenced to severe penalties such as life in jail or the death penalty (Whitaker, 2000). These youth generally do not receive the mental health, psychoeducation, and social services they require (Crespi & Rigazio-DiGillo, 1996). Related to society's reaction to such a heinous crime, there is often no differentiation in sentence based on type of crime committed, even when circumstances differ drastically from retaliation against an abusive parent to firing a gun on a group of school children.

Sentencing juveniles to prison terms without treatment ignores the underlying problems that the juvenile is experiencing related to and leading up to the commission of their crime, and has consistently proven to be ineffective and costly. Research has failed to document cases where positive offender outcomes have been significantly related to prison sentences absent subsequent treatment (Byrne & Roberts, 2007). Conversely, persistent confinement in juvenile facilities is itself a significant predictor of later committing murder (DeLisi, Hochstetler, Jones-Johnson, Caudill, & Marquart, 2011).

Prison also often serves as a venue where inmates experience and commit a variety of hateful violent crimes (Whitaker, 2000). Arguments for life imprisonment include protecting society from harm and deterring others from committing a similar crime. Though the increase in numbers of individuals incarcerated has been dramatic, the crime rate has not gone down. Furthermore, punishment is applied disproportionately—race of the victim appears to affect the decision to apply the death penalty. Though African Americans account for half of all murder victims, only 11 % of executed murderers from 1977 to 2000 had victimized an African American, whereas 85 % murdered a European American.

The future direction of reform and punishment for juvenile murderers may be on the cusp of change. In 2005 the US Supreme Court banned the death penalty sentence for individuals who committed their crimes as juveniles, ruling that the method of punishment is cruel and unusual for this particularly young and underdeveloped population (Roper v. Simmons, 2005). Several years later in 2010 the Supreme Court ruled that juveniles convicted of nonhomicide crimes could no longer receive a sentence of life without the possibility of parole (Graham v. Florida, 2010), and again in 2012 the Supreme Court heard arguments to either (a) abolish the sentence of life without the possibility of parole for juvenile murderers or (b) leave the sentencing up to the discretion of the court and to be decided on a case-by-case basis (Miller v. Alabama, 2012). That summer, the Court ruled that it was unconstitutional for states to mandate life without the

possibility of parole for juveniles who commit homicide. This leaves the ultimate decision of juvenile homicide offenders' fates in the hands of the jury, who will instead have the opportunity to consider individual characteristics of the juvenile and the crime committed when recommending sentencing. The effects of this series of rulings remain to be seen.

## Psychopharmacology and Adolescent Homicide

Given that those some who commit homicide may have comorbid mental health disorders, medication is important in the managing of symptoms. In looking at the intersection of violence and mental illness, researchers note that co-occurring substance abuse is perhaps the most important mechanism linking the two (Swartz et al., 1998). They note that the combination of medication noncompliance and substance abuse was the strongest predictor of serious violent behavior in an adult psychiatric population (Swartz et al., 1998). In their examination of Prozac in the reduction of aggressive behavior, Barratt and Slaughter (1998) found that it significantly reduced verbal and indirect impulsive aggression against objects, but it did not reduce aggression toward others. More recently, a 2008 literature review on psychopharmacology interventions for physical aggression revealed mixed findings for the use of olanzapine, divalproex sodium risperidone, methylphenidate, and antipsychotics with adolescents (Barzman & Findling, 2008). The authors suggested that outcomes varied by diagnosis and symptoms, and revealed more favorable outcomes for risperidone. Others have suggested that empirical evidence points toward a comprehensive treatment program that includes, but not solely depends on, medications for treating aggression in children and adolescents in particular (Connor, Boone, Steingard, Lopez, & Melloni, 2003). Overall, a general consensus has not converged regarding which medications—if any—would alleviate aggressive symptoms in children and adolescents.

## The Prevention of Homicide

In a time of continuing concern about serious and chronic youth violence, it is crucial to identify general treatment approaches as well as prevention programs that show evidence of success and promise. Identifying and targeting developmental pathways leading towards violence and homicide is particularly helpful in guiding assessment and prevention efforts (Loeber & Burke, 2011). Research in this area has attempted to pinpoint common elements within successful programs that can reduce serious and chronic youth violence (e.g., Catalano, Loeber, & McKinney, 1999; Centers for Disease Control and Prevention, 2000; Tolan & Guerra, 1998). These programs focus on reducing identified risk factors that contribute to aggressive and violent behavior and serious delinquency in their efforts to prevent homicide.

### What Works

Successful prevention programs target multiple risk factors that affect violent youth and become obstacles toward decreasing their maladaptive behavior (e.g., poverty, serious illness, poor parenting, poor academic achievement, and gang affiliation). Effective delinquency prevention programs typically range from 2 to 5 years in length. Longer intervention programs affect multiple predictors of delinquency, whereas brief interventions might only have time to affect single risk factors (Yoshikawa, 1994). Another aspect of successful programs is that they maintain a level of cultural sensitivity in the support services they provide to delinquent youth and their families. By maintaining this cultural competence, the needs of all youth and families considered at risk are addressed. A third aspect of exemplary programs is that they include program evaluation. Studies to evaluate program effectiveness must examine how the interventions were implemented and adequately examine their effectiveness in addressing the needs of high-risk populations (Foote, 1997; Tate, Reppucci, & Mulvey,

1995; Tolan & Guerra, 1998). Finally, successful interventions target risk factors that individual youth encounter in a variety of settings (e.g., within the individual youth, within the youth's close interpersonal relationships, within proximal social contexts, or within greater societal macrosystems; Fraser, 1996; Tolan & Guerra, 1998), and address differences in the needs of juvenile offenders based on their age range (Heide, 1993). More recently, Zagar, Busch, et al. (2009) suggested that prevention programs should engage the juvenile in high dosages of structured treatment for at least 6 months and proceeded by multiple years of follow-up and interventions accompanied by high levels of supervision.

## Social Network-Focused Prevention Programs

A well-researched example of a cross-context intervention is MST developed by Henggeler and colleagues (1999). MST focuses on familial problems, including difficulties experienced with parenting techniques and family cohesion and organization. It can be considered a prevention program when it is used to intervene with youth who show signs of chronic, violent antisocial behavior in order to prevent future homicide. MST draws upon validated treatment strategies such as strategic family therapy and cognitive-behavioral therapy. The program targets interpersonal, familial, and extra-familial factors, which can contribute to serious violent and delinquent behavior. MST's success in decreasing serious antisocial behavior comes from its highly individualized and flexible interventions. The program uses an individualized treatment-planning strategy to address the unique needs and circumstances of each adolescent and his or her family. When compared to individual therapy, MST has been found to be more effective in decreasing antisocial behaviors and adjustment problems and has established both short- and long-term success with chronic, serious and violent youth (Borduin, 1999). Longitudinal studies have also emerged, demonstrating the effectiveness of MST in reducing crime (i.e., lower rearrests, recidivism rates; Klietz, Borduin, &

Schaeffer, 2010; Sawyer & Borduin, 2011) as well as taxpayer costs (Klietz et al., 2010). Juvenile offenders who committed serious and/or violent crimes were mandated into either individual therapy or MST and were followed for 13.7 and 21.9 years, respectively (Klietz et al., 2010; Sawyer & Borduin, 2011). Outcomes indicated that benefits favored MST across both long-term time frames and included reductions in recidivism and rearrest rates.

Another social context program with evidence for success is called the SNAP (Stop Now And Plan) Under 12 Outreach Project and is designed for children under the age of 12 that have been identified as antisocial (Koegl, Farrington, Augimeri, & Day, 2008). The program entails 12 weeks of community-based treatment groups for children and their parents, as well as additional services that can be received as needed (i.e., family therapy, individual befriending, tutoring). The SNAP group components focus on: cognitive-behavioral and problem-solving techniques in the children's group, and child management skills in the parent's group. Research indicates that, compared to controls, parents of children who attended the SNAP Under 12 Outreach Program reported significant decreases in delinquency and major aggressive behavior of the children from before to after participating in the program. In addition, the more child SNAP groups that were attended, the greater the observed decrease in these behaviors was reported.

## Youth-Focused Treatment

Programs that focus on particular risk factors that impact youth (e.g., difficulty with self-control and problem-solving skills) are often based on a cognitive-behavioral approach. This approach seeks to decrease antisocial and violent behavior by changing the social cognitive mechanisms linked with such behavior. An example of such an approach is the Viewpoints Training Program, which focuses on improving social problem-solving skills, increasing self-control, changing beliefs and attitudes about violence, and enhancing perspective taking (Tate et al., 1995; Tolan & Guerra, 1998). This 12-session, small-group training program attempts to teach youth appro-

priate responses to conflict. Guerra and Slaby (1990) examined the effectiveness of this program with 120 juvenile offenders randomly assigned to the Viewpoints program, an attention-control group, or a no-treatment group. Their results showed decreases in aggressive as well as impulsive behavior, with increases in problem-solving skills for the participants of the Viewpoints program.

Another youth-focused approach is strictly behavioral, which focuses on changing behavior through such techniques as direct reinforcement, contingency contracting, and modeling. The volunteer Buddy System program is an example of an individualized behavior modification program that partners youth with volunteers to address a range of academic and behavioral problems (Catalano et al., 1999). With the assistance of a volunteer, the youth participates in a variety of weekly behavioral support activities. In addition to 12 h of initial training, the mentors later attend biweekly training sessions on behavior management throughout the duration of the program. These volunteers work with their assigned youth, submit reports on their youth's behavior, complete weekly logs, and collaboratively complete weekly assignments (Catalano et al., 1999). Recently, a 35-year follow-up was conducted on participants in the Buddy System program. Results were favorable for individuals with prior arrests prior to entering the program; these individuals experienced significantly fewer arrests in adulthood compared to controls (O'Donnell & Williams, 2013). The individuals without arrests prior to entering the program experienced significantly higher arrest rates than controls; this differential effect may suggest that the most efficacious uses of the Buddy System are with adolescents already involved in the criminal justice system.

## Social Context Interventions

Other general strategies to prevent adolescent violence and homicides include those interventions that focus on the adolescent's immediate social setting. These programs seek to transform aspects of the youth's social context that encourage or reinforce serious violent or antisocial behavior. An equally important emphasis is on identifying those social influences that interfere with the development of more positive behaviors (Tolan & Guerra, 1998). These programs are community-based and involve schools, neighborhoods, and communities. One such program, which has been recognized as exemplary by the US Office of Education, Safe and Drug-Free Schools Expert Panel, is Positive Action Through Holistic Education (PATHE; Gottfredson, 1986). The program's main objective is to improve the school environment so as to enhance students' attitudes toward school, improve academic achievement, and consequently reduce juvenile delinquency and violence. Teams of teachers, school staff, students as well as community members implement school improvement programs. These teams participate in ongoing training in and collaborative review of school curriculum and discipline policies. The program promotes various academic, school climate, and career-oriented innovations, and provides counseling and academic services for students demonstrating particular academic or behavioral needs. High school students involved in the PATHE program have demonstrated decreases in delinquency, drug use, school suspensions, and school discipline (Catalano et al., 1999). A related exemplary program is Project Care. This program uses classroom management and cooperative learning techniques to reduce the incidence of delinquent behavior within a middle school setting (Catalano et al., 1999). Teams of teachers, administrators, school staff, and parent volunteers are involved in the program. After 2 years of implementation, students reported a significant decrease in delinquency, while teachers found improvements in classroom discipline (Gottfredson, 1987).

Other community and neighborhood programs with promising results have sought to increase the motivation of high-risk students to attend school and participate in prosocial community activities (Tolan & Guerra, 1998). The Big Brothers, Big Sisters of America (BBBSA) mentoring program serves at-risk youth from 6- to 18-years-old who are from single-parent homes. The goal of the program is to provide the youth with a consistent and stable

relationship (Muller & Mihalic, 1999). An adult volunteer and child meet weekly for 3–5 h over the course of a year or more. A professional case manager outlines goals identified in an initial interview with the child or adolescent that will guide the activities of the relationship. Goals can include developing stable relationships with adults, siblings, parents, and peers as well as improving school attendance, academic performance, and personal hygiene. These goals are developed into an individualized case plan. An 18-month study comparing 500 youth participants of BBBSA with 500 youth randomly assigned to a control group (youth not matched with a BBBSA mentor) found that youth participants were less likely to use drugs or assault another child or adult. BBBSA youth improved their school attendance, grades, and their relationships with family members and peers (McGill, Mihalic, & Grotpeter, 1998). Another study of 160 first- through sixth-grade mentees in the BBBSA program revealed significant overall increases in self-esteem, getting along with peers, liking school, and better classroom behavior (Kolar & McBride, 2011). A similar mentoring program in Hawaii, The Buddy System, also uses mentoring relationships with at-risk youth to promote appropriate behavior and reduce truancy (Catalano et al., 1999). Mentoring programs, which expose at-risk youth to positive adult role models, serve as a key protection against future violence and antisocial behavior (Centers for Disease Control and Prevention, 2000).

## What Might Work

The Interdisciplinary Group on Preventing School and Community Violence (2013) recommended a balanced approach to preventing violence in school and community contexts that includes a variety of efforts addressing physical safety, educational practices, and programs that support the social, emotional, and behavioral needs of students.

*Communication* about potential risks is a key factor in preventing youth violence.

Comprehensive analyses by the US Secret Service, the FBI, and numerous researchers have concluded that the most effective way to prevent many acts of violence targeted at schools is by maintaining close communication and trust with students and others in the community, so that threats will be reported and can be investigated by responsible authorities (Reddy et al., 2001). Concerned students, parents, educators, and stakeholders in the community should attend to troubling behaviors that signal something is amiss, particularly if a specific threat of violence becomes known (Nekvasil & Cornell, 2012). Channels of efficient, user-friendly communication need to be established and maintained, and can be facilitated when community members, students, and staff members feel comfortable bringing concerns regarding safety to the attention of school administrators.

*Connectedness* refers to what binds people together as families, friends, and communities. All students need to feel that they belong at their school and that others care for them. Similarly, local neighborhoods and communities are better and safer places when neighbors look out for one another, are involved in community activities, and care about the welfare of each other. Research indicates that those students most at risk for delinquency and violence are often those who are most alienated from the school community (Henrich, Brookmeyer, & Shahar, 2005; Resnick, Ireland, & Borowsky, 2004). Schools and Communities need to reach out to build positive connections to marginalized students, showing concern, and fostering avenues of meaningful involvement as a violence prevention strategy (Hall, Simon, Lee, & Mercy, 2012).

*Support* is critical for effective prevention. Many students and family members experience life stresses and difficulties. Depression, anxiety, bullying, incivility, and various forms of conflict need to be taken seriously. Every community should create environments where adolescents and adults feel emotionally safe and have the capacity to support one another (Modzeleski et al., 2011). Schools must have the resources to maintain evidence-based programs designed to

address bullying and other forms of student conflict. Research-based violence prevention and related comprehensive support programs should be offered, following a three-tier approach, operating at universal (schoolwide), targeted (for students who are at risk), and intensive (for students who are at the highest levels of risk and need) levels (see Centers for Disease Control and Prevention, 2007).

## Threat Assessment

School officials have recently begun reconsidering their methods for assessing safety and within the school environment (Allen, Cornell, Lorek, & Sheras, 2008; Nekvasil & Cornell, 2012). One relatively new method being considered is that of a problem-solving threat assessment approach (Zagar & Grove, 2010). School and community authorities investigate all reports or observations of a threat when using a threat assessment approach (Borum, Cornell, Modzeleski, & Jimerson, 2010). Threats that are determined to be real are further explored in content and context, and are attempted to be resolved with each student involved. The threat assessment approach is incompatible with the widely-implemented zero-tolerance policy in schools (Skiba & Knesting, 2011); the idea is to address the underlying student problems and utilize punishment (e.g., suspension, expulsion) as a last resort and only in cases identified as "true" threats. Adopting this problem-solving approach may be integral in preventing adolescent homicides; this method involves exploring every threat seriously, and attempts to resolve perceived student distress and conflict before the student situations turn violent and/or lethal (Allen et al., 2008).

## Common Sense Gun Safety

Gun control is a hotly debated topic in the United States, the only industrialized nation to allow the private possession of handguns (Sherman et al., 1998). In this chapter, we have reviewed the association between access to firearms and homicide. Recent research has found evidence for a stepping stone model to explain youth gun carrying (Spano, Pridemore, & Bolland, 2012). That is,

gun carrying is a step along a pathway of aggression and violent behavior that escalates the odds of serious injury and death when a confrontation occurs. Most gun violence occurs in areas where gun possession is prevalent (Sherman et al., 1998). Promising gun control programs include virtual bans on private handgun ownership and bans on the sale of new assault weapons, bans on high-caliber guns, ammunition controls, waiting periods for ammunition, and national one-gun-a-month laws (Sherman et al., 1998).

## Law Enforcement

With regard to the police's role in preventing homicide, one study found that when police adopted a problem-oriented philosophy that sought involvement, support, and approval from the residents of the community, there was a decrease in both the nature and frequency of homicides (White, Fyfe, Campbell, & Goldkamp, 2003). These decreases were especially noted in those homicides that were directly targeted by the intervention (i.e., homicides that occur outdoors, gun homicides). Moreover, reductions were also noted in other types of violence (i.e., robbery, aggravated assault, and rape; White et al., 2003). Likewise, the Hollenbeck initiative in Los Angeles sought to bring together law enforcement and community-based and faith-based organizations (Tita et al., 2003). Following the initiative, decreases were noted in violent crimes, gang crimes, and gun crimes. A few areas of improvement were noted including that the intervention never developed dynamically or in response to changing needs, and that the project did not succeed in getting the working group participants to view the intervention as its own (as opposed to the study's) and seek to continue it (Tita et al., 2003).

## What Does Not Work

Ineffective programs fail to take a holistic and contextual approach. For example, traditional psychotherapy, psychiatric hospitalization, institutional placement, and psychopharmacological

management have not shown consistently to prevent adolescent violence or homicide. Group therapy, although considered to be a more cost-effective approach in comparison to individual therapy, has no evidence regarding its effectiveness in reducing antisocial or violent behavior in at-risk youth (Tate et al., 1995; Tolan & Guerra, 1998). Zero-tolerance approaches to school discipline are also ineffective; rather than deter inappropriate behavior or teach desirable alternatives, exclusionary practices exacerbate behavior problems for youth already at-risk, which can lead to their involvement in the juvenile justice system (Sharkey & Fenning, 2012). Also, social casework, which combines individual counseling with close supervision and coordination of social services, has not proven to be effective in preventing serious antisocial and violent behavior (Tolan & Guerra, 1998). In addition, state curfew ordinances, designed to reduce juvenile crime, have also been found to be ineffective in lowering homicide victimization rates; although juvenile crime rates dropped during curfew hours, they were accompanied by increases in crime rates during the afternoon hours; juvenile crime usually peaks around 3:00 p.m. on school days (Fried, 2001).

## Summary and Recommendations

Adolescent aggression and homicide is disturbing because when it occurs in any society, it suggests that some aspects of the youth development and socialization processes have gone awry. As emphasized in this chapter, a holistic, ecological approach seems to be the current best strategy to draw upon to develop an understanding of the factors that precipitate adolescent homicides and the approaches needed to prevent its occurrence. Homicide is promoted, in part, by basic beliefs and societal values surrounding violence as a means to solve problems. Owning guns is seen as a right, revenge is seen as being appropriate for "evening the score." In addition, homicide may be viewed as one possible outcome of a developmental trajectory that begins in early childhood

(Loeber & Burke, 2011; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). Factors that maintain this trajectory need to be examined for diverse populations of youth, such as females and various cultural groups, within the societal values that sustain aggression as a problem-solving strategy.

From what is currently known about homicidal behavior, it is clear that multiagency, multisystematic, and school community options need to be available for those youth showing multiple risk signs. Efforts to prevent homicide need to be invested in providing a comprehensive, coordinated continuum of services necessary to respond to youth needs at every level. Successful programming will involve multiple strategies. At the first level, the targets are community-wide beliefs and values. Expectations of appropriate behavior must be made explicit and demonstrated by adult role models. At the second tier, communities and schools in collaboration must recognize that adolescent violence cannot be prevented unless the youths in greatest need are identified and helped early on as they first enter developmental pathways that might lead to violence. Efforts are needed to purposefully monitor and screen all youths for possible indicators of being on such developmental trajectories (Stoddard, Henly, Sieving, & Bolland, 2011). Of course, the motivation to screen for risk and promotive factors associated with positive psychological and social well-being are not just to prevent homicides, but to help all children to be successful in life and have thriving development. Third, when universal screening is carried out, comprehensive community services must be made available for all youth in need of support where early intervention is key. Fourth, those youth most at risk for homicide must be provided with more intensive services. These youth are likely to experience extraordinary life challenges from which few children should be expected to thrive without support. The successes of such community programs over the past 15 years to substantially reduce the adolescent homicide rate supports efforts to continue their refinement and expansion in order to kindle hope for the elimination of adolescent homicide.

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# Gambling

## Tobias Hayer and Mark D. Griffiths

## Introduction

Gambling is a ubiquitous activity encountered in almost all cultures and across all developmental periods from childhood on (Meyer, Hayer, & Griffiths, 2009). Regardless of the concrete sociocultural or jurisdictional context, international study findings have consistently shown that gambling is part of the life experiences of most young people either actively or passively (Hayer, 2012). Despite the implementation of legal age restrictions, the majority of youths engage in commercial gambling (e.g., lotteries, scratchcards, and electronic gambling machines) (Volberg, Gupta, Griffiths, Ólason, & Delfabbro, 2010). In addition, self-organized forms of gambling such as poker, sports betting, and betting money on skill games are popular among adolescents. Similar to drug consumption, gambling activities are highly reinforcing, mainly because

tof the thrill they provide (Griffiths, 2011). For young people in particular, the option to "easily" win money represents a major incentive.

While for most adolescents gambling is an enjoyable and harmless activity, for a small minority gambling can become both addictive and problematic with severe negative (psychosocial and financial) consequences (Volberg et al., 2010). The aim of this chapter is to provide a broad overview about risk (and protective) factors of adolescent problem gambling. It also discusses promising prevention activities and treatment interventions for this age group. To avoid misunderstandings with regard to the nomenclature, the term "problem gambling" is used throughout this chapter to encompass all gambling behaviors associated with harmful effects including less serious (mild to moderate, subclinical) problems.

## DSM-5 and Prevalence Rates

"Pathological gambling" was introduced as a mental disorder in the third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) in 1980. In DSM-IV, pathological gambling still appeared in the category "Impulse-Control Disorders Not Elsewhere Classified" along with other disorders such as kleptomania, pyromania, and trichotillomania (American Psychiatric Association, 1994) although only little evidence exists with regard to

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the commonalities of these conditions. The DSM-IV criteria for pathological gambling highlighted symptoms such as loss of control, tolerance, withdrawal-like phenomena, or the continuation of gambling despite negative consequences and thus suggested a strong similarity to substance abuse disorders. In addition, gambling-specific characteristics (i.e., chasing one's losses and bail-out) were listed. In general, pathological gambling was described as a persistent and recurrent maladaptive gambling behavior that disrupts personal, family, or vocational pursuits.

The bulk of psychological and psychiatric research led to the decision that pathological gambling should be considered alongside substance use disorders in a new chapter entitled "Substance-Related and Addictive Disorders" in the DSM-5. This notable shift is based on several lines of consistent scientific evidence including the overlap with substance use disorders in terms of clinical phenomenology (e.g., symptoms, comorbidity), etiological models and risk/protective factors, the neurobiological and personality profile (e.g., biological makers, personality characteristics), and treatment issues (Böning, Meyer, & Hayer, 2013; Clark & Limbrick-Oldfield, 2013; Petry et al., 2014). Other important changes include the name of the disorder, a decreased diagnostic threshold, the removal of one criterion, and the introduction of a concrete time frame. In detail, the workgroup voted for introducing the more neutral or a theoretical denotation "gambling disorder" to avoid stigma associated with the term "pathological". In addition, the item of committing illegal acts to finance gambling has been deleted due to its low prevalence on population level and its little effect to diagnostic accuracy, respectively (Petry, Blanco, Stinchfield, & Volberg, 2013). Another change is related to the reduction of the threshold for diagnosis from "5 out of 10" criteria to "4 out of 9" criteria. Finally, and in contrast to the implicit lifetime perspective in former editions of the DSM, a specific time frame has been introduced. Thus, symptoms now need to occur concurrently (i.e., within the past 12 months) to qualify for a diagnosis of gambling disorder. However, it should be kept in mind that all symptoms have

been formulated to represent adult behaviors and cannot simply be generalized to adolescents without age-appropriate adaptations (Volberg et al., 2010).

In order to determine the extent of gambling-related problems in different population segments, Shaffer and Hall (2001) conducted a meta-analysis and summarized 139 distinct estimates from North American prevalence studies. Their calculations based on 32 samples with adolescents displayed a lifetime rate for pathological gambling (level 3 gambling) of 3.38 % (past-year prevalence: 4.8 %) and a lifetime rate of problem gambling (level 2 gambling) of 8.4 % (past-year prevalence: 14.6 %). In a more recent publication, Volberg et al. (2010) reviewed the methods and results of 71 adolescent prevalence surveys that have been conducted in North America, Europe, and Oceania. Despite significant methodological differences and strong variations with regard to gambling availability across different jurisdictions, the findings clearly show that a significant number of adolescents develop gambling-related problems. In sum, problem gambling rates appear to be higher than those of adults reflecting the fact that adolescence is a period of heightened vulnerability to high-risk behaviors. However, the first longitudinal studies pointed to the transitional nature of gambling pathways in youth and suggest that at least some individuals may undergo spontaneous remission and/or mature out of gambling problems (Delfabbro, King, & Griffiths, in press). Furthermore, Hayer's (2012) overview concerning selected youth gambling prevalence studies from Europe with at least 500 participants concluded that between 4.4 % (in Norway; see Molde, Pallesen, Bartone, Hystad, & Johnsen, 2009) and 24.1 % (Scotland; see Moodie & Finnigan, 2006) of minors could be considered as at-risk or problem gambler. Again, the prevalence of gambling-related problems is higher in adolescence compared to adulthood making problem gambling among youth an important public health issue. It has to be emphasized that the field of youth gambling assessment is still in its infancy and that current ways of identifying adolescent problem gamblers are not without criticism. One of the major limitations

refs to the lack rigorous psychometric evaluation of the instruments commonly used to measure problem gambling among adolescents (for further details see Stinchfield, 2011; Volberg et al., 2010).

## Biological/Genetic Factors

Genetic factors may influence problem gambling via multiple pathways and complex interactions with environmental stimuli. Considering the fact that family studies consistently prove a higher than expected frequency of gambling problems among first-degree relatives of pathological gamblers (e.g., Black, Monahan, Temkit, & Shaw, 2006), both familial and genetic factors appear to play an important role in the development of gambling-related problems.

Lobo and Kennedy (2009) reviewed relevant findings from genetic studies with (male) twin pairs and concluded that the heritability of pathological gambling lies approximately between 50 % and 60 %. Given relatively high comorbidity rates, it is not surprising that pathological gambling shares genetic vulnerability factors with antisocial behaviors, alcohol dependence, and major depressive disorder. Also, genetic factors underlie the link between exposure to traumatic life events and pathological gambling. Moreover, an early twin study point to moderate and significant heritability estimates for involvement in "high-action" gambling among males (Winters & Rich, 1998). More recently, Slutske, Zhu, Meier, and Martin (2010) examined the genetic underpinnings in women with basically similar results as the estimate of the proportion of variation in liability for gambling problems due to genetic influences was 51.8 % (for men: 48.5 %). In contrast, the study from Beaver et al. (2010) based on data of the National Longitudinal Study of Adolescent Health with 324 monozygotic twins and 278 same-sex dizygotic twins revealed substantial gender differences: For males, genetic factors accounted for 85 % of the variability in gambling while non-shared environmental factors accounted for the remaining variance. However, for females, genetic factors explained none, the shared environment 45 %, and the non-shared environment 55 % of the variance in gambling behaviors, respectively.

Whereas twin studies are certainly an important tool in dissecting the "nature versus nurture" debate on a given trait or disorder, molecular genetic studies go one step further and try to identify the specific genes that may be responsible for the development of a trait/disorder. In their review, Lobo and Kennedy (2009) noted that findings from molecular genetic investigations are still rare in the field of gambling research. Preliminary evidence suggests—in line with the established theoretical models—associations with genes primarily involved in the brain's reward and impulse-control systems. For instance, in a groundbreaking study, Comings et al. (2001) analyzed polymorphisms in 31 different genes and demonstrated that genes for dopamine, serotonin, and norepinephrine metabolism contributed significantly and almost equally (i.e., in an additive way) to the risk of pathological gambling. Meanwhile, compared to other addictions, problem gambling constitutes a rather novel subject of genetic enquiry, and future studies have to specifically resolve open questions related to relevant candidate genes and putative mechanisms of action (Agrawal et al., 2012).

In a comprehensive review article, van Holst, van den Brink, Veltman, and Goudriaan (2010) condensed the most recent biobehavioral study findings concerning pathological gambling and observed four important cognitive-emotional processes which may play an important role in this disorder: (1) altered reward and punishment processing (i.e., diminished sensitivity for rewards or losses); (2) attentional bias/cue reactivity (i.e., enhanced responsiveness to gambling-related cues); (3) impulsivity/disinhibition (i.e., the difficulty in inhibiting irrelevant behaviors and ignoring irrelevant information); (4) disadvantageous decision-making and impaired executive functioning (i.e., neglecting long-term negative consequences in order to obtain immediate gratification). Taken together, pathological gambling fits very well with theoretical models of addictions that stress the involvement of the

ventral tegmental-orbito frontal cortex. What remains unclear is whether these neurobiological changes are direct consequences of excessive gambling or whether they were already present before the onset of gambling.

In addition to these results, Chambers and Potenza (2003) proposed that during adolescence, normative neurodevelopment involves a relative immaturity of frontal cortical and subcortical monoaminergic systems that underlie impulsive behavior and can be responsible for an increased vulnerability to risk-taking (including excessive gambling) among youths. Thus, according to their neurodevelopmental status, adolescents appear not to be able to regulate emotional or motivational states to the same degree as adults (Potenza, 2013a).

## Individual Factors Influencing Risk and Resiliency

The empirical foundation of preventive action and intervention efforts arises from research determining risk and protective factors. Risk factors—in a technical sense—are defined as conditions associated with an increased likelihood of a negative outcome (e.g., gambling problems). In turn, protective factors are those conditions that reduce the potential of developing symptoms of psychosocial maladjustment or moderate the effect of exposure to risk factors (Coie et al., 1993). Before presenting risk factors associated with problem gambling in adolescence (and to some degree protective factors), two basic assumptions should not be forgotten: (1) Problem gambling is a multifaceted rather than unitary phenomenon (Griffiths, 2005), and consequently, many factors may come into play in various ways and at different levels that contribute to the development and maintenance of gambling-related problems. However, there is still a lack of consensus regarding the relative impact of single variables in contributing to problem gambling among adolescents (including the analysis of specific mechanisms of action). Further research is needed to clarify the complex functional relationships between certain variables and to incorporate

them into a comprehensive and testable etiological model. (2) Most of the research with adolescents is correlational in nature and precludes any conclusion in terms of causality. Greater emphasis on longitudinal studies is needed to improve our understanding of youth gambling problems in general and specify distinct maladaptive pathways in particular (Delfabbro et al., in press). The following list of risk (and protective) factors may therefore serve as a starting point for further more sophisticated analyses (for additional information on relevant risk/protective factors see the recent reviews by Ariyabuddhiphongs, 2013; Blinn-Pike, Worthy, & Jonkman, 2010; Hayer, 2012; Shead, Derevensky, & Gupta, 2011).

*Gender*: At present, gambling is mainly a male-dominated activity, with significantly more boys engaging in gambling compared to girls (e.g., Griffiths, 2011; Hayer, 2012; Shead et al., 2011). Furthermore, male adolescents are more likely to be classified as problem gamblers. Jacobs (2000) summarized gender differences among juvenile gamblers and drew the following conclusions: Male juveniles tend to spend more time and money when gambling, initiate gambling earlier, enjoy more skill-based games, and gamble on a greater number and variety of games. Gender differences have also been found with regard to gambling motivations. For instance, while male problem gamblers may primarily seek stimulation and action due to an abnormal physiological resting state, female problem gamblers mainly tend to gamble as a means of escape from emotional strain (Gupta & Derevensky, 1998a).

*Age*: While situational features (e.g., availability) and social aspects (e.g., gambling popularity among family members or peers) are important factors for starting gambling in the first place, regular gambling behavior is more likely to be explained by its rewarding characteristics and psychoactive effects (Hayer, 2012). From a theoretical point of view, age of onset and early winnings represent critical events that may increase the probability of further (excessive) gambling participation among youth. Consequently, most empirical findings support

the link between age of onset and problem gambling. More specifically, the earlier the initial contact, the higher the risk of developing gambling-related problems are upon reaching adulthood (Griffiths, 2011). Of particular note is the fact that children often start gambling together with family members or receive lottery tickets/scratchcards as presents (e.g., Gupta & Derevensky, 1997; Kundu et al., 2013; Moodie & Finnigan, 2006). Therefore, gifting instant lottery tickets to minors may normalize gambling, shape positive attitudes, and foster subsequent gambling engagement (Kundu et al., 2013). Furthermore, as youth get older they tend to turn towards commercial forms of gambling (e.g., lotteries, slot machines) whereas participation rates in informal and unregulated games (e.g., betting on games of personal skill) decrease (Winters, Stinchfield, & Kim, 1995).

*Ethnicity*: A growing and largely consistent body of evidence suggests that adolescents from ethnic minorities are generally of greater risk in developing gambling-related problems. For example, Delfabbro, Lahn, and Grabosky (2005) found young people from indigenous backgrounds to be more affected by problem gambling. Likewise, American Indian (e.g., Zitzow, 1996), African American (e.g., Petry & Tawfik, 2001), and non-Caucasian adolescents (e.g., Westphal, Rush, Stevens, & Johnson, 2000) appear to constitute vulnerable population segments. More recently, Ellenbogen, Gupta, and Derevensky (2007) presented self-reported data from the Greater Montreal region in Canada and revealed that Allophone adolescents (neither French nor English being the primary language) had the highest rates of weekly and problem gambling. Consequently, future studies must therefore explicitly test different hypotheses with regard to possible underlying mechanisms of action (e.g., cultural adaptation problems; processes of marginalization; impact of low socioeconomic status) to gain a deeper understanding of this phenomenon. It has been presumed that religion and religiosity play a protective role (e.g., among college students from Lebanon; Ghandour & El Sayed, 2013) but again, further research is needed to test the generalizability of such findings and to

draw a more concrete picture of direct and indirect relationships between religious affiliation/level of religiosity and (problem) gambling.

*Personality*: Numerous studies—mainly conducted with adults—have tried to identify core personality traits or dispositional attributes associated with problem gambling. Taken together, typical characteristics of an adolescent problem gambler include high scores in sensation seeking, excitability, and risk propensity, as well as a lack of impulse control (for an overview see Hayer, 2012). Gupta, Derevensky, and Ellenbogen (2006) examined the personality profile of Canadian high school students and found out that high levels of disinhibition, boredom susceptibility, cheerfulness, and excitability, together with low levels of conformity and self-discipline, best predicted problem-gambling severity level. Obviously, in terms of personality characteristics, certain individuals are more susceptible than others to developing maladaptive patterns of gambling behavior.

Not surprisingly, most studies have documented a strong relationship between impulsivity and adolescent problem gambling based on cross-sectional data (e.g., Nower, Derevensky, & Gupta, 2004). In addition, emerging evidence suggest that impulsivity is not only a simple correlate of gambling-related problems but also plays a causal role in the developmental trajectory. For example, Vitaro, Brendgen, Ladouceur, and Tremblay (2001) examined Canadian boys from disadvantaged neighborhoods and showed a predictive link between self-reported impulsivity at ages 13–14 years and youth gambling problems in later adolescence. Using repeated teacher ratings to measure impulsivity during early adolescence (aged 11–15 years), Liu et al. (2013) demonstrated among urban male youth that being member of the high impulsivity class almost tripled the odds of meeting criteria for problem gambling by the age of 19 years. The impulsivity-gambling trajectory seems also to hold true over longer spans of life as 7-year-old children with impulsive behaviors had an elevated risk of becoming problem gamblers by mid-adulthood (Shenassa, Paradis, Dolan, Wilhelm, & Buka, 2012). In line with this finding, an undercontrolled

temperament at 3 years of age predicted disordered gambling at ages 21 and 32 even after controlling for childhood intellectual ability and family socioeconomic status (Slutske, Moffitt, Poulton, & Caspi, 2012). Finally, an analysis from Auger, Lo, Cantinotti, and O'Loughlin (2010) points to an interaction between impulsivity and socioeconomic status (parent education, area material deprivation) with regard to gambling onset (i.e., self-reported impulsivity was associated with gambling onset among disadvantaged but not among disadvantaged youth).

*Coping*: Typical for young problem gamblers are unusually high levels of childhood maltreatment including emotional, physical, and sexual abuse as well as emotional and physical neglect (Felsher, Derevensky, & Gupta, 2010). Furthermore, this pattern of more stressful life events appears to be accompanied by poor or maladaptive coping skills. Amongst others, Bergevin, Gupta, Derevensky, and Kaufman (2006) demonstrated that adolescents with gambling-related problems used both less task-oriented and more avoidance-focused coping strategies. Moreover, gender differences emerged considering emotion-oriented coping: Only male (but not female) problem gamblers reported using emotion-focused strategies to deal with stressful events. In a large-scale German study, Hurrelmann, Schmidt, and Kähnert (2003) presented numerous risk factors that also encompassed a greater extent of (perceived) stressful life events and a low degree of self-efficacy. Taken together, adolescents with gambling-related problems can be described as highly stressed individuals with deficient coping skills who might "(ab) use" gambling to cope with psychological problems. This fits well to the findings from Parker, Taylor, Eastabrook, Schell, and Wood (2008) who established a negative correlation between the construct of emotional intelligence and adolescents' scores on a problem gambling measure.

*Cognitions*: There is a broad agreement that cognitive biases play a prominent role in the development and maintenance of problem gambling among adolescents as well as adults (e.g., Goodie & Fortune, 2013; Griffiths, 1994). More specifically, adolescent problem gamblers tend to be more susceptible to erroneous beliefs concerning randomness and chance. However, they were no less accurate in terms of understanding objective probabilities of gambling activities (Delfabbro, Lambos, King, & Puglies, 2009). Results from Moore and Ohtsuka (1999) confirmed that irrational control beliefs were strongly associated with problem gambling. In particular, young problem gamblers seem to have overinflated views about their chances of winning and the influence of their own behavior in controlling/manipulating chance outcomes. Concordantly, Turner, MacDonald, Bartoshuk, and Zangeneh (2008a) detected a negative correlation between problem gambling and the understanding of random chance among Canadian students from grades 5 to 13. Interestingly, Tang and Wu (2012) recently recruited three convenience samples of Chinese to represent different age cohorts and found that high school students with probable pathological gambling behaviors had the greatest cognitive biases among all subgroups. However, it should be noted that gambling-related cognitive distortions reflect a somewhat normative phenomenon and therefore does not provide a sufficient explanation of why individuals gamble in excess.

*Co-occurrence with other problem behaviors*: Research findings consistently indicate that adolescent problem gamblers also engage in other potentially addictive behaviors such as smoking tobacco, drinking alcohol, and illegal drug use/ abuse to a greater extent than non-problem gamblers (for comprehensive reviews see Hayer, 2012; Shead et al., 2011). In addition, they are more prone to be involved in other forms of risk behavior including video game playing and computer gaming (e.g., Hurrelmann et al., 2003; Wood, Gupta, Derevensky, & Griffiths, 2004), risky sexual activities (e.g., Willoughby, Chalmers, & Busseri, 2004), and high-risk speeding in vehicles (Husted et al., 2006). Thus, gambling-related problems seem to be part of a general risky problem behavior syndrome. However, in contrast to the bulk of evidence based on correlational data, very few longitudinal studies investigated the predictive links shared by (problem) gambling and other forms of problem

behavior. Preliminary findings suggest that alcohol abuse among male adolescents represents a predictor for a subsequent increase in gambling over time or a pattern of stability of regular gambling activities, respectively (Barnes, Welte, Hoffman, & Dintcheff, 2002).

Similar associations have been found between problem gambling and delinquent behavior among adolescents (see Hayer, 2012; Shead et al., 2011). In an early study, Yeoman and Griffiths (1996) reported that approximately 4 % of juvenile crime was associated with gaming machine use and further provided limited evidence that a minority of juveniles aged 10–17 years committed crimes in order to supplement their gambling activities. According to Stinchfield, Cassuto, Winters, and Latimer (1997), antisocial behavior, gender (i.e., being male), and lifetime alcohol use explained 25 % of the variance in highest level of gambling frequency. More recently, Brunelle et al. (2012) revealed that the severity of delinquency contributes to explaining gambling-related problems among both adolescent Internet gamblers and adolescent non-Internet gamblers. Furthermore, a strong comorbidity between current conduct disorder and gambling problems, particularly among younger respondents in a sample of 14–21-year-olds, has been discovered (Welte, Barnes, Tidwell, & Hoffman, 2009a). In general, the available evidence indicates two probable pathways: (1) delinquent/dissocial behavior as an indicator of a severe gambling pathology (i.e., adolescents commit illegal acts to finance their gambling) or (2) delinquency and problem gambling as expressions of a general tendency toward deviancy.

Finally, compared to their peers, adolescent problem gamblers exhibit a wide range of significant school-related difficulties including a poor work performance. Differences between groups were obtained for being expelled from class by a teacher, failing a course or academic year, academic achievement, and time spent studying on homework (Ladouceur, Boudreault, Jacques, & Vitaro, 1999). Young problem gamblers are also unhappier with their overall school performance and are more likely to truant from school (e.g., Fisher, 1999; Griffiths, 2011;

Ólason, Skarphedinsson, Jonsdottir, Mikaelsson, & Gretarsson, 2006).

*Co-occurrence with other mental health problems*: As expected, there is a considerable overlap between problem gambling and other mental health problems. For instance, male students with learning disorders show an elevated risk for the development of gambling-related problems (Parker, Summerfeldt, Kloosterman, Keefer, & Taylor, 2013). Moreover, individuals who retrospectively identify themselves with the hyperactive-impulsive type of attention deficit hyperactivity disorder (ADHD) in childhood were significantly more likely to report symptoms of disordered gambling as young adults (Clark, Nower, & Walker, 2013). Similarly, Breyer et al. (2009) showed that sustained ADHD symptoms throughout childhood and young adulthood predicted gambling problem severity.

Internalizing pathology, in particular, depressive and anxious features, has also been linked to youth gambling problems. For example, adolescents with severe gambling problems experience higher levels of state and trait anxiety (Ste-Marie, Gupta, & Derevensky, 2006). Furthermore, dysphoric mood and clinical depression (Gupta & Derevensky, 1998a; Yip et al., 2011)—as well as suicide ideation and suicide attempts (Ladouceur et al., 1999)—are likewise characteristic of young problem gamblers. However, in summarizing the literature, Langhinrichsen-Rohling (2004) argued that clinical depression including suicidality typically occurs as a consequence of problem gambling and its related stressors, rather than a predictor of gambling excesses in youth.

## Family and Peer Factors Influencing Risk and Resiliency

*Family structure*: According to McComb and Sabiston (2010), multiple family influences on adolescent gambling behavior exist that can be conceptualized in different domains such as family sociodemographic factors, family members' attitudes/behaviors, general family climate, and/ or parenting practices. With regard to family

structure, research findings are neither consistent nor straightforward. While some studies have found that young people from single parent families are at greater risk to be classified as problem gamblers, other empirical evidence failed to confirm a relationship between family composition or related variables and problem gambling (for comprehensive reviews see Hayer, 2012; McComb & Sabiston, 2010). In short, a low-family socioeconomic status and a broken home environment appear to be, albeit weakly, associated with gambling-related problems in adolescents at least on a bivariate level. Vice versa, being raised in an intact home may serve as protective factor from this type of risk-taking behavior.

*Parental attitudes/behaviors*: It is self-evident that parental attitudes and behaviors shape their offspring's development considerably. In line with this, substantial research has established a clear link between parental gambling participation and (excessive) gambling involvement of their children (e.g., Delfabbro et al., 2005; Ólason et al., 2006; Wickwire, Whelan, Meyers, & Murray, 2007). Obviously, most parents do not perceive youth gambling as a potentially serious issue (e.g., Campbell, Derevensky, Meerkamper, & Cutajar, 2011) and even tend to gamble together with their children (see above). Furthermore, adolescent problem gamblers are far more likely to have a mother or father with a gambling pathology (e.g., Gupta & Derevensky, 1998b; Hardoon, Gupta, & Derevensky, 2004). Needless to say, having a sibling with a gambling problem represents another important predictor variable (Dickson, Derevensky, & Gupta, 2008).

*Family climate*: As with other forms of problem behavior, factors such as family support and/or family cohesion seem also to be negatively associated with (problem) gambling in adolescents. For instance, young problem gamblers reported having bad relationships with their parents (Skokauskas & Satkeviciute, 2007), feeling a lack of social support from their families (Hardoon et al., 2004), and experiencing lower levels of parental trust and communication (Magoon & Ingersoll, 2006). Although not without contradictions, available empirical evidence implicates an impact of the general family

climate on adolescent gambling patterns. Furthermore, Dickson et al. (2008) indicated that a lack of family cohesion may play a role in predicting gambling-related problems in adolescents. The wider domain of social bonding (including family bonding but also school bonding and prosocial norms), in turn, represents probably one of the most important protective factors (Lussier, Derevensky, Gupta, Bergevin, & Ellenbogen, 2007).

*Parental monitoring*: Another important research area concerns the role of parenting practices. In general, low levels of parental monitoring or supervision increase the risk of developing gambling-related problems among juveniles (Magoon & Ingersoll, 2006; Vachon, Vitaro, Wanner, & Tremblay, 2004; Wanner, Vitaro, Carbonneau, & Tremblay, 2009). However, the available evidence is far from conclusive because Chalmers and Willoughby (2006), for example, only demonstrated such a link for female adolescents. Also, in some longitudinal assessments, the association between parental monitoring and gambling frequency or problem gambling disappears (e.g., Barnes, Welte, Hoffman, & Dintcheff, 2005; Vitaro et al., 2001). The complex role of parental practices is highlighted by Vitaro, Wanner, Brendgen, and Tremblay (2008) who found that ineffective parenting (i.e., high coercion and low monitoring) mediated the links between parental problem gambling and offspring's conduct problems at age 16 and antisociality symptoms at age 23 . Adults with a gambling pathology affect children's adjustment by disrupting family life and poor caregiving. In contrast, high levels of parental monitoring may reduce the likelihood of involvement in gambling patterns with negative consequences considerably (Goldstein et al., 2013).

*Peers*: As children get older, the influence of the peer group and larger social networks increases. As expected, adolescent problem gamblers are significantly more likely to have friends who approve of gambling or who gamble excessively themselves (e.g., Delfabbro & Thrupp, 2003; Hardoon et al., 2004; Ólason et al., 2006). In addition, Wickwire et al. (2007) observed that the perceived environment—and friend models for problem behavior in particular – was a significant

predictor of gambling intensity. Furthermore, young problem gamblers report a lack of social support by peers (Hardoon et al., 2004), fewer close friends (Gerdner & Svensson, 2003), and feeling more alienated and unpopular among their classmates (Delfabbro, Lahn, & Grabosky, 2006). In summarizing the evidence, Hayer (2012) concluded that the general quality of peer relationships represents a relatively strong predictor of problem gambling severity in youth.

## Social and Community Factors Influencing Risk and Resiliency Including Situational and Structural Characteristics of Gambling

*Social and community factors*: While most of the research that deals with risk factors of adolescent problem gambling relates to individual characteristics and microsocial determinants, surprisingly little information can be found with regard to (macro-)social-level or community-level factors (Barmaki & Zangeneh, 2009). In this context, Griffiths, Hayer, and Meyer (2009) have argued that specific situational and structural characteristics of certain gambling forms can play an important contributory factor in gambling acquisition, development, and maintenance. For instance, situational and ecological determinants of gambling are often important in the initial decision to start gambling. These characteristics are primarily environmental features such as the location of the gambling venue, the number of gambling venues in a specific area, or advertisements that stimulate people to gamble and thus encompass important dimensions such as availability, acceptability, and accessibility.

However, there is only indirect and inconclusive evidence so far for the impact of gambling availability or accessibility on the prevalence of youth gambling problems. In an early study, Fisher (1999) could delineate a slightly higher prevalence rate among seaside residents (implying easy access to fruit machine gambling in arcades). According to Welte, Barnes, Tidwell, and Hoffman (2009b), a link exists between the number of types of legal gambling (or permissiveness of gambling laws in the respondent's home state) and a greater likeli-

hood of problem gambling for young adults (aged 18–21 years), but not for minors (aged 14–17 years). Another concern relates to the active and extensive promotion of gambling products and its detrimental effect on minors. For example, both Fisher (1999) and Lambos, Delfabbro, and Puglies (2007) presented preliminary data on the association between media exposure and gambling status. Although most youth remain sceptical about the central messages of gambling advertisements, a significant number reported that these messages prompted them to gamble (Derevensky, Sklar, Gupta, & Messerlian, 2010). Recently and in line with this, a relationship between recall of exposure to advertising and accessibility among adolescents was supported by Gavriel Fried, Teichman, and Rahav (2010).

*Structural characteristics of gambling*: There is an ongoing controversial debate in the literature about the impact of specific gambling forms on gambling-related problems. While some researchers claim that certain types of gambling—particularly gambling activities that have rapid event frequencies such as slot machines—are more "addictive" or "dangerous" than others, an alternative point of view suggests that overall gambling engagement or gambling versatility (i.e., number of gambling types played in a certain time period) constitutes a more salient predictor of disordered gambling. For example, after controlling for involvement in other games, card games, casino gambling, "other gambling", and games of skill—but not gambling machines or Internet gambling—were found to be associated with an increase in gambling symptoms (Welte, Barnes, Tidwell, & Hoffman, 2009c).

In contrast, plenty of evidence indicates that (adolescent and adult) problem gamblers indeed prefer certain gambling activities and/or gambling in specific media. A prime example comprises the much higher prevalence of gambling-related problems among adolescent Internet gamblers compared to adolescent non-Internet gamblers (e.g., Griffiths & Parke, 2010; Ólason et al., 2011; Potenza et al., 2011). Not surprisingly, juveniles reporting gambling problems generally prefer rapid, continuous, and interactive games (Jacobs, 2000). Hence, structural

characteristics appear not only to have implications for the gamblers' motivation by satisfying their specific needs but also for the potential to induce excessive gambling patterns. The most important structural characteristics can be summarized as follows (e.g., Griffiths, 1999):

– Stake size (including issues around affordability, perceived value for money)
– Event frequency (time gap between each gamble)
– Payout interval
– Amount of money lost in a given period of time (important in chasing behavior)
– Prize structure (number and value of prizes),
– Probability of winning
– Size of jackpot
– Skill and pseudo-skill elements (actual or perceived)
– Near miss opportunities (number of failures that are close to being successful)
– Light, color, and sound effects
– Social or asocial nature of the game
– Rules of the game (e.g., complicated, easy)
– Use of tokens, chips, or credit cards (which may disrupt the financial value system).

## Evidence-Based Treatment Interventions for Problem Gambling

*What works*: Treatment approaches cover a wide range of activities and are based upon various theoretical foundations. However, there is still a sparse description of treatment studies in the literature related to adolescent problem gambling. In fact, no controlled studies with random assignment and comparison groups have been reported that provides empirical evidence for the effectiveness of certain treatment approaches or for what can be denominated empirically tested evidence-based psychotherapy for gambling pathology in adolescents. A review of the literature did not reveal a single program that meets the given standard for what works. A number of authors (e.g., Chevalier & Griffiths, 2004; Griffiths, 2001; Nastally & Dixon, 2010) have recently summarized several reasons for this knowledge gap including

structural (e.g., insufficient treatment opportunities specifically available for adolescents, poor funding for this type of research) and individual (e.g., few adolescents with gambling-related problems express a desire for treatment, general lack of awareness of the scope of the problem) barriers. As a consequence, treatment providers are being forced to adopt strategies that have been successfully used with adults (mainly cognitive-behavioral approaches; see Clarke & Skokauskas, 2009; Cowlishaw et al., 2012).

*What might work*: To date, only two empirically evaluated approaches to treat adolescent problem gambling have been reported in the literature. Ladouceur, Boisvert, and Dumont (1994) conducted a study evaluating the effectiveness of cognitive-behavioral treatment with four male pathological videopoker players aged 17–19 years. This multimodal treatment approach consisted of five components: information about problem gambling, cognitive interventions, problem-solving training, social skills/assertiveness training, and relapse prevention. Individual treatment lasted approximately three months and after completing treatment, clinically significant improvements for the perception of control as well as reductions in the perception of the severity of gambling problems were found. At two follow-ups after 3 and 6 months, all participants had ceased their gambling. Furthermore, Gupta and Derevensky (2000) introduced an eclectic therapy concept to treat 36 male adolescent problem gamblers. The participants were 14- to 21-years old and sought treatment over a 5-year period. Individual therapy was provided weekly and consisted of the following components: detailed intake assessment, establishing acceptance of the problem and goal setting, understanding motivations for gambling/analysis of gambling episodes, identification of underlying causes of stress (including comorbid disorders) and addressing personal issues, development of adequate coping skills, restructuring of free time, involvement of family support, cognitive restructuring, establishing debt repayment plans/fostering effective money management skills, and relapse prevention (for similar therapeutic

recommendations see: Bellringer, 1992; Busch-Hettwer & Hayer, 2013). During 1-year follow-up, 35 adolescent gamblers were abstinent and also improved on measures of depression, drug and alcohol use as well as peer/family relationship. Due to the individual (and thus heterogeneous) approaches including variability in number of sessions and the high motivational base (i.e., adolescents who actively sought treatment), issues related to effectiveness or efficacy cannot be adequately addressed so far. Further treatment studies with young adults or college students are mainly based on single cases, case series, or pilot data and are therefore very limited in terms of validity and generalizability (detailed information on the primary studies are provided by Clarke & Skokauskas, 2009).

Taken together, theoretical foundations, research on risk factors, and preliminary evidence of these two studies suggest that a cognitive-behavioral approach including amongst other things cognitive restructuring, problem-solving elements, social skills training, money management strategies, and relapse prevention might effectively treat adolescent problem gamblers. Consequently, further randomized studies are necessary to empirically confirm this assumption for adolescent populations. Extra attention has to be given to motivational issues as many (young) gamblers will be very ambivalent about stopping with an activity that has been both, a source of excitement and likewise a source of suffering. To understand the motivational processes underlying behavioral change for individuals struggling with addictions, the "stages of change" derived from the transtheoretical model of intentional behavior change provide a valuable theoretical framework (Prochaska, DiClemente, & Norcross, 1992). According to this model, individual progress does not necessarily occur in a linear way. Rather, for most addicted people, change is a dynamic process with fluctuating motivations. There are thus identifiable stages including resistance (precontemplation), contemplation, preparation, action, and maintenance (and relapse). Consequently, DiClemente, Story, and Murray (2000) have suggested the applicability of this model for gambling problems in youth.

The fact that adolescent problem gamblers are very reluctant to seek treatment or formal assistance is another issue of importance in this context (e.g., Griffiths, 2001). Interestingly, Splevins, Mireskandari, Clayton, and Blaszczynski (2010) found that young problem gamblers primarily turn to friends and parents if they felt they had a problem themselves. In addition, compared to non-problem gamblers, they reported being less likely to seek a counsellor. In a similar vein, from a youth perspective, gambling seems not to be perceived as a major problem that deserves professional intervention (Ladouceur, Blaszczynski, & Pelletier, 2004). Other plausible explanations why so few adolescents enroll in treatment programs encompass the following: adolescent problem gamblers undergo spontaneous remission and/or mature out of problems, adolescent problem gamblers are constantly "bailed out" of trouble by their relatives which masks problem severity, the negative consequences may be attributed to other forms of problem behavior or are less severe than in adulthood, adolescents generally view themselves as invincible/invulnerable and believe to control or stop gambling without external support, and attending treatment programs is associated with stigma and thus will be avoided (e.g., Chevalier & Griffiths, 2004; Griffiths, 2001). Although not every assertion made has been empirically tested yet, the list certainly can serve as a starting point for further research.

Finally, against the background that traditional help services are obviously failing to reach young problem gamblers, Internet-based therapeutic support may represent a promising alternative in assisting adolescents in retaining behavioral control or in minimizing gambling-related problems (Griffiths & Cooper, 2003). Although there are currently no standardized interventions specifically aligned to gambling for this age group, initial trials of online and computerized interventions for smoking and alcohol use imply their potential value for young problem gamblers as well (Gainsbury, 2011). Therefore, implementations of measures such as Internet-based assessment with personalized feedback, interactive self-help tools, therapeutic-guided e-mail/chat/discussion forums or mobile phone

text messaging as well as online counselling appear to be useful options for young generations because of their familiarity with new media.

*What doesn't work*: Given the paucity of scientifically validated evidence in this area, it is difficult to specify approaches that definitely do not work in treating adolescent gamblers. However, after reviewing the literature that deals with the treatment of adult problem gamblers, it can be inferred that unimodal models ignoring the complex interaction of several risk and protective factors in the initiation, development, maintenance, and recovery of problem gambling will most likely lead to treatment failure.

## Psychopharmacology and Problem Gambling

Neuro/biological studies suggest the involvement of a broader range of neurotransmitter systems—most notably dopamine, serotonin, norepinephrine, opioid, and glutamate—in the onset of problem gambling (further details concerning their specific functions and roles can be found in Potenza, 2013b). Consequently, medication that targets those neurotransmitter systems appears to be successful in treating individuals with gambling pathology. In the past, several authors have hypothesized that the use of three classes of drugs seems to be the most promising approach to treat pathological gambling in adults: Serotonin reuptake inhibitors, opioid receptor antagonists, and mood stabilizers (e.g., Grant, Kim, & Potenza, 2003; Nastally & Dixon, 2010). These medical interventions aim at normalizing the levels of brain chemistry or at addressing comorbid disorders. A recent systematic review by Grant, Odlaug, and Schreiber (2014) identified 18 double-blind, placebo-controlled pharmacological treatment studies with adult pathological gamblers and specified, however, that antidepressants, atypical antipsychotics, and mood stabilizers have demonstrated somewhat mixed and ambivalent results. In contrast, opioid antagonists and—to some degree—glutamatergic agents are associated with the most beneficial outcomes in terms of efficacy. Of all

pharmacological drugs tested, the opioid antagonists naltrexone and nalmefene should be considered as the preferred choice for treating adults with gambling-related problems at this time (Grant et al., 2014). These drugs directly block the transmission of dopamine in the nucleus accumbens and modulate dopaminergic paths that seem to be implicated in the etiology of addictions.

Despite the growing body of pharmacological research, to date, no controlled study has directly examined the safety and efficacy of pharmacological treatments for adolescent problem gamblers (Grant & Potenza, 2011). Furthermore, long-term efficacy trials with adults and with larger sample sizes are needed before any reliable conclusions can be drawn for minors. While pharmacotherapy may be a useful supplement for some adolescents, prescribing medication always has to take developmental issues into account (e.g., differences in central nervous system functioning or hormonal changes). Consequently, it is premature for definite treatment recommendations with regard to certain doses, certain indications, or certain combined treatment approaches including the use of drugs.

## The Prevention of Problem Gambling

*What works*: Against the background of growing public concerns about the dangers associated with gambling, a large number of contemporary (behavior oriented or educational) preventive activities can be found that aim at combating problem gambling. Because adolescents represent a particular vulnerable group, many strategies are explicitly targeted at this population segment. However, rigorous scientific evaluation of the effectiveness of these preventive programs is still an exception and thus little information exists concerning a "best prevention model". Ladouceur, Goulet, and Vitaro (2013), in an excellent systematic review, recently identified two broad categories of preventive strategies, namely gambling-specific prevention programs as well as gambling and related skills workshops. All published and evaluated studies are based on

a universal approach, regardless of the gambling habits or the risk status of the adolescents before starting the intervention. Correspondingly, these studies have predominantly focused on increasing knowledge and correcting misconceptions about gambling and – to a lesser degree – on selected personal skills, but did not measure or obtain meaningful behavioral changes, respectively. General evidence shows that accurate knowledge about healthy and unhealthy behaviors does not necessarily affect the behavior itself (e.g., Botvin, 2001). Together with the lack of long-term follow-ups, this basic limitation leads to the conclusion that it is premature to explicitly state what type of preventive intervention works in terms of behavioral change related to problem gambling (e.g., delaying the age of onset, decrease of the amount of money bet or time spent on gambling, or reduction of gambling-related problems).

*What might work*: Altogether, Ladouceur et al. (2013) listed ten studies (not all of which were peer reviewed) that belong to the category of gambling-specific prevention programs. Most of these programs have been implemented in school settings with small groups of students. Their overall goal is to provide fundamental information about (problem) gambling in order to foster realistic views on gambling and adaptive attitudes toward gambling. Common topics include the characteristics of games of chance, winning probabilities, cognitive bias and illusion of control, symptoms and signs of problem gambling, and available resources for problem gamblers. For example, Gaboury and Ladouceur (1993) created a mainly information-based didactic prevention program for high school students with three sessions. Results indicated that the experimental group improved their knowledge about gambling significantly. This difference was also evident at a follow-up measurement 6 months after. However, at 6-month follow-up, no influence on actual gambling behavior, newly known coping strategies to control gambling behavior, or attitudes related to gambling were observed. Similarly, a series of related studies published in peer-reviewed journals (Ferland, Ladouceur, & Vitaro, 2002; Ladouceur, Ferland, & Vitaro, 2004; Lavoie &

Ladouceur, 2004) indicated that the presentation of a short film (entitled "Lucky") could change gambling-related attitudes and increase knowledge about gambling in early and middle adolescence. Although such a film might indeed capture the students' attention and interests in a cost-effective and/or time-effective way, it is doubtful that such short-term interventions generate sustained changes or modify gambling behaviors substantially.

A 1-h prevention program intended to explore the nature of gambling, random events, and how the emotional reaction to winning and losing can stimulate excessive gambling activities (Turner, MacDonald, Bartoshuk, & Zangeneh, 2008b). Based on the theory of reasoned action, the intervention aim primarily at improving the participants' knowledge of random chance and shifting them from unhealthy strategies to cope with stress toward more adaptive strategies. Using a pre-test/post-test controlled experimental study design, the findings showed that members of the experimental group increased their knowledge about random effects significantly. Admittedly, in terms of effect size, this difference was quite small, and no positive results were obtained with regard to attitudes towards gambling, actual gambling behavior, gambling-related problems, or coping skills. Furthermore, Taylor and Hillyard (2009) presented preliminary data on the short-term impact of a gambling awareness prevention program entitled "Don't Gamble Away our Future." The overall goal of the 45-min single-session intervention was to educate children and adolescents about gambling and its addictive potential. Again, an increase in students' knowledge was achieved at post-test, and improvements were more pronounced among males and younger students. Despite an impressive sample size ($n = 8,455$), the lack of a control condition and missing follow-up measurements pose severe limitations to the validity of the findings. In addition, a recent evaluation study from Germany suggest that it is possible to increase gambling knowledge, decrease problematic gambling attitudes and beliefs, and slightly decrease current gambling with a 90-min educational gambling unit (Walther, Hanewinkel, & Morgenstern, 2013).

Data were collected via a cluster randomized control trial and refer to the impact of a broader school-based media education program for 6th and 7th grade students ($n=2{,}109$) with a follow-up measurement approximately 4 months after the intervention.

Finally, results from Ladouceur, Ferland, and Fournier (2003) supported the notion that erroneous perceptions can be reduced by a prevention program specifically designed to explain the concepts of chance and randomness even among primary school students (i.e., 5th and 6th graders). Additional analyses confirmed that the students benefited more from exercises delivered by a gambling expert than by regular teachers, and that the expert's exercises were more efficient than components drawn from an awareness-raising program named "Count Me Out." Because no behavioral measures were included, it is again difficult to ascertain the general utility of such a narrow approach.

Concerning the five identified programs that were classed in the category "gambling and related skills workshops" (Ladouceur et al., 2013), only three evaluations have been published in peer-reviewed English journals so far. Two publications refer to the same program ("Gambling: A Stacked Deck"), a five-session workshop for university and high school students that included sections on generic information on (problem) gambling, proper decision-making, social problem-solving skills, and adaptive coping skills (Williams, Connolly, Wood, Currie, & Davis, 2004; Williams, Wood, & Currie, 2010). Evaluative results with regard to 9th to 12th graders showed improvements in knowledge in gambling, in awareness of and resistance to gambling fallacies as well as more negative attitudes toward gambling 3 months after the final lesson (Williams et al., 2004). In contrast, no changes were observed when looking at decision-making or problem-solving skills. Furthermore, while decreases in time and money spent gambling and in the number of active gamblers occurred, no significant impact was found for the proportion of problem gamblers. In the second study, Williams et al. (2010) evaluated a basically unaltered version of the program with a similar methodological approach including a 4 months follow-up. Desirable effects were attained for gambling attitudes, gambling knowledge, resistance to gambling fallacies, decision-making and problem-solving skills, number of active gamblers, gambling frequency, and self-reported gambling problems, but not for involvement in high-risk activities or money lost gambling. Apparently, an additional booster session may further improve the effects at least in certain areas. Finally, Turner, MacDonald and Somerset (2008) revised and expanded their aforementioned program into a workshop with six core lessons (and an additional summary lesson) and almost sole emphasis on the following streams of content: knowledge of random chance, coping and life skills, and avoiding problematic behaviors through self-awareness and self-monitoring. Taken together, favorable outcomes were reported for students' knowledge of random events, self-monitoring skills, and knowledge of coping abilities. Despite these effects, the workshop did not reduce gambling-related problems among youth significantly (for further convenient but not yet formally evaluated educational gambling prevention programs as well as promising approaches in terms of structural prevention and policy development see Derevensky & Gupta, 2011; Hayer, 2012).

*What doesn't work*: Research from other addiction areas undoubtedly demonstrate that fear-inducing approaches and information-only techniques are not successful in altering behavior patterns (e.g., Evans, 2003). In particular, these programs do not consider important developmental tasks such as coping with social influences, which may in turn affect health threatening behaviors. Simply scaring young people is clearly an ineffective way of preventing later problem behavior and should be avoided when designing programs to prevent problem gambling in adolescence. In a similar way, information-only approaches (e.g., the sole dissemination of information about psychoactive substances) have little or no positive effects on behavioral change. Finally, delivering information in the form of abstract, non-interactive, and/or short-term sessions does not represent an adequate methodology to increase factual knowledge and as a consequence to prevent health-damaging behaviors.

## Conclusion: Recommendations for Best Practices

Although the state of knowledge with regard to prevalence and risk factors has increased considerably in the past years, still little is known about the relative weight of certain risk-enhancing conditions and their causal role in the etiology of gambling-related problems in adolescence. Furthermore, relatively few established peer-reviewed research studies on protective factors have been published to date. The lack of consensus can be illustrated by outlining two high-quality empirical studies that simultaneously examined risk and protective factors with partially conflicting results. On the one hand, according to Dickson et al. (2008), the absence of risk factors rather than the presence of protective factors appeared to be essential in the prediction of gambling problems among youth. However, on the other hand, Lussier et al. (2007) demonstrated that factors in both domains contribute uniquely to the prediction model. Thus, future gambling research primarily needs to establish a comprehensive multicausal etiological and testable model including different pathways and modifiable risk/protective factors not only to advance in theory-building but also to design effective prevention and treatment programs.

Overall, the significant progress in understanding risk factors of adolescent problem gambling has to be continuously extended and translated into sound assessment, prevention, and treatment approaches. To put it another way, one of the main goals in the near future must be to better integrate empirical research, theory, and prevention science with practice. Selected important key actions, research areas, and practical challenges around adolescent problem gambling are summarized in Box 28.1. How to meet these challenges will determine the extent to which future generations throughout the world will (or will not) develop gambling-related problems.

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**Box 28.1  Key actions, research, and practical challenges around adolescent problem gambling (Created by authors, Tobias Hayer & Mark D. Griffiths, 2013)**

**Research on risk/protective factors**

– Conduct more rigorous analyses of risk *and* protective factors of adolescent problem gambling and incorporate the empirical findings into a comprehensive etiological model.
– Arrange studies with longitudinal designs to determine causal risk factors preceding the outcome of problem gambling and highlight distinct developmental pathways.
– Differentiate between risk factors that foster the onset of gambling behavior and risk factors that stimulate excessive gambling patterns.
– Confirm study findings with different methodologies, across populations, and in varying cultures.
– Develop and validate a standardized screening instrument for youth to assess gambling-related problems in a more age-appropriate way.

**Prevention/treatment issues**

– Raise public awareness about the extent and the consequences of adolescent problem gambling, especially among parents and teachers.
– Design and evaluate primary prevention programs in a comprehensive way (e.g., with follow-ups and independent replications) and establish them within the curricula of elementary, middle, and high schools as well as colleges.
– Stimulate high-quality research related to the treatment of adolescent pathological gamblers (including the question why this group in general does not seek treatment).

**Box 28.1 (continued)**

– Implement treatment interventions across different settings and with multiple options (e.g., psychoeducation, minimal interventions, outpatient programs, inpatient care, Internet-based interventions).
– Consider different subgroups of problem gamblers and tailor the core treatment elements accordingly.
– Reach young people who are absent from school (e.g., truancy, school drop-out) and who are more likely to be engaging in gambling and other potentially addictive behaviors.

**Policy issues**

– Raise the minimum age of all forms of gambling to 18 years and impose stricter penalties for gambling operators allowing children and adolescents to gamble illegally.
– Evaluate the influence of structural and situational characteristics of gambling technologies with regard to the needs of adolescents.
– Determine the impacts of the evolvement of new gambling opportunities (e.g., Internet gambling, mobile gambling) as well as gambling-like experiences (e.g., gambling without money, gambling on social networking sites).

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# Dating Violence

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## Introduction

In adolescence, romantic relationships emerge as an important aspect of the social world. For most adolescents, romantic relationships contribute to normative development by providing opportunities to learn about commitment and intimacy and develop a sense of identity (Furman & Shaffer, 2003). However, for some adolescents, these relationships involve experiences of conflict and verbal and physical aggression, which can have serious negative consequences for adolescent health and well-being (Ackard, Eisenberg, &

Neumark-Sztainer, 2007; Brown et al., 2009; Ellis, Crooks, & Wolfe, 2009; Exner-Cortens, Eckenrode, & Rothman, 2013; Roberts, Klein, & Fisher, 2003). In this chapter we provide an overview of the prevalence of the social and public health problem of dating violence and review the individual, family, and social factors predicting adolescent dating violence perpetration and victimization. Finally, we provide an overview of evidence-based programs for the treatment and prevention of adolescent dating violence.

## Definitions

As defined by the Centers for Disease Control and Prevention, adolescent dating violence is categorized into four types: physical, emotional, sexual, and stalking (Centers for Disease Control and Prevention, 2012a). Physical dating violence includes acts which have the potential to injure the victim, such as slapping, pushing, choking, shaking, hitting, or using a weapon. Emotional dating abuse, often referred to as psychological abuse, includes behaviors that cause emotional harm, trauma, or fear, such as threats of physical violence, controlling the victim's behaviors, diminishing or humiliating the victim, isolating the victim from friends and family, and destroying property. Sexual dating violence includes forcing someone to engage in a sexual act against his or her will, regardless of whether the act is

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completed or not, or engaging in sexual acts with a person who is unable to consent. Finally, stalking refers to a pattern of harassing behavior that causes fear for the victim.

## DSM IV and Incidence/Prevalence Rates

The DSM IV (American Psychiatric Association, 2000) does not include a diagnosis for adolescent dating violence perpetration and victimization; therefore, dating violence behaviors are measured in many different ways ranging from one item to an extensive list of abusive behaviors people might have used or experienced from a romantic partner (e.g., slapped, threatened), to in-depth narrative descriptions of abusive encounters. A commonality across most studies with adolescents is that psychological abuse tends to be the most prevalent type of dating violence, followed by physical, and finally, sexual dating violence.

## Victimization Prevalence Rates

Four national probability studies of adolescents have included measures of dating violence victimization: the National Longitudinal Study of Adolescent Health (Add Health), the NEXT Generation Health Study (NEXT), the Youth Risk Behavior Survey (YRBS), and the National Survey of Children's Exposure to Violence (NatSCEV). The Add Health study, initiated during the 1994–1995 school year, found that of youth (ages 12–21) in a heterosexual dating relationship, 32 % reported experiencing any dating violence victimization. Of these, 20 % reported only psychological victimization (no physical victimization) and 12 % reported any physical dating violence in the prior 18 months, with virtually identical prevalence rates for males and females (Halpern, Oslak, Young, Martin, & Kupper, 2001). Among adolescents in same-sex relationships (ages 12–21), more females (28.6 %) than males (18.3 %) reported any

psychological or physical victimization (Halpern, Young, Waller, Martin, & Kupper, 2004).

The NEXT study employed the same five items as the Add Health Study, originally from the Conflict Tactics Scale (Straus & Gelles, 1986), and provides a more recent look at dating violence. In the nationally representative sample of tenth graders recruited during the 2009–2010 school year, the prevalence of students reporting any dating violence victimization in the past year was 35 %. Of these, 24 % reported only psychological victimization (no physical victimization) and 11 % reported any physical victimization (Haynie et al., 2013).

The YRBS collects data biannually from a nationally representative sample of ninth through twelfth grade students. Rates of physical victimization in the previous year (measured with one item) have not significantly changed from 1999 to 2011, ranging from 8.8 % in 1999 to 9.4 % in 2011 (Centers for Disease Control and Prevention, 2012b). In 2011, rates did not differ by gender, but Blacks and Hispanics had higher rates of victimization than Whites among both boys and girls.

Finally, the NatSCEV is the only study of the four to have used computer-assisted telephone interviews. This methodology permits the interviewer to ask about a type of victimization and then probe "who did this?" Among adolescents ages 12–17, 6.2 % reported ever experiencing physical dating violence victimization, and 2.0 % reported sexual victimization from a dating partner (Hamby & Turner, 2012). Rates of physical victimization were significantly higher for boys (7.9 % boys; 4.5 % girls) and rates of sexual victimization were significantly higher for girls (1.3 % boys; 2.8 % girls).

The four national probability studies described above vary in age range of participants, the measure of victimization (including time frame referenced), and the data collection modality. Despite these differences, these studies provide a fairly consistent estimate of the prevalence of adolescent dating violence victimization which has remained stable for more than a decade. The prevalence of any dating violence victimization ranges from 32 % (12–21 year olds) to 35 %

(tenth graders), physical dating violence victimization ranges from 6.2 % (12–17 year olds) to 12 % (12–21 year olds), and sexual dating violence victimization is estimated at 2 % (12–17 year olds).

## Perpetration Prevalence Rates

Only the NEXT study has examined the prevalence of adolescent dating violence perpetration in a national probability sample. In a cohort of students enrolled in tenth graders in the 2009–2010 school year, 31 % reported perpetrating any dating violence. Of these, 21 % reported only psychological perpetration (no physical perpetration) and 9 % reported any physical perpetration. No nationally representative studies have reported prevalence rates for sexual dating violence perpetration. Prior, more localized studies, have reported a wide range of prevalence for dating violence perpetration, depending on the survey measures and severity of violence assessed, ranging from 14 to 82 % for psychological, 11 to 41 % for physical, and 3 to 10 % for sexual dating violence perpetration (Foshee & Matthew, 2007).

## Incidence and Development

Adolescents generally begin to date during middle school, and research suggests that dating violence occurs even in these early adolescent relationships (Miller, Gorman-Smith, Sullivan, Orpinas, & Simon, 2009; Taylor, Stein, & Burden, 2010). With age, more adolescents begin dating and the relationships become longer and more intimate. Correspondingly, the prevalence of dating violence increases across age.

Recent studies have examined the pattern of change in dating violence across time for individuals. These studies have variously found that average trajectories of physical dating violence victimization and perpetration fit a pattern of steady linear increases (Orpinas, Hsieh, Song, Holland, & Nahapetyan, 2013) or a pattern of increasing dating violence until around age 16 or the end of the tenth grade then dropping as adolescents transition into young adulthood (Foshee et al., 2009; Reyes, Foshee, Bauer, & Ennett, 2012). Physical dating violence behaviors may decline in late adolescence as part of the normative development of social and emotional maturity, as is the case with other adolescent antisocial behaviors, e.g., aggression and delinquency (Brame, Nagin, & Tremblay, 2001; Moffit, 1993; Murphy, Brecht, Huang, & Herbeck, 2012).

## Co-occurrence of Violence

In a continuation of findings spanning more than a decade (Bennett & Fineran, 1998; Cano, Avery-Leaf, Cascardi, & O'Leary, 1998; Gray & Foshee, 1997; O'Keefe, 1997), several empirical studies have highlighted that adolescents involved in dating violence are likely to report being both a victim and aggressor of dating violence and report violence in other domains, such as with peers or family members (Bossarte, Simon, & Swahn, 2008; Chiodo et al., 2012; Finkelhor, Ormrod, & Turner, 2009; Foshee et al., 2011; Haynie et al., 2013; Miller et al., 2013; O'Leary, Slep, Avery-Leaf, & Cascardi, 2008; Rothman, Johnson, Azrael, Hall, & Weinberg, 2010; Swahn et al., 2008; Whiteside et al., 2012; Williams, Connolly, Pepler, Craig, & Laporte, 2008). Adolescents who report being a victim and perpetrator of dating violence and those engaged in violence in multiple domains (e.g., peer and romantic relationships) are of special concern because they report more frequent and severe violence and more comorbid problem behaviors (e.g., Bossarte et al., 2008; Chiodo et al., 2012; Foshee et al., 2011; Gray & Foshee, 1997; Haynie et al., 2013; Swahn et al., 2008).

## Biological and Genetic Factors

To date, few studies have examined biological/genetic factors associated with adolescent dating violence. Studies of adult intimate partner violence have found correlates related to nongenetic biological factors, with varying degrees of evi-

dence, in the areas of head injuries, neuropsychology (e.g. intellectual ability, executive functioning, and attention), psychophysiology (physiological basis of mental processes), neurochemistry, metabolism, and endocrinology (Pinto et al., 2010). But no such studies have been conducted on adolescent dating violence.

In the only study to examine genetic influences on adult intimate partner violence, it was found that between 15 and 25 % of the variance in intimate partner violence perpetration was due to genetic influence, depending on the outcome considered (Hines & Saudino, 2004) and that there was evidence of shared genetic risk for psychological and physical violence in adult intimate partner relationships (Saudino & Hines, 2007). Similarly, among children, there appears to be a heritable component of aggression (for a review see DiLalla, 2002). Recent behavioral genetics studies (Beaver, Boutwell, Barnes, & Cooper, 2009), and molecular genetics studies, which examine a specific genetic polymorphism (Beaver et al., 2007; Beitchman et al., 2006; Haberstick, Smolen, & Hewitt, 2006; Liao, Hong, Shih, & Tsai, 2004), have found associations between genetic factors and aggressive behaviors in children, adolescents, and adults. However, there have been no behavioral genetics or molecular genetics studies of adolescent dating violence. It is expected that results for research on links between specific genetic polymorphisms and teen dating abuse will be forthcoming because biospecimens for genotyping have now been collected from the adolescent participants of several large longitudinal adolescent health risk studies. The *Genes in Context Study* funded by the National Institutes of Health is an example (Foshee, 2009).

## Individual Factors Influencing Risk and Resiliency

### Antisocial and Aggressive Behaviors

One of the most widely studied and the most consistent predictors of physical dating violence perpetration and victimization is antisocial and aggressive behaviors during childhood or early

adolescence, particularly aggression against peers (Brendgen, Vitaro, Tremblay, & Lavoie, 2001; Chiodo et al., 2012; Ehrensaft et al., 2003; Foshee, Linder, MacDougall, & Bangdiwala, 2001; Foshee et al., 2011; Foshee, Benefield, Ennett, Bauman, & Suchindran, 2004; Foshee, Reyes, & Ennett, 2010; Herrenkohl, Huang, Tajima, & Whitney, 2003; Magdol, Moffitt, Caspi, & Silva, 1998; Makin-Byrd & Bierman, 2013; O'Donnell et al., 2006; Orpinas, Nahapetyan, Song, Mcnicholas, & Reeves, 2012; Williams et al., 2008; Woodward, Fergusson, & Horwood, 2002). The longest of these studies followed a birth cohort of boys and girls in New Zealand for 21 years. Early onset and adolescent onset of antisocial behaviors (disobedience, temper, aggression, destruction of property, lying, stealing, etc.) was associated with dating violence perpetration and victimization in young adulthood, after controlling for parent and family factors (Woodward et al., 2002).

## Substance Use

Adolescent substance use, particularly alcohol use, has been linked to dating violence perpetration and victimization. Substance use may increase the risk of aggression via several pathways including an immediate/acute effect on information processing and decision making and/or a chronic effect on impairment of functioning. A recent meta-analysis, including both cross-sectional and longitudinal studies, examined the strength of the relation between alcohol use and physical dating violence perpetration and found higher levels of alcohol use are positively associated with dating violence perpetration (Rothman, Reyes, Johnson, & LaValley, 2012). No studies in the meta-analysis were designed to test the acute effects of alcohol consumption on dating violence perpetration. One study included in the meta-analysis found a cross-sectional, but not longitudinal relationship, between alcohol use and dating violence perpetration. The authors suggested that the cross-sectional association could be due to the acute pharmacological effects of alcohol on dating violence which would not be

detected if alcohol use and dating violence were measured months apart (Reyes et al., 2012). In further support of this hypothesis, a subsequent study found alcohol use was associated with increased risk for same-day dating violence perpetration and victimization, for both male and female youth (Rothman, Stuart et al., 2012).

Marijuana use (Reingle, Staras, Jennings, Branchini, & Maldonado-Molina, 2012) and illicit drug use have been prospectively associated with dating violence perpetration (Temple, Shorey, Fite, Stuart, & Le, 2013) for both boys and girls. However, some studies have found the relationship between substance use and dating violence varies by gender, with stronger associations between substance use and dating violence perpetration for girls compared to boys (Foshee et al., 2001, 2010; O'Donnell et al., 2006). There has been a lack of research examining multiple substances and/or poly-substance use in connection to dating violence. Future research should continue to elucidate the pathway by which substance use increases the risk of dating violence, such as the possibility of acute pharmacologic effects and an examination of which risk factors are shared across both substance use involvement and dating violence.

## Sexual Behavior

Sexual intercourse in a romantic relationship often marks an increase in emotional involvement in the relationship. This increase in emotional intensity can lead to greater feelings of vulnerability, and thus, anger and jealousy if a partner does not behave as expected. In turn, this dynamic can increase the risk for dating violence. Sexual intercourse, as measured by early sexual debut (Halpern, Spriggs, Martin, & Kupper, 2009; O'Donnell et al., 2006), being in a relationship that included sexual intercourse (Kaestle & Halpern, 2005), and the number of romantic partners (Halpern et al., 2009), has been identified as predictors of dating violence victimization. Early sexual initiation has been identified as a predictor of dating violence perpetration for boys but not for girls (O'Donnell et al., 2006).

## Internalizing Symptoms

Internalizing symptoms, such as those tapping depression and anxiety, have been studied in relation to dating violence perpetration and victimization. In terms of dating violence perpetration, internalizing symptoms may co-occur with externalizing/aggressive behaviors due to underlying risk factors for both. Internalizing symptoms may be the result of earlier victimization experiences which increase the tolerance and expectedness of aggressive behaviors, and thus increase the risk for dating violence victimization.

There are apparent gender differences in the relation between internalizing symptoms and dating violence. Depression has been found to be a stronger predictor of dating violence perpetration by girls than boys (Foshee et al., 2010; McCloskey & Lichter, 2003), and depression has been found to predict the onset of sexual violence victimization among girls but not boys (Foshee, Benefield et al., 2004). At the most extreme end of psychological health, having considered suicide (suicidal thoughts), has been linked to dating violence in cross-sectional studies (Silverman, Raj, Mucci, & Hathaway, 2001), and prospectively associated with involvement in mutual dating violence (victimization and perpetration) for girls (Chiodo et al., 2012).

## Acceptance of Dating Violence and Gender Norms

The field of dating violence is not unique in finding congruency between attitudes and behaviors (i.e., dating violence behavior is associated with holding attitudes accepting of dating violence). An ongoing area of research is examining normative beliefs as a predictor and as a consequence of dating violence behaviors. Understanding the direction of association between attitudes and behavior is of key importance for designing dating violence prevention programs. Unfortunately, results from the few longitudinal studies that have been conducted are inconsistent. A recent study by Mueller, Jouriles, McDonald, and Rosenfield (2013) found that dating violence

perpetration predicted beliefs about the acceptability of dating violence but not vice versa. Somewhat conversely, another study found that cognitive dissonance between perpetrating dating violence, while not holding beliefs favorable to those behaviors, predicted decreases in later dating violence perpetration (Schumacher & Smith Slep, 2004). Another study found adolescents with a higher level of rape myth acceptance (i.e., believing that victims of sexual violence are to blame for their experience), who also had prior violence towards peers, had a higher likelihood to onset sexual dating violence perpetration (Reyes & Foshee, 2013). Finally, there have been mixed findings based on gender, with one study finding a prospective association for attitudes accepting of violence and dating violence perpetration for boys but not for girls (Foshee et al., 2001), and another study finding no association for either boys or girls (Wolfe, Wekerle, Scott, Straatman, & Grasley, 2004).

## Family Factors Influencing Risk and Resiliency

Several domains of the family context have been linked to adolescent dating violence. These include child maltreatment and harsh parenting, witnessing interparental violence, and attachment and supervision. Research has proposed numerous pathways linking these family factors to adolescent dating violence.

First, child maltreatment and harsh parenting directly exposes the child to violence and results in poorer attachment and adjustment. Empirical studies have consistently found a range of measures of child maltreatment, child abuse, harsh parenting, corporal punishment, neglect, and low parental warmth to predict adolescent dating violence perpetration and victimization for girls and boys (Duke, Pettingell, McMorris, & Borowsky, 2010; Ehrensaft et al., 2003; Gómez, 2011; Miller, Breslau et al., 2011; Sims, Dodd, & Tejeda, 2008; Tyler, Brownridge, & Melander, 2011).

Secondly, witnessing interparental violence indirectly exposes the child to violence. This may lead to increases in stress which in turn puts the adolescent at risk for engaging in antisocial

behavior such as dating violence. Witnessing interparental violence can also increase the acceptance of violence. Several studies have found that exposure to interparental conflict or violence predicts dating violence perpetration (O'Donnell et al., 2006; Sims et al., 2008; Temple et al., 2013; Tschann et al., 2009) and victimization (O'Donnell et al., 2006; Tschann et al., 2009). For example, a prospective study found that having seen or heard physical fights between parents predicted dating violence perpetration and victimization in early adulthood (Ehrensaft et al., 2003). Another study found that parent marital hostility, using coded, video-taped interactions, was prospectively associated with the adolescent's psychological dating violence perpetration 3 years later (Stocker & Richmon, 2007). Other longitudinal studies have not found a relationship between interparental conflict and dating violence (Arriaga & Foshee, 2004; Capaldi & Clark, 1998; Foshee et al., 2001; Lavoie et al., 2002; Lichter & McCloskey, 2004; McCloskey & Lichter, 2003; Simons, Lin, & Gordon, 1998). However, it has been suggested that the lack of association may be due to unexamined moderators of the relationship between witnessing interparental violence and dating violence, such as race and family structure (Foshee et al., 2005) or due to differences in measurement or the control variables used in the studies.

Finally, other aspects of parenting such as parental support and involvement/monitoring have been associated with dating violence perpetration and victimization, in expected directions (Maas, Fleming, Herrenkohl, & Catalano, 2010; Simons et al., 1998; Tyler et al., 2011). The pathway by which these parenting processes influence dating violence may be indirect by affecting peer affiliations and the general pattern of individual antisocial behaviors including substance use and delinquency (Maas et al., 2010; Simons et al., 1998; Tyler et al., 2011).

## Peer Context

Peers are commonly cited as major factors in the study of adolescent problem behaviors, but only recently considered in relation to dating

violence. There are several ways in which peers can increase the risk of dating violence. Thus far, the dating violence literature has focused on a few possible pathways. The first is how peers generally model and reinforce antisocial behaviors. If an adolescent has a peer context that is comprised of antisocial or aggressive peers then peers may model and reinforce antisocial and aggressive behaviors, and stymie normative, prosocial development. Having antisocial peers (Schnurr & Lohman, 2008), and being in an aggressive and deviant peer contexts (Capaldi, Dishion, Stoolmiller, & Yoerger, 2001; Ellis, Chung-Hall, & Dumas, 2013) have been linked to likelihood of dating violence victimization and perpetration.

Another way in which friends can influence dating violence is through their own involvement in dating violence, which serves to model the aggressive partner relationship and increase the normative acceptance of partner aggression. For boys and girls, having friends involved in an abusive dating relationship, either as a victim or a perpetrator, predicted dating violence perpetration (Arriaga & Foshee, 2004; Foshee et al., 2013; Foshee, Benefield et al., 2004). Reyes (2009) found that the association between alcohol use and dating violence perpetration was moderated by friend dating violence such that the association was stronger among adolescents who did as compared to those who did not have friends who were involved in abusive dating relationships. Thus, in addition to the evidence that peers directly affect dating violence, there is some evidence that the peer context may exacerbate associations between other risk factors and dating violence.

Finally, being victimized by peers has been associated with later experiences of victimization by dates. For example, Chiodo, Wolfe, Crooks, Hughes, and Jaffe (2009) found that being a victim of sexual harassment in the ninth grade predicted being a victim of dating violence two and a half years later for both boys and girls. Brooks-Russell, Foshee, and Ennett (2013) identified latent trajectory classes of physical dating violence victimization for boys and girls and found

that, for both, having been victimized by peers was associated with membership in the trajectory group representing the highest amounts of dating violence victimization across adolescence.

## School Context

Schools are an important context to consider in relation to adolescent dating violence. Schools provide a setting for adolescents to make friends and interact, and the school environment can be greatly influenced by school programs, policies, and personnel. There have been a few studies of the effect of school characteristics on dating violence, but findings are inconsistent depending on individual characteristics such as gender and race/ethnicity, which moderate the relationship. School bonding has been associated with decreased odds of dating violence perpetration for girls and increased odds of perpetrating both peer and dating violence compared to peer violence only for boys (Foshee et al., 2011). This gender difference may reflect differences in the meaning of school bonding for boys and girls. For boys, stronger school bonds may translate into more involvement in certain activities that promote violent behavior, such as some school sports, and/or opportunities to interact with romantic partners (Foshee et al., 2011). Three studies found stronger relationships between school factors (school attachment, school connectedness, school economic disadvantage) and dating violence for girls compared to boys (Chiodo et al., 2012; Cleveland, Herrera, & Stuewig, 2003; Spriggs, Halpern, Herring, & Schoenbach, 2009).

Schnurr and Lohman (2008) found that perceptions of an unsafe school was a risk factor for dating violence perpetration for African American males; whereas, contrary to expectations, high levels of school involvement during early adolescence was a risk factor for Hispanic females' perpetration of dating violence. The authors speculated that this may be because school involvement differentially increased popularity, and therefore their dating opportunities, and

attractiveness to dating partners. In summary, the impact of the school environment on adolescent dating violence appears to depend on a combination of individual and school characteristics.

## Neighborhood Context

Neighborhood context is an important factor to consider in relation to adolescent dating violence because perceptions of a neighborhood can influence the social norm for violent behaviors or beliefs about sanctions for violence. Measurement of neighborhood characteristics can come from individual-level or aggregated neighborhood-level data. Methods that use individual-level reports of neighborhood characteristics can be biased because reports about the neighborhood may be influenced by one's own behavior. When reports about a neighborhood are aggregated across multiple individuals, this reporting bias is reduced.

Studies that used individual-level perceptions of neighborhood characteristics found that neighborhood disorganization, lower perceived neighborhood monitoring, and lower perceived neighborhood support were related to past year dating violence perpetration and victimization (Banyard, Cross, & Modecki, 2006; Champion, Foley, Sigmon-Smith, Sutfin, & DuRant, 2008). A longitudinal study using data from Add Health found that witnessing violent crime (someone being shot or stabbed) in the prior 12 months was related to an increased risk of dating violence victimization during adolescence, and a continuation of partner violence victimization into adulthood (Spriggs, Halpern, & Martin, 2009). Another study found that neighborhood organization was protective against dating violence perpetration for both males and females, but only protective against victimization for males (Champion et al., 2008). Several neighborhood factors have been found to be unrelated to dating violence including neighborhood monitoring and organization (Banyard et al., 2006; Champion et al., 2008), and neighborhood disadvantage (Foshee et al., 2008).

Using longitudinal data, aggregated across individual reports, Jain, Buka, Subramanian, and Molnar (2010) found that higher levels of collective efficacy (e.g., community cohesiveness,

willingness to intervene with a neighbor) significantly reduced the risk of dating violence victimization for males but not for females, and was not related to male or female perpetration. Rothman et al. (2011) found that adolescents', but not adults', perceptions of lower collective efficacy, lower social control, and increased neighborhood disorder was associated with past month dating violence perpetration. Thus, while studies have found some associations between neighborhood factors and dating violence, the results have been inconsistent depending on the methods used and which neighborhood characteristic is under investigation. Additional research is needed to clarify which aspects of neighborhood context are related to dating violence perpetration versus victimization and the moderators of those effects. Future research could also do more to establish temporality of the relationship and control for compositional effects (clustering of high-risk individuals) that may confound associations.

## Media Influences

Few studies have examined the role of media exposure on dating violence. A recent study found that exposure to video game violence was not related to dating violence perpetration (Ferguson, San Miguel, Garza, & Jerabeck, 2012). Another study with girls found that having watched X-rated movies in the past 3 months predicted dating violence victimization 1 year later (Raiford, Wingood, & Diclemente, 2007). Future research could explore if there are particular messages or depictions that increase the risk of dating violence, if media influences perpetration behaviors differently than victimization, and if effects differ for boys and girls.

## Evidence-Based Treatment Interventions for Dating Violence

### What Works

While at least one dating violence prevention program has examined and demonstrated effectiveness in secondary prevention (reducing

dating violence already occurring) (Foshee, Bauman et al., 2004), this program, and other similar prevention programs, are designed to be implemented in a general population of adolescents, not in a target population of adolescents already in a relationship marked by dating violence. Aside from these program effects, randomized control trials have not been conducted with adolescents in violent romantic relationships to identify effective treatment interventions.

## What Might Work

### Hotlines and Internet Resources
There are many national and local internet resources available to adolescents, as well as concerned family, friends, teachers, and others. These resources help to identify warning signs of an abusive dating relationship and tips and advice for how to safely end a relationship. Websites sometimes offer live chat options and often provide referrals to 24 h hotlines and/or local community resources such as domestic violence shelters. Most of the hotline and local resources are crisis intervention services that are intended to be brief in duration and may have a particular focus on victims of sexual assault. These hotlines and web resources have not been evaluated in the form of randomized controlled trials, due to challenges of constructing control groups.

### Community Resources
Many communities have domestic violence organizations that provide services to women who are victims of domestic violence. These organizations frequently provide counseling or counseling referrals, support groups, legal and/or medical advocacy, and/or emergency shelters. These services are primarily designed for the experiences of adult intimate partner violence, which differs in many regards from adolescent dating violence, particularly with respect to need for emergency shelter and advocacy and legal services. Although there have been some limited attempts to evaluate these services (Bennett, Riger, Schewe, Howard, & Wasco, 2004), as is the case with hotlines and web resources, community domestic violence

services have not been evaluated in the form of randomized controlled trials.

### Clinical Screening
Brief screening by healthcare providers may be an effective way to identify adolescents in a violent relationship and provide a brief counseling intervention (Miller, Decker et al., 2011). If appropriate mental health and social services are not available directly from the healthcare provider, then it is critical that screening is followed with referrals to local resources and services.

## What Doesn't Work

Not enough is known to identify ineffective treatment interventions due to lack of rigorous studies finding null or iatrogenic effects.

## Psychopharmacology and Dating Violence

In our review of the literature we found no widespread effort to incorporate medications for the prevention or treatment of adolescent dating violence.

## The Prevention of Dating Violence

### What Works

### Universal School-Based Programs
Several school-based prevention programs have been demonstrated to prevent dating violence using randomized controlled trials. These include the following programs: *Safe Dates* (Foshee et al., 2005), *Fourth R: Skills for Youth Relationships* (Wolfe et al., 2009), and *Shifting Boundaries* (Taylor, Stein, Mumford, & Woods, 2013). Each of these programs will be briefly summarized as well as which dating violence outcomes were impacted. Overall, these programs include structured curricula that incorporate many different types of teaching modalities such as presentation of didactic information,

interactive activities, discussion groups, media analysis, and role-playing. These programs are typically designed to increase the adolescent's knowledge of dating violence; change attitudes and norms related to the acceptability of dating violence and gender-based expectations; and improve communication, conflict resolution, and help-seeking skills. The curricula are typically delivered by teachers in middle school or early high school. Two of the programs have school-based components that go beyond the classroom to affect the school environment, such as teacher training, posters in the hallways, student-led safe-school committees, and higher levels of faculty/security presence.

The *Safe Dates* program was designed for eighth and ninth grade students and includes a ten session curriculum, theater production, parent materials, and a poster contest (Foshee et al., 2005; Foshee, Bauman et al., 2004). The goals of the program include: (1) changing adolescent dating violence and gender-role norms, (2) improving peer help-giving and dating conflict-resolution skills, (3) promoting victim and perpetrator beliefs in the need for help and seeking help through the community resources that provide it, and (4) decreasing dating violence. The randomized controlled trial in 14 schools demonstrated that up to 4 years after the intervention, the treatment condition reported less psychological, moderate physical, and sexual dating violence perpetration as well as less moderate physical dating violence victimization.

The *Fourth R: Skills for Youth Relationships* program was designed to be integrated into health education classes for eighth and ninth grade students (Wolfe et al., 2009). There are three modules, consisting of seven 75 min lessons, which address (1) personal safety and injury prevention, (2) healthy growth and sexuality, and (3) substance use and violence. The program seeks to develop relationship skills, interpersonal skills, and problem-solving skills. The program is taught by teachers and utilizes role-playing and feedback from peers and teachers. The randomized controlled trial with 20 schools found that two and a half years after the intervention the treatment condition had

significantly lower physical dating violence for boys, but not girls (Wolfe et al., 2009).

Finally, the most recent prevention program to be evaluated with a randomized controlled trial is called *Shifting Boundaries* (Taylor et al., 2013). The intervention was designed to test the additive effects of a classroom-based curriculum and a building-based intervention to prevent dating violence and sexual harassment among sixth and seventh graders. The six session curriculum focused on the laws and consequences of dating violence, establishing and communicating boundaries in relationships, and the role of bystanders. The building-based components included a "building-based restraining order," posters to increase awareness and reporting of dating violence/harassment, and hotspot mapping of risk spaces in order to increase the presence of school personnel. Findings indicated that the building-based intervention and a combined implementation of the building- and classroom-based intervention were associated with a reduction in sexual violence victimization from dating as compared to the no-intervention control group. The building-based program components were associated with significant prevention effects, whether implemented on their own or in combination with the classroom-based curriculum suggesting that there may be an independent benefit of building-based activities to prevent dating violence (Taylor et al., 2013).

## Programs with High-Risk Youth

Two prevention programs have targeted a high-risk population and provided programming in a community-based, rather than a school-based setting (Langhinrichsen-Rohling & Turner, 2012; Wolfe et al., 2003). Both of these programs, described below, were evaluated using randomized controlled trials.

The *Youth Relationship Project* was evaluated in a sample of 158 adolescents at risk for dating violence because of their history of maltreatment (Wolfe et al., 2003). The curriculum consists of 18 sessions targeting three components: education and awareness of abuse and power dynamics in close relationships, skill development, and social action. The program was successful in

reducing some of the dating violence outcomes measured including physical dating violence perpetration, emotional dating abuse victimization, and victimization from threatening behaviors (Wolfe et al., 2003).

The *Building and Lasting Love* program was designed to prevent and reduce dating violence among African American adolescent girls who were pregnant and receiving pregnancy services at a community clinic (Langhinrichsen-Rohling & Turner, 2012). The four session intervention targeted communication skills, emotional regulation, coping strategies, and understanding signs of dating violence and creating a safety plan. The program was evaluated with a sample of 72 adolescent girls and utilized a wait-list design. Findings indicated that the program was associated with a reduction in psychological dating abuse perpetration and severe physical victimization.

### Family-Based Programs

There has only been one family-based dating violence prevention program evaluated in a randomized controlled trial, *Families for Safe Dates* (Foshee et al., 2012). The program consists of six booklets mailed to caregivers of 13- to 15-year-old adolescents. The booklets contain interactive activities designed to increase the caregivers' motivation for talking to their adolescent about dating violence, improve their knowledge of dating violence, and increase their date rule setting; alter adolescent norms related to dating violence and improve their conflict management skills; and improve communication between adolescents and caregivers. The program also included a phone call from a health educator who assessed booklet completion, answered questions, and encouraged participation. The randomized controlled trial found a significant effect on physical dating violence victimization, and the effects on other dating violence behaviors were in the expected direction, although not significant. Despite this positive finding, the length of follow-up was 3 months, and a lasting benefit has not yet been tested.

### What Might Work

### Recent Expansions to Evidence-Based Prevention Programs

There have been two recent multi-site studies that have sought to extend evidence-based prevention curricula in schools into a comprehensive strategy that incorporates school, family, and community intervention components. The Centers for Disease Control and Prevention has undertaken an initiative called *Dating Matters* (Tharp, 2012). The centerpiece of the initiative is school-based curricula based on the *Safe Dates* program (described above) delivered annually to students in sixth through eighth grade (with modifications for grades 6 and 7). The program augments the school-based curricula with curricula delivered to parents (*Families for Safe Dates* in eighth grade, modified *Parents Matter!* (Dittus, Miller, Kotchick, & Forehand, 2004) in sixth grade, and a hybrid of the two curricula in seventh grade), and a media campaign incorporating social media communication, text messaging, and local events for youth in the intervention communities. The initiative also aims to build the capacity of local health departments, by assessing local policy related to adolescent dating violence prevention and supporting efforts to enhance those local policies. Similarly, the Robert Wood Johnson Foundation and Blue Shield of California Foundation have undertaken a multi-site evaluation of a dating violence prevention program targeting 11- to 14-year-old called *Start Strong: Building Healthy Adolescent Relationships* (Robert Wood Johnson Foundation, 2013). The intervention consists of in-class curriculum (*Safe Dates* or *Fourth R: Skills for Youth Relationships)*; outreach to parents, teachers, and other key adults; policy change within the school and larger community; and social marketing strategies. The evaluation is a longitudinal, quasi-experimental design with four intervention schools and four comparison schools. Findings from these two initiatives are expected to increase evidence for comprehensive prevention strategies.

## School-Based Programs

Beyond the school-based prevention programs described previously, there are several school-based programs which may be effective but as of yet there is not adequate evidence. This is due to three primary reasons: (1) lack of an evaluation using a randomized controlled trial, (2) the evaluation did not include assessing the program's impact on dating violence behaviors, or (3) the program used a randomized controlled trial and demonstrated effects on related behaviors, but did not evaluate effects on dating violence.

Among the promising programs are those programs which have found a reduction in dating violence norms or attitudes but were not able to assess if the program affected dating violence behaviors. These programs include the *Building Relationships in Greater Harmony Together* (B.R.I.G.H.T) program (Avery-Leaf, Cascardi, O'Leary, & Cano, 1997), the *Dating and Sexual Responsibility* program (Pacifici, Stoolmiller, & Nelson, 2001), and the *Adolescent Dating Violence Program* (Kraizer & Larson, 1993). In addition to these programs, there are evidence-based prevention programs to prevent related health behavior outcomes such as bullying, peer aggression, and programs to promote positive youth development (Institute of Behavioral Science, 2013; Substance Abuse and Mental Health Services Administration, 2013). It is possible that these programs may have the additional benefit of preventing dating violence, due to shared risk factors and/or co-occurrence with dating violence, but this remains to be demonstrated.

## Bystander Interventions

Recent studies have considered the role of a peer bystander intervening when witnessing dating violence among peers (McMahon & Banyard, 2012). This approach has been considered to prevent dating violence by changing the overall normative acceptability of dating violence and by increasing prosocial bystander behaviors which, in turn, prevent dating violence. A cluster-randomized trial of a program delivered by coaches to high school male athletes found that after the intervention, the adolescents had higher intentions to intervene when witnessing dating violence and more intervention behaviors, but there was no effect on the students' own dating violence behaviors (Miller et al., 2012). A bystander education program that targeted sexual violence among college students (not limited to sexual violence within a romantic relationship) found the program increased knowledge, attitudes, and behaviors to prevent sexual violence (Banyard, Moynihan, & Plante, 2007). However, another study did not find long-term reduction in sexual violence or increase in bystander behavior (Gidycz, Orchowski, & Berkowitz, 2011). Thus, while there are some indications a bystander approach may be useful, more research is needed to clarify the effectiveness.

## What Doesn't Work

Not enough is known to identify ineffective practices due to lack of documentation in the literature; however, it is likely that programs that are otherwise well designed may lack an adequate dose or have poor implementation and/or evaluation. What is beginning to be understood is which components of intervention programs mediate program successes and which components do not. Identifying which program components are and are not associated with dating violence prevention can be useful in refining prevention programs. In the *Safe Dates* program, effects were mediated primarily by changes in dating violence norms, gender-role norms, and awareness of community services. The program did not affect conflict management skills or belief in the need for help (Foshee et al., 2005). Conflict resolution skills were also not found to be mediators in the *Youth Relationship Project* or *Families for Safe Dates* (Foshee et al., 2005; Wolfe et al., 2003).

In addition to null effects on mediators, there have been a few reports of iatrogenic effects on dating violence outcome from randomized controlled trials of dating violence prevention programs. In a trial of a middle school intervention designed to reduce gender violence and sexual harassment, researchers found that after the intervention, dating violence perpetration increased,

despite finding decreases in peer sexual violence victimization and peer violence perpetration. However the iatrogenic effects were for 2 of 48 outcomes tested, and may be explained by increased reporting due to the intervention (Taylor et al., 2010). In a 4 year follow-up to the *Safe Dates* program, the implementation of a booster session was associated with reports of more psychological violence perpetration and serious physical and sexual victimization among those with a high level of prior involvement in dating violence (Foshee, Bauman et al., 2004). Therefore, the authors expressed caution about the value of booster sessions for adolescents already in abusive relationship when not paired with additional support services. These results underscore the importance of rigorous evaluation of prevention programs.

## Recommended Best Practices

The field of dating violence research is quickly growing, but still young. Current research is advancing our understanding of risk and resiliency factors, but much more work remains to identify best practices for the prevention and treatment of dating violence. The empirical evidence described in the chapter indicates that programs should address:

- Dating violence perpetration by both boys and girls
- Psychological dating violence in addition to physical and sexual dating violence
- Overlap in victimization and perpetration behaviors

The current best practice for dating violence prevention is to use an evidence-based curriculum or program and ensure the program is implemented with fidelity. School-based primary prevention programs should begin as early as the sixth grade, since dating and dating violence is already happening then. Evidence-based prevention programs, such as those discussed in this chapter, share the following characteristics:

- Contain material relevant to those experiencing victimization and those perpetrating
- Address multiple risk factors for dating violence, as informed by theory

- Designed to be of adequate length to produce effects
- Use interactive teaching modalities

Finally, there is growing evidence supporting prevention activities that engage or target parents, schools, and communities in a comprehensive approach. These prevention activities should continue to be enhanced and evaluated for effectiveness.

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# Adolescent Sex Offenders

**30**

JaNelle M. Ricks and Ralph J. DiClemente

## Introduction

Sexual assault is one of the fastest growing violent crimes in the United States (Shaw, 1999). Around the country, police, prosecutors, mental health professionals, and probation officers continue to struggle to deal with the rise in the number of juvenile sex offenders. It is estimated that in the United States, juveniles commit almost half of all child molestations and about 14 % of all rapes (Federal Bureau of Investigation, 2011). Among adult sexual offenders, nearly 50 % have reported that they began their history of offenses during adolescence (Abel, Mittelman, & Becker, 1985; Groth, Longo, & McFadin, 1982). Moreover, during adolescence many offenders exhibit patterns of nonviolent sexual offending and progress to more serious sexual offenses as

adults (Longo & Groth, 1983). Additional evidence suggests that only 15 % of juvenile sex offenders go on to commit sexual offenses within five years of a first conviction (Caldwell, 2002; Worling & Långström, 2006). Some may go on to commit over 380 sexual offenses during their lifetime (Ertl & McNamara, 1997). Although these statistics indicate that juvenile sex offenses are more prevalent than was once thought, estimates are likely to be low due to issues of secrecy and under-reporting.

The consequences of sex offending are substantial for victims, society, perpetrators, and their families. In addition to the human costs in terms of emotional and physical suffering, significant financial costs are incurred as a function of child welfare, juvenile justice system involvement, and therapeutic intervention (Prentsky & Burgess, 1990). Statistics such as those mentioned earlier, and the high risk that perpetrators pose to their victims and the community at large, support the need for and increased understanding of factors influencing the development of sexually aggressive behavior, reliable assessment strategies, and effective treatment programs. Attention directed to these areas will assist with early intervention and may decrease the likelihood that offenders will continue such destructive patterns of behavior.

Sexual offending, a legal term, refers to a broad range of behaviors, yet is generally defined by any sexual contact which involves coercion,

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manipulation of power, or is committed against individuals who are unable to give informed consent. Ertl and McNamara (1997) provide descriptions of three categories of sexual offenses: those which are referred to as hands-off offenses, which include voyeurism, making obscene phone calls, and exhibitionism; hands-on offenses, which usually include some type of force, aggression, or coercion, such as fondling or rape; and pedophiliac offenses, in which the victim is at least four years younger than the perpetrator. It should be noted that offenders may also select victims who are significantly lower functioning than themselves, putting them in a position of power so that they can manipulate their victim.

Adolescent sex offenders have also been classified as a function of their motives and other factors that mediate their pattern of offending. Becker (1988) provides an overview of four types of sexual abusers, with most offenders displaying features of each: (1) the true paraphiliac with a well-established pattern of deviant sexual arousal; (2) an antisocial youth who not only sexually offends, but exploits people in other ways as well when the opportunity presents itself; (3) an adolescent with a psychiatric or neurological/biological disorder that affects his/her ability to control aggressive and sexual impulses; and (4) an adolescent that does not have adequate social and interpersonal skills, who seeks sexual gratification from younger children because it is unavailable from peer groups (p. 327).

Adolescent sexual offending is a complex phenomenon that defies a simplistic explanation. As such, many theories have been proposed to explain why some children and teens sexually abuse others. However, to date there is no empirically derived and tested model to explain why adolescents commit sexual crimes. The most widely accepted theory that provides an explanation for sexually abusive behavior in children is learning theory. Learning theory is based on the concept that all behavior and knowledge is learned through experience. In using this theoretical framework to explain sexually abusive behavior in children, theorists purport that sexually abusive behavior in children is linked to many factors, including exposure to sexuality and/or violence,

early childhood experiences (e.g., sexual victimization), exposure to child pornography, substance abuse, and exposure to aggressive role models or family violence (Ryan & Lane, 1997).

Early theories about children who sexually abuse others proposed that these individuals move through a predictable progression or a "sexual abuse cycle." Theorists supporting this perspective suggest that the pathway to the development of sexually aggressive behaviors begins with the adolescents having a negative self-image, which results in an increased probability of maladaptive coping strategies when confronted with negative responses to himself or herself. The negative self-image also leads the individual to predict a negative reaction from others. To protect against this anticipated rejection, the adolescent will become socially isolated and withdrawn and will begin to fantasize to compensate for his or her feelings of powerlessness. Finally, the sexual offense is carried out, leading to more negative self-imaging and thoughts of rejection, facilitating a repetitive cycle (Ryan & Lane, 1997). More recently this cycle has been criticized as too rigid—interviews with offenders reveal that life problems (at school, in the family) and any number of thoughts or feelings can trigger an offending behavior as well (Longo, 2002). In recent years, more integrative theories have been proposed. For instance, Ward and Beech (2005) integrated macro-level factors, such as evolutionary selection pressures and sociocultural factors, with a host of individual factors such as genetic predispositions, early experiences of sexual or physical abuse, and individual differences in empathy. The literature in this area is developing, and more comprehensive information regarding these theories are emerging to assist with early detection and risk identification and to provide adequate services prior to the occurrence of more serious sexual offenses.

This chapter provides an overview of biological, individual, familial, social, and behavioral characteristics of adolescents who have sexually offended. This chapter also reviews common approaches to treating and preventing recurrent sexually aggressive behavior in juveniles. We will use both terms— "problem sexual behaviors" and "sexual

offender"—throughout the chapter. "Problem sexual behaviors" is less stigmatizing and aggressive than the term "sexual offender" and has been increasingly used when describing treatment of youth engaging in deviant sexual behaviors. The term "adolescent sex offender," however, still more widely exists in empirical literature and so will be used in our general non-treatment discussions.

## DSM V and Incidence/ Prevalence Rates

No information was available regarding DSM V and sexual offending in adolescents.

## Biological/Genetic Factors

Very little empirical evidence exists to support biological factors as direct causal agents of adolescent sexual offending (Berlin, 1997; Berlin & Meinecke, 1981). Adult studies have focused on factors such as IQ, handedness, neurological disorders, and hormonal imbalance, with mixed results. Existing studies examining this phenomenon among juvenile sex offenders suggest that the prevalence of intellectual and cognitive impairments of this group is an area worthy of further exploration. For example, Ferrera and McDonald (1996) conducted a review of the literature and determined that approximately 33 % of juvenile sex offenders have some form of neurological impairment. The presence of cognitive disorders in the background of juvenile sex offenders carries significant implications for treatment. It is noted that the neurologically impaired juvenile offender who goes undetected in treatment settings is not likely to benefit significantly from treatment due to difficulties associated with concentration, comprehension, and memory (Ferrera & McDonald, 1996).

IQ is the biologically relevant trait most commonly assessed in sexual offenders. Intellectual capacity of sexual deviants has been examined by researchers and clinicians since at least 1931 (Frank, 1931). Research of adolescent sex offenders has inconsistently predicted a difference between IQ scores of sex-offending and non-sex-

offending juveniles. For example, in their review, Ferrera and McDonald (1996) found that more than one-quarter (25.2 %) of juvenile sex offenders had IQ scores below 80, in contrast to 11.1 % of non-sex-offending adolescents who scored in this range of functioning. However, results of a meta-analysis of 236 studies conducted by Cantor, Blanchard, Robichaud, and Christensen (2005) showed that the juvenile sexual offender samples did not differ significantly from the juvenile nonsexual offender samples. Additionally, both the juvenile sex offenders and juvenile nonsexual offenders scored significantly lower in IQ than their adult counterparts, suggesting a general underdevelopment of cognitive capacity in adolescents.

In the literature there exists a divide between arguments for direct causal associations and indirect causal associations between IQ and sexual deviancy. Evidence for a direct association has shown that poor cognitive function reflects disinhibited decision-making or failure to understand consequences, leading to sexual offending behavior. This further suggests that persons with lower cognitive abilities may have poorer judgment or impulse control and thus may be more likely to commit opportunistic sexual offenses (Galski, Thornton, & Shumsky, 1990; Stone & Thompson, 2001). Additionally, individuals with lower cognitive abilities may have an increased likelihood of being sexually rejected by peers and therefore may be more likely to turn to children or to engage in sexual coercion against peers or adults (Seto & Lalumière, 2010). In contrast, evidence of an indirect association between IQ and sexual offending offered by Blanchard et al. (2002) and Cantor et al. (2004, 2005) suggests that a perturbation of prenatal or childhood brain development produces both pedophilia and low IQ. Thus, low IQ would correlate significantly with sexual deviancy, not because it causes sexual deviancy, but because both characteristics result from some common etiological factor.

## Individual Factors

Although some researchers have conducted descriptive studies in an effort to develop a clinical picture of juvenile sexual offender character-

istics and behaviors, the limited frequency of such behaviors identified within research studies makes it difficult to distinguish unique features between offending and non-offending adolescents. Thus, to date, there is no clear, meaningful, and responsible way to distinguish between actual and potential juvenile sexual offenders (Becker & Hunter, 1997; DiCataldo, 2009). Studies have found that juvenile sexual offenders did not differ from juvenile nonsexual offenders according to their early childhood problems, current behavioral adjustment, personality traits, antisocial attitudes, and family background characteristics (Butler & Seto, 2002; Freeman, Dexter-Mazza, & Hoffman, 2005; Ronis & Borduin, 2007; van Wijk et al., 2005). Additionally, while we can describe features characteristic of many sexual offenders, they do not apply to all of them; many do not possess all or any of these characteristics. Hence, traits and behavior may vary from one individual to another, and currently we only have the ability to classify a juvenile sex offender after he or she has offended or been discovered (Rich, 2003).

Nonetheless, descriptive studies indicate that the majority of sex offenders are male, and that their most likely victims have been noted to be female, followed by young boys. The average offender is 14 years of age, and possesses a low to average IQ. Nearly half of all juvenile sexual assaults are contact offenses, are committed under the threat of force, and are inclusive of vaginal or anal penetration or sodomy. Histories of physical and sexual abuse and exposure to domestic violence have also been noted to be prevalent among this population. Additionally, many juvenile offenders have been exposed to pornography as early as age 7 (Center for Sex Offender Management, 1999; Ryan, 1999; Ryan, Miyoshi, Metzner, Krugman, & Fryer, 1996; U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, 2009; Weinrott, 1996).

Very little research has been done on differences between male and female adolescent sex offenders. Evidence shows that adolescent females represent only 3 % of forcible rape cases and 5 % of other violent sex offenses handled by

the juvenile courts annually (Snyder & Sickmund, 2006). However, it has been suggested that many sex offenses committed by females often go unnoticed, undetected, or even ignored by law enforcement officials (Denov, 2004; Scavo, 1989; Vandiver & Kercher, 2004). Thirty-one percent of females who commit sex offenses are younger than 12, compared to 14 % of their male counterparts (U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention, 2009). Females are also more likely than boys to victimize younger children (Fehrenbach & Monastersky, 1988; Fehrenbach, Smith, Monastersky, & Deisher, 1986; Fromuth & Conn, 1997; Johnson, 1989). It is of interest to note that although arrests of male adolescents for sex offenses have decreased in recent years, the number of adolescent females coming to the attention of the juvenile courts for sex offenses has increased. For example, between 2009 and 2010, arrests involving female-perpetrated forcible rapes grew by 9.5 % (Federal Bureau of Investigation, 2011).

Graves, Openshaw, Ascione, and Ericksen (1996) incorporated meta-analysis in evaluating 20 years (1973–1993) of empirical data stemming from demographic research on juvenile sex offenders. Through their analysis, three categorical subtypes of offenders emerged: (1) pedophilic offender, (2) sexual assault offender, and (3) mixed offense offender. The pedophilic offenders were identified as youth demonstrating limited confidence in their ability to engage in social interactions and being socially isolated from their peers. Findings further indicated that the youth in this group consistently molested children who were significantly younger than themselves as well as had a strong preference for female victims. The subgroup of sexual assault offenders were juveniles whose first offense was reported when they were between the ages of 13 and 15. They were more likely to victimize females, and they committed offenses against victims of various ages. Mixed offense offenders were described as youth who had committed a variety of offenses, including exhibitionism, voyeurism, frotteurism (frotteurism involves actual touching and rubbing of the genitalia against a non-consenting person, in association

with sexual arousal) as well as other offenses involving physical contact. These youth were identified as having the most severe degree of social and psychological difficulty. The majority of these youth committed their first offense between the ages of 6 and 15, and their usual victim was female.

Relative to other demographic characteristics, the meta-analysis yielded results indicating that a greater proportion of youth sexual offenders come from middle to lower socioeconomic status familial backgrounds, 59 % and 44 %, respectively. As it pertains to race, 60 % of the sexual assault subgroup and 59 % of the pedophilic and mixed offenders were Caucasian. Similar to the mixed offender group, sexual assault offenders were more likely to be Caucasian rather than Black or Hispanic. Findings related to religious affiliation among these groups were limited—38 % of the adolescent offenders reported that they were Catholic, while 62 % did not identify a religious affiliation.

There are a broad range of factors that may contribute to the development of sexually abusive behavior. At the individual level factors that have been associated with adolescent sexual aggression include a history of sexual and/or physical abuse: social isolation, poor impulse control or impulse conduct disorder, empathetic deficiencies, and limited cognitive abilities.

Rates of juvenile sex offenders who have experienced sexual abuse as children range from 40 to 80 %, while proportions of juvenile sex offenders who were victims of physical abuse range from 25 to 50 % (Becker & Hunter, 1997). It is important to note that the abusive experiences of juvenile sex offenders have not been found to differ consistently from those of non-sex-offending juveniles (Knight & Prentsky, 1993). Thus, the role of child maltreatment in the etiology of sexual aggression remains unclear. However, these trends indicate the importance of considering the extent to which a history of childhood sexual or physical abuse plays a role in the development of the sexual offender. Additionally, theoretical models of sexually abusive behavior have been developed that support the ideology that the experience of victimization is a significant influential factor in the development of sexually offending behavior (Becker & Kaplan, 1993; Ryan & Lane, 1997).

Behavioral disorders are commonly diagnosed in children and adolescents who sexually abuse others (Center for Sex Offender Management, 1999). Kavoussi, Kaplan, and Becker (1988) reported that the most common psychiatric diagnosis in their sample of male juvenile sex offenders was a conduct disorder (48 %). Moreover, a much higher rate was revealed among adolescents who had raped or attempted to rape adult women (75 %). It should be further noted that many offenders are provided with a diagnosis of conduct disorder due to the fact it provides the very best description of behaviors associated with sexual offending.

The incidence of attention deficit hyperactivity disorder (ADHD) has not yet been adequately explored among juveniles with sexual aggression. Yet, ADHD has been found in up to 22 % of samples, with more than one-third of offenders exhibiting some traits of ADHD (Becker & Kaplan, 1993; Becker, Kaplan, Cunningham-Rathner, & Kavoussi, 1986; Kavoussi et al., 1988). Kavoussi et al. (1988) also found that out of their sample of 58 juvenile sex offenders in outpatient treatment, nearly 7 % met the full criteria for attention-deficit disorder. Close to 38 % of the juveniles revealed some symptoms of attention-deficit disorder. Similarly, Miner, Siekert, and Ackland (1997) found that more than 60 % of their sample of incarcerated juvenile sex offenders exhibited hyperactive and restless behaviors, and 75 % were identified as having attention problems, behavior problems, a learning disability, or all three. Additionally, few differences were found between sex-offending and non-sex-offending delinquents relative to these patterns of behavior (Awad, Saunders, & Levene, 1984; Gilby, Wolf, & Goldberg, 1989). Given the commonalities in attention deficits, behavior problems, and school difficulty across both juvenile sex-offender and non-sex-offending delinquent populations, some researchers conclude that attention problems and social and general behavioral difficulties are factors that are common to most troubled youth.

## Family Factors

According to the literature, a strong relationship exists between dysfunctional families and the incidence of delinquent behavior in children of such families. Specifically, descriptive studies indicate that adolescent sexual offenders demonstrate the tendency to have high rates of family instability, parent–child separation, exposure to violence, and parental psychopathology (Miner et al., 1997; van Ness, 1984; van Wijk et al., 2005). Lee, Jackson, Pattison, and Ward (2002) provided support for this perspective in indicating that family dysfunction often goes hand in hand with childhood difficulties among sexual offenders and further stated that childhood sexual, physical, and emotional abuse and family dysfunction are general developmental risk factors for sexually aggressive behavior.

Studies that have evaluated family instability as a function of parent–child separation vary in percentages of juveniles who are from intact families. For example, Graves et al. (1996) used meta-analysis to analyze the findings of multiple studies examining characteristics of juvenile sex offenders that were conducted over a 20-year period. The findings from this analysis suggested that juveniles who committed sexual assaults against victims who were their peers or older were more likely to come from single-parent homes (78 %) than those who committed pedophilic offenses (44 %) or mixed offenses (37 %). Pedophilic offenders more frequently stemmed from foster or blended families (53 %). Conversely, Miner et al. (1997) conducted a study among incarcerated offenders which revealed that only 16 % of the juveniles in their sample came from intact families. It is important to take into account, however, that the low rate of intact families reported in this study may reflect the nature of the sample evaluated (i.e., incarcerated juveniles). Nevertheless, in contrast to this study, Cellini (1995) reported that approximately 70 % of juvenile sex offenders lived in two-parent homes at the time their abusive behavior was discovered. It was not clear, however, whether the two parents in these homes were

both birth parents. Additionally, findings from a meta-analysis by Seto and Lalumière (2010) found that not having lived with both biological parents, whether because of parental separation, divorce, or any other reason, did not predict adolescent sex-offending behavior.

Collectively, these studies suggest that many adolescent offenders have experienced physical or emotional separation from their parents. The cause of this separation may be family instability, parental separation or divorce, or residential placement of the juvenile. However, despite the causes it is clear that parent–child separation may mediate a significant disruption in emotional and personality development among adolescents who commit sexual offenses.

Histories of maltreatment that are inclusive of neglectful or inadequate parenting, as well as dysfunctional child-rearing environments are also prevalent among both juvenile sexual offenders and nonsexual offenders (Hunter & Figueredo, 1999). The literature indicates that parents of sexual offenders have been noted to experience difficulties with substance abuse and psychological impairments (Awad et al., 1984; Kaplan, Becker, & Martinez, 1992). Both of these factors can influence the extent to which children receive adequate parenting. Miner et al. (1997) conducted a study among juvenile sex offenders and reported that nearly 60 % of the biological fathers had substance abuse histories compared to biological mothers (28 %). The mothers, however, were more likely than the fathers to have a history of psychiatric treatment (23 versus 13 %, respectively). Moreover, Smith and Israel (1987) found that some parents of juveniles who sexually abused their siblings were physically and/or emotionally inaccessible and distant. It was further indicated that some parents evidenced sexual pathology and exposed the juveniles to their sexual behaviors. In regard to involvement in the criminal justice system, recent studies have found that parental criminality may be less influential than previously believed. A meta-analysis by Seto and Lalumière (2010) found that the prevalence of parental criminality was greater for male adolescent non-sex offenders, though not statistically different from male adolescent sex offend-

ers. Similarly, Calley (2012) conducted a study that followed juvenile offenders for two years post-release from residential treatment facilities. Results showed that the relationship between recidivism and parental criminal history was a nonsignificant predictor of recidivism.

Exposure to family violence has also been identified as a common risk factor in the development of sexual violence among adolescents. van Ness (1984) yielded results indicating that 41 % of adolescent sex offenders in his sample had experienced intra-familial violence or neglect during childhood. In contrast, only 15 % of the non-sex-offender sample reported histories of abuse or neglect. In a more recent study, Ryan et al. (1996) reported that 63 % of their sample of 1,000 juveniles witnessed family violence, while Skuse et al. (2000) found that male victims of sexual abuse were more likely to sexually victimize others if they had witnessed family violence. It was further suggested that "it may be more appropriate to view a climate of violence conferring an increased risk, despite whether or not the boy is a direct victim of physical abuse" (p. 229). Similarly, Bentovim (2002) identified family violence as one of three distinguishing factors associated with juvenile sex offenders who are also sexual abuse victims. Jespersen, Lalumière, and Seto (2009) found that sex offenders were three times more likely than non-sex offenders to report a history of abuse. These findings highlight the significant contribution of exposure to violence and history of sexual abuse in the development of sexually deviant behavior.

These studies indicate that a large proportion of adolescents who sexually abuse others experience significant care deficits and commonly grow up in families in which they experience and/or witness violence, lack of empathy, as well as a lack of sexual boundaries. Recently, the manner in which these factors influence the development and progression of sexually deviant behavior in adolescents has been explored by researchers. Davis and Leitenberg (1987) theorize that the manner in which familial dysfunction influences the development of sexual offending behavior may be explained in one of the following ways: (1) when physical aggression or marital violence

are tolerated, the adolescent learns that this is acceptable behavior; (2) neglect and abuse may predispose the adolescent to seek revenge on substitute targets; (3) parental abuse may lower self-esteem and the sexual offense may be a way of restoring self-worth; and finally (4) parental abuse may sensitize a child to more intimate relationships with peers, and consequently, he may socialize and then sexualize relationships with much younger children. Given this information, the cause of juvenile sex offending is more likely to be associated with a combination of factors, including a history of sexual and/or physical abuse, family dysfunction, neglect, exposure to violence, and maltreatment. Additionally, Skuse et al. (2000) argues that a history of childhood sexual abuse is most likely to be a significant factor only when other risk factors indirectly related to the abuse are present. As Rich (2003) suggests "juvenile sexual offending is one possible result of multiple causes that come together in the social environment in which children develop and learn (p. 47)."

## Social and Community Factors

Many researchers have observed significant deficits in social competence among adolescent sex offenders (Becker, 1990; Knight & Prentsky, 1993; Whitaker et al., 2008). Inadequate social skills, poor peer relationships, and social isolation are some of the difficulties that have been identified among this group (Katz, 1990; Miner & Crimmins, 1995). For example, Katz (1990) evaluated social competence among non-sex-offending juvenile delinquents, adolescent "child molesters," and a high school comparison group. Findings revealed that juveniles who had child molestation offenses were more socially maladjusted when compared to the two other groups. Beckett (1999) provides additional support for this finding in stating that "particularly for adolescent child abusers, poor social competency and deficits in self-esteem rather than paraphilic interests in the psychopathic tendencies currently appear to be the best explanation as to why they commit sexual assaults" (p. 224).

Additionally, Miner and Crimmins (1995) reported that juveniles in their study who had committed sexual offenses exhibited fewer peer attachments and felt less positive attachments to their schools when compared with other delinquent and nondelinquent juveniles. These findings highlight the important relationship between a child's psychosocial environment and their ability to meet developmental milestones associated with social competence. Marshall and Eccles (1993) provide an example of this in suggesting that it is through the social environment that developmental vulnerabilities have the opportunity to develop and grow into risk factors or into the assets and strengths that serve as protective factors against risk for sexually deviant behavior. They further indicate that it is through the social environment that children find (or fail to find) love, attention, emotional bonding and attachment, role modeling, structure, supervision, guidance, social relationships, physical and emotional security, wisdom and mentoring, information, ideas, and encouragement. Hence, the availability of these critical factors promote optimal development and resiliency to risk factors among adolescents by fostering trust, independence, self-esteem, social mastery and competence, motivation, intimacy, knowledge, morals, satisfaction, and a healthy personal identity (Rich, 2003).

Alternatively, the absence of these factors can facilitate an environment in which a child can develop developmental vulnerabilities and experience significant difficulty in succeeding.

Overall, it is suggested that adolescent sexual offenders lack appropriate social skills, and that this may be associated with their behavior. As a result of research findings that provide support for considering social skill deficits in the development of sexually abusive behaviors among adolescents, many treatment programs have incorporated social skills training as one component of intervention (Becker & Kaplan, 1993; Davis & Leitenberg, 1987). A review of recent literature (Miner, 2007) indicated that a juvenile who is involved in pro-social, educational activities and involved in the community

as a part of rehabilitation treatment has a greater chance of not committing another sexual offense.

## Evidence-Based Treatment Interventions for Adolescent Sex Offenders

### Interventions in Community-based Settings

#### What Works
Community-based treatment is generally offered to juveniles who are enrolled in outpatient groups and/or day programs at a local mental health clinic for their problem sexual behaviors (PSBs)-specific treatment. Careful screening of all potential participants is essential to the success of community-based programming. Generally, thorough assessments take into account issues related to dangerousness as well as severity of psychiatric and psychosexual disturbance. Furthermore, adolescents who are appropriate for community-based outpatient treatment must be deemed to be at a "low risk" for re-offending, as a function of demonstrating increased accountability for their sexual offenses, motivation for change, and an increased level of receptiveness for professional help.

Due to ethical and methodological limitations, few studies documenting evidence-based treatment strategies for adolescent PSBs existent in the literature. One intervention approach, multisystemic therapy for problem sexual behaviors (MST-PSB), has been shown to be a promising advance to treatment of PSB. MST-PSB is a clinical adaptation of the traditional MST approach, which has been found to be effective in treatment of violent and chronic criminal behavior in youths (reviews: Curtis, Ronan, & Borduin, 2004; Sawyer & Borduin, 2011; U.S. National Center for Injury Prevention and Control & US National Institute of Mental Health, 2001). MST-PSB is specifically designed to treat youth (and their families) for problematic sexual behavior and is rooted in Bronfenbrenner's (1979) theory of social ecology.

Empirical evidence from randomized clinical trials showed a long-term effect of MST-PSB treatment on youths (Borduin, Schaeffer, & Heiblum, 2009; Letourneau et al., 2009).

Building upon the research of standard MST, MST-PSB entails a comprehensive family- and home-based approach targeting several factors underlying PSB, across multiple settings. The average duration of treatment is approximately four months, and typically includes approximately 60 h of therapist-family contact, with therapists being accessible to the youth and family 24 h a day, 7 days a week. MST-PSB therapists are encouraged to work with a small number of families at a time and to work in full collaboration with family members and other key figures in the adolescent's life. Therapists provide guidance to parents in an effort to promote supportive structures that facilitate health development of social and relationship skills of youth.

In addition to PSBs, MST-PSB has been shown to be effective in reducing antisocial behavior among diverse populations of youths with serious and chronic PSB (Sawyer & Borduin, 2011). Evaluations have reported significant impact on several shared risk factors for sexual violence including delinquency, antisocial behavior, general aggression, substance abuse, and parent–child relationships. Lower rates of nonsexual delinquent behaviors and substance abuse, fewer problem behaviors, and greater family bonding have all been reported for youth who participated in MST-PSB (Borduin et al., 2009). Additionally, evaluations of MST-PSB found that youth who participated had decreased rates of PSB following participation (Letourneau et al., 2009).

### What Might Work

Recent years have brought a broader understanding of PSBs and movement toward defining this field by research. In addition, community-based treatment has become more readily available. Evaluation and ongoing assessment consider both family response to PSB and structural support necessary for successful community-based treatment.

Relative to the structure and duration of treatment, in outpatient care, on a weekly basis, on average juveniles participate in one session of individual therapy, a maximum of two group therapy sessions, and approximately one 60-min session of family therapy. Additionally, similar to the treatment course described in residential settings, the outpatient treatment trajectory is approximately 18 months (Rich, 2003). While the level of treatment may vary between residential and community programs, interventions for adolescent PSB in community-based treatment settings do not differ significantly in treatment modality and content when compared to programs implemented in residential facilities. A community-based treatment setting is distinct in that this level of treatment provides a forum that assists the juvenile in structuring his or her life to better follow relapse prevention plans, develop and maintain a positive range of activities, and to avoid future incidents of acting out or re-offending (Lundrigan, 2001).

Finally, a common belief about juvenile PSB is that even after treatment, most will offend again. However, juveniles who participate in treatment programs have relatively low sexual recidivism rates—between 7 and 13 % over follow-up periods of two to five years—when compared to recidivism rates that range between 25 and 50 % for nonsexual juvenile offenders (Hunter & Figueredo, 2000). Despite these findings, it has been consistently documented in the literature that a large proportion of adult sex offenders initiate their history of offenses during adolescence (Abel et al., 1985; Groth et al., 1982). Therefore, the concept of relapse prevention is a key issue in working with adolescent PSB.

Relapse prevention strategies are utilized in both residential and outpatient treatment programs as well as among probation officers as a methodology for supervision of youths with PSB once they reenter the community. Relapse prevention is an approach borrowed from treatment programs for addictions (Becker & Kaplan, 1993). Individuals in recovery learn to identify situations that increase their risk of relapse and then rehearse techniques to reduce or avoid such risks. Through this approach, the youth identifies similar situations and their accompanying thoughts and behaviors that make up the sequence

of events leading to the offense. Situations such as being alone with a child, feeling lonely or sexually aroused, or masturbating to thoughts of children increase the risk of relapse. The youth then learns and rehearses coping strategies such as avoidance of at-risk situations, cognitive techniques such as thinking of the consequences of further offenses, and ongoing behavioral techniques such as avoiding thoughts of children when masturbating. The goal is to teach the adolescent that the risk to commit additional sexual assaults persists for a prolonged period and that he must learn management strategies that can be used long after therapy and probation has ended.

### What Does Not Work

To date, specialized treatment strategies for adolescent with PSB that have been tried and identified as ineffective have yet to be documented in the literature.

## Interventions in Residential Settings

### What Works

Due to ethical and methodological limitations, studies documenting evidence-based treatment strategies for adolescent with PSB in residential settings are nonexistent in the literature.

### What Might Work

Settings for juvenile PSB treatment generally consist of inpatient residential treatment or outpatient community-based facilities. When determining whether a youth should receive residential or outpatient services, two factors should be considered. The first issue is that the safety of the community is of primary concern. The second consideration is related to ensuring that youth be placed in the least restrictive environment possible (Ertl & McNamara, 1997). Residential and community-based treatment centers have been designed to balance both the needs of the community and youth with PSB (Shaw, 1999).

According to Bourke and Donohue (1996), residential treatment or inpatient care is recommended for youth with PSB with the following characteristics: (1) the offenses have been numerous and involved more than one individual; (2)

violence or aggression was used during the assault(s); (3) severe and emotional behavior problems are present; (4) antisocial attitudes are demonstrated; (5) there is poor motivation for treatment; (6) suicidal or homicidal ideation is present; (7) a volatile relationship at home threatens the safety of the individual; (8) or lastly, the victim is present in the youth's home (p. 57). Residential programs offer intensive approaches to treatment within a controlled setting for an extended period in time. These programs have higher levels of treatment consistency. In addition, some residential treatment programs encompass offense-specific treatment staff that can enhance safety, increase the efficacy of therapy, and reduce sexual acting out (Lundrigan, 2001).

The secure placement in a less restrictive environment generally plays a therapeutic role in the continuum of care services appropriate for adolescents found unsuitable for other courses of treatment (Bengis, 2010). However, the developmental vulnerabilities of this age group and the typical time periods during which these adolescents are separated from their families and communities may pose need for concern (Grant, Thornton, & Chamarette, 2006). The time away is particularly problematic for those adolescents with existing attachment difficulties as these may worsen (Rich, 2005).

While enrolled in residential care or inpatient care, on a weekly basis, juveniles attend approximately two sessions of individual psychotherapy, a maximum of four group therapy sessions, and extended (60–70 min) family sessions. The average length of residential treatment is approximately 18 months (Rich, 2003). There are specific goals associated with the treatment of PSB. These goals include but are not limited to accepting responsibility for behavior, identifying a cycle or pattern of offending, acquisition of skills through learning methods to disrupt the cycle of abuse, developing empathy for the victim, increasing the use of appropriate social skills, addressing one's own history of sexual abuse, decreasing deviant forms of sexual arousal, increasing accurate sexual knowledge, improving family relationships, and relapse prevention (Ertl & McNamara, 1997; Ryan, 1999; Shaw, 1999; Worling & Curwen, 2000).

The most common treatment models associated with facilitating the aforementioned residential treatment goals are cognitive-behavioral and psychodynamic therapy. A major goal of cognitive-behavioral therapy is to identify core beliefs about self and others that lead to automatic thoughts that influence emotional, physiological, and behavioral responses. Once irrational beliefs are identified and disputed by the client an effective new philosophy can then be created that in turn influences behavior change (Beck, 1979, 1995). Conversely, the goal of psychodynamic therapy is to facilitate an understanding of unconscious motivations and past experiences that shape and drive emotion, cognition, relationships, and behaviors (Rich, 2003). Unfortunately, it has been noted that while these treatments are theoretically sound they have not been empirically related to sexual recidivism (DiCataldo, 2009; Weinrott, 1998).

Chambless et al. (1998) cite specific concerns related to the ethical implications of conducting research that would require the provision of pseudo-treatment to a cohort of youths with PSB and then releasing them into the community to observe the outcomes of a comparison group. Overall, a significant amount of literature has been devoted to treatment approaches and modalities related to juvenile sex offending, with little focus on evaluating the efficacy of these forms of intervention. The paucity in the literature pertaining to evidence-based practices in treating PSB can best be explained by ethical and methodological limitations of conducting randomized control research within this population.

**What Does Not Work**

To date, specialized treatment strategies for PSB that have been tried and identified as ineffective have yet to be documented in the literature.

**Psychopharmacology and Adolescent PSB**

The use of hormonal agents or antiandrogens as the primary approach to psychopharmacological treatment for paraphilic disorders in adult populations has been well documented in the literature (Bradford, 1995). Antiandrogen medications serve to block the action of testosterone in male offenders. Clinically, these medications eliminate or reduce the sex drive and assist the adult sexual offender in controlling sexual fantasies, thoughts, arousal, and behavior. Unfortunately, antiandrogens do not discriminate deviant from normal arousal, thereby leading to the suppression of all sexual functioning. As a result, antiandrogen treatment is commonly referred to as chemical castration and is inclusive of the following hormonal medications: medroxyprogesterone (Provera and Depo-Provera), cyproterone (Androcur), and leuprolide acetate (Lupron).

Alternatively, among adolescents the overall effectiveness of hormonal treatment as an approach to treating paraphilias is neither clear nor universally accepted. Although psychopharmacological interventions, including sex-drive-hormone reducing medications such as medroxyprogesterone, have been found to be effective in reducing sex offending in adult offenders, they can have serious side effects. Such medications, when used with juveniles, may significantly affect the body and negatively impact normal growth and development. It is further suggested that although little is known about the long-term medical effect of antiandrogens on adults, the long-term use of antiandrogens in adolescents has been noted to be questionable psychologically and medically (O'Shaughnessey, 2002). Thus, ethical concerns related to the use of these medications with juveniles are substantial (Hunter & Lexier, 1998). The clinical indication for the use of antiandrogens in the 16–17-year-age group is the presence of very serious sexual deviation.

Given the documented concerns regarding the use of antiandrogens or hormonal medications when treating adolescent paraphilias, many researchers and professionals have begun to explore the use of psychotropic medications within this population. For example, Hunter and Lexier (1998) noted reports from the professional literature that describe the utility of selective serotonin reuptake inhibitors (SSRIs). It is suggested that SSRIs often have sexual dysfunction side effects such as suppressed sexual desire and delayed ejaculation. However, these researchers further noted

that the role of serotonin in regulating sexual behavior is not fully understood. Many questions concerning psychopharmacological approaches remain. These questions include which juveniles are likely to benefit from such an approach and at what dosages. Nevertheless, these psychotropic medications provide potential promise given that they are better tolerated than antiandrogens and they do not disrupt normal development. There has been no research to date that documents the relative efficacy of this form of medication in adolescents. Therefore, the treatment literature will benefit from research in this area.

## The Prevention of Adolescent Sex Offenses

### What Works

More theoretical and empirical research is needed before evidenced-based primary prevention strategies can be developed and implemented.

### What Might Work

According to the literature, little attention has been devoted to the development, implementation, and evaluation of programs that promote primary prevention of antisocial sexual behaviors among adolescents. However, as previously stated, a series of risk factors, including poor familial relationships, sexual victimization, a history of physical abuse or maltreatment, exposure to violence, and a lack of social competence, may interact to mediate the development of sexually aggressive behaviors. Therefore, programs targeted at preventing the development of antisocial sexual behaviors in youth would benefit from core components that seek to facilitate healthy family functioning, promote coping skills that increase one's ability to overcome adversity prosocially, increase social ties and school bonding, and offer the provision of support and guidance. Programming should also assist in the development of social skills, facilitate personal identity development, teach problem-solving skills, and encourage children to avoid sexual risk through education. Each of these components protects against developmental risk factors and is key in

building developmental strengths and prosocial teen sexual values. They also have the potential to neutralize troubled behaviors, and buffer against behaviors that may be harmful to self or others (Rich, 2003).

Additionally, the role that the media plays in portraying sexual values, behavior, and aggressiveness cannot be overlooked. In noting that sexual aggression occurs within developmental and sociocultural learning environments, it is important to account for the extent to which many children are introduced to sex through inappropriate exposure via the media and Internet. Brown and Keller (2000) report that many adolescents rank the media as their major source for sexual ideas and information. They also purport that there is a strong association between exposure to sexual content in the media and sexual beliefs and behaviors. Acquisition of inappropriate sexual behaviors associated with exposure to the media may be facilitated through learning and behavioral rehearsal. The difficulties that teens face in interpreting and acting on the messages that they receive from the media has been addressed by Brown and Keller (2000). These researchers state that "a clash between the media's depiction of sexual relationships and the real life experiences of youth contributes to their difficulty in making healthy sexual decisions Brown and Keller (2000, pp. 255)." Thus, the incorporation of programming associated with healthy sexual education is essential. Healthy sexual education allows youth to have access to countervailing information or ideas that will assist them in making sense of the information that they receive through media outlets. Furthermore, healthy sexual education can also assist adolescents in developing healthy sexual decision-making and problem-solving skills. Mastery of both of these components is key in facilitating successful transitions throughout the stages of adolescent development.

### What Does Not Work

Evaluation research indicating that there are ineffective primary prevention programs in the literature has not yet been documented.

## Recommendations

Despite the fact that research conducted to date has large gaps, there are findings which are noteworthy: (1) Adolescents commit a significant proportion of sexual offenses in the United States, the most conservative estimates suggest about 20 % of all cases. (2) The majority of perpetrators are male and their victims are primarily female. (3) A significant proportion of adolescent sex offenders have a history of being physically or sexually abused. (4) Social skill deficits as reflected in poor relationships and social isolation have been demonstrated in several samples. (5) Adolescent sex offenders like juvenile delinquents, exhibit high rates of family instability and psychopathology with frequent separations from family of origin. (6) Recidivism rates for juvenile sex offenders are relatively low, ranging between 7 and 13 %.

Several individual, familial, behavioral, and environmental factors have been explored in association with the development of adolescent sexual offending behavior. There is strong evidence that supports the contribution of childhood histories of maltreatment, family, and social relationship variables. Studies have also evaluated childhood sexual histories and intellectual functioning with inconclusive results. However, it has been determined that there is not a single factor common to all sexual offenders or one theory that explains the etiology of sexually aggressive behavior. Juvenile sex offenders are a heterogeneous group with a variety of antecedents and consequences influencing their behavior (Rich, 2003). Juvenile sexual offending behavior is more than likely caused by multiple causation and interactive factors (O'Shaughnessey, 2002). Therefore, research will benefit from the development of a comprehensive model of sexually deviant behavior which takes into account and explains the interaction of individual, social, and environmental factors. An effective model will demonstrate the ability to predict future occurrences of sexual offending as well as foster the development of effective intervention and prevention strategies.

The most important conclusion to be highlighted from this review is that research on adolescent sexual offenders is still in the early stages of development. The majority of the research to date has been exploratory, descriptive, and theoretical. Moreover, evidenced-based treatment strategies for adolescent sex offenders have not yet been documented in the literature. The lack of controlled treatment outcome studies is due in part to the ethical and methodological limitations of randomly assigning offenders who may be of danger to the general population to a wait list control or no treatment control group. Nevertheless, it remains essential for treatment components to be isolated and tested to determine which factors contribute to positive treatment outcomes and which factors do not. To the extent possible, these studies need to be conducted among homogenous subgroups of sex offenders with specification of treatment conditions. Currently the most appropriate forms of treatment seemingly available to this population include individual and group-based intervention strategies that are cognitive behavioral in nature. These therapies should address critical factors associated with offending behavior, which include accepting responsibility for behavior, identifying a cycle of offending, learning specific behavioral techniques to disrupt the cycle of abuse, increasing the use of appropriate social skills, addressing one's own history of sexual abuse, and relapse prevention. Given the extent to which familial instability has been implicated in the development sexually offending behavior among adolescents, significant attention should be devoted to conducting thorough family assessments and family therapy with this population.

Antiandrogens have commonly been used in treating sexual offending adults for a significant period of time. However, these particular treatments have been noted to have a negative impact on the physical growth and development of adolescents. More recently, SSRIs have been identified as a more promising strategy in treating adolescent sex offenders yet additional research

is needed to document dosage and the type of juvenile sex offender who will receive the greatest benefit from this level of treatment.

Finally, relapse prevention, a strategy through which adolescents are trained to recognize and cope with situations that may serve to threaten their control over inappropriate sexual arousal, has been identified as an integral component to the successful treatment of adolescent sex offenders. This is an effective method of secondary prevention. Yet, given the significant incidence of children who are sexually victimized by adolescents, it is important to define this issue as a public health concern and devote additional attention to the development of primary prevention programs. Appropriate programming promoting the importance of healthy sexuality in schools as well as in the home may play a critical role in deterring sexually deviant behavior among juveniles. This programming may benefit from incorporating key components that serve to counteract against potential harmful effects of developmental risk factors associated with sexual offending behaviors. These components include healthy sexual education; the facilitation of healthy family functioning and adaptive coping skills; the enhancement of social ties, social skills, and school bonding; personal identity development; and problem-solving skills. Only when a concerted effort has been made in each of these areas we will be able to make progress in prevention, early detection, and treatment of adolescent sex offenders.

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Ralph J. DiClemente and JaNelle M. Ricks

## Introduction

Although nearly every known society has some form of "incest taboo" or prohibition of marriage and sexual relationships between members of a nuclear family and other specified relatives, incest has only started receiving significant attention in the United States in the last 30 years (Gupta & Cox, 1988; Henslin, 2001; Parsons, 1954). Unfortunately, despite the evolution of research on the phenomenon, the origins and scope of incest are still not well understood.

Incest taboo comprises a complicated amalgamation of biological and sociological concerns and knowledge of the psychological development of a child—a mixture which contributes to the confusion in determining whether or not a sexual act is abusive (Lloyd, 1982). Although these violations are unequivocal when the abuse involves an adult and a child, there are fewer consensuses

however when the violation of the taboo involves siblings. For example, is "sex play" considered sibling incest? When the sex play entails the showing or touching of each other's genitals (e.g., "I'll show you mine if you show me yours") and is harmless, then it is generally not considered sibling incest. Harmless sex play is characterized as of short duration and excludes sex engaged in by force, sex among older children or among children of significant age differentials (Finkelhor, 1980). Thus, some aspects of the definition of what constitutes a violation of the incest taboo involving an adult may not be applicable to sibling incest.

To distinguish between age-appropriate curiosity or sex play and sibling incest, some researchers and practitioners have redefined sibling incest more specifically as "sexual interaction beyond age-appropriate exploration such that older siblings, who differ significantly in age or by virtue of their power and resources, may also be considered abusive" (Tower, 1996, p. 134). Yet, at what age is considered "beyond age-appropriate exploration," and what is the number of years that should be considered as a significant difference in age? Some researchers and professionals have attempted to use Freud's (1920, 1955) stages of psychosexual development as a guide (Finkelhor, 1980) by characterizing any sexual activity over the age of 8 as inappropriate while also operationalizing the age differential as 5 or more years (see de Jong, 1989). Other professionals have taken a more simplistic albeit extreme view and feel that sibling incest should be defined only in terms of

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its effects on the victim. If the victim views the experience as traumatic or harmful, then the event should be considered sibling incest. Conversely, if the experience is viewed as positive, then it should not be taken seriously. This latter perspective, however, has been criticized by many clinicians for several reasons: (1) adults may not be able to rate accurately experiences that happened to them as children; (2) it does not account for perpetrator–victim status; (3) it fails to consider power differentials, age differentials, and consensual vs. coercive; and (4) it does not determine the level of denial associated with the experience. Recently the definition has been expanded to also incorporate non-contact behaviors that are meant to sexually stimulate either the sibling victim or the offender. These non-contact behaviors would include the taking of pornographic pictures, forcing the sibling to view pornography, unwanted sexual references in conversation, and forcing the sibling to masturbate or to watch the offender masturbate (Haskins, 2003).

In our society, unfortunately, this incest taboo is too often broken. Some research has shown that there may be as many as 15 million victims of incest in the United States (Stark, 1984). Sibling incest occurs more frequently than other forms of incest (Bank & Kahn, 1982; Caffaro & Conn-Caffaro, 1998; Hardy, 2001). Although it can be difficult to identify, it is estimated to be as much as five times more prevalent than parent–child incest (Ascherman & Safier, 1990; Cole, 1982; Finkelhor, 1980; Smith & Israel, 1987), and is grossly more underreported than parent–child abuse (Caffaro & Conn-Caffaro, 2005).

The occurrence of sibling incest is associated with traumatic negative psychological sequelae (Canavan, Meyer, & Higgs, 1992; Cole, 1982) and may create an immense burden for a victim that continues through adulthood (Rudd & Herzberger, 1999). For example, research has provided evidence to suggest that victims of incest may suffer from lowered self-esteem (Finkelhor, 1980; Laviola, 1992), higher rates of sexual activity (i.e., "promiscuity"; Finkelhor, 1980; Rudd & Herzberger, 1999), sexual dysfunction (Laviola, 1992), adult victimization (Russell, 1986), intrusive thoughts of the incest (Laviola, 1992), flash-

backs and nightmares (Rudd & Herzberger, 1999; Tsun, 1999) as well as suicidality, depressive symptomatology, eating disorders, and substance abuse (Rudd & Herzberger, 1999).

Much of the research on incest has focused on the etiology and epidemiology of father–daughter or older male relative–younger female relative incest (Cole, 1982; Laviola, 1992; Worling, 1995a), with comparatively less research on sibling incest (Ascherman & Safier, 1990; Ballantine, 2012; Caffaro & Conn-Caffaro, 1998). There is still a relative dearth of epidemiological research that has examined sibling incest specifically among large, representative samples. So few studies have been conducted to document adequately the scope of sibling incest that we cannot be sure how widespread it is. More research using diverse and representative samples is warranted so that we can determine the extent to which the sibling incest taboo is being violated, understand better who is violating whom, and assess the deleterious effects so that preventive interventions and treatment programs can be devised and implemented.

## DSM V

No information was available regarding DSM V and sibling incest.

## Biological/Genetic Factors

Historically, theories on incest avoidance have primarily been derived from the social and psychological sciences (Arens, 1986; Freud, 1918; Levi-Strauss, 1969). Accordingly, these traditional theories assert that sexual motivations toward family members are largely undifferentiating before human culture attributes symbolic meaning to this behavior in the form of cultural signs, social reactions, and social norms (Freud, 1918; La Fontaine, 1987; Levi-Strauss, 1969). Thus, why human beings break these taboos may be explained by the symbolic meaning ascribed to incest. This is evident in the heterogeneous nature of how incest taboo is categorized by

cultures across the globe over time. For example, although today the practice is forbidden in many cultures (Aoki, 2005) during the Roman occupation of ancient Egypt, brother–sister marriages were a widely endorsed practice enacted in an attempt to maintain "pure" family lines and maintain agricultural land (Parker, 1996).

In contrast, evolutionary theorists suggest that the human neural architecture that evolved among our hunter-gatherer ancestors allowed for a kin-recognition system that inhibits sexual activity among closely genetically related family members because children produced from such unions would be less healthy and subject to ostensibly harmful effects of inbreeding (Lieberman, Tooby, & Cosmides, 2003). This instinctive aversion underpins the *Westermarck theory* which applies specifically to sibling incest (Westermarck, 1889). According to this theory, humans developed an aversion to incest through the process of natural selection. Early association between siblings is critical to the establishment of incest avoidance where it is thought that children raised in close proximity are less likely to develop later sexual interest (Bevc & Silverman, 1993). The theory further posits that incest avoidance between siblings can be disrupted if siblings are separated at birth or separated for a significant period of time. Some evidence to support the Westermarck theory has been provided by research that shows children who were not siblings but were raised together (e.g., in communes) were less likely to select each other as marital partners (Shepher, 1983), or if they did marry, then their marriages were characterized as sexually dysfunctional with high rates of divorce (Wolf, 1995). Research among 500 college students that examined the Westermarck hypothesis among sibling relationships found that separation of siblings of a year of more in early childhood was positively related to completed or attempted genital, oral, or anal intercourse post-childhood (Bevc & Silverman, 1993). However, separation was not related to whether siblings engaged in other less extreme forms of sexual activity (i.e., touching, fondling, exhibitionism). Thus, based on these findings, close proximity may not inhibit sexual interest per se, but may serve to inhibit sexual reproduction, which is considered an adaptive function from an evolutionary perspective.

Although support for cultural/social norms perspective has waned in recent years, the debate between biologically- or socially-based incest aversion continues. In support of the Freudian perspective, Fraley and Marks (2010) explored the *evolutionary psychodynamic model* of incest avoidance by conducting a series of three experiments to demonstrate that activating representations of close relatives without making participants aware would either encourage or impede sexual attraction toward strangers. The evolutionary psychodynamic model dictates that activating parental representations without awareness would enhance familiarity of strangers, making them more sexually attractive. In the first experiment, participants were asked to rate the perceived sexual attractiveness of images of individuals whom they did not know. Before viewing each image, participants were primed with either an image of their opposite-sex parent or a stranger, depending upon experiment condition assignment. Participants shown a picture of their own parents found the subsequent images more attractive than participants primed with a picture of a stranger ($t(72) = 2.08$, $p < .05$, $d = .49$). The second experiment asked participants to rate perceived sexual attractiveness of images digitally manipulated to be composites of two faces—either the participant and a stranger or two strangers. In this case, participants found faces more attractive if they were composites that contained elements of that an individual's own face ($F(1, 38) = 5.84$, $p < .05$, $\eta2 = .13$). Results of the two experiments indicated that others are more attractive when they have been sublimely primed with an image of a relative and when they contain elements of the self. As Farley and Marks noted, this assumes that if the mind is consciously unaware of incestuous implications and taboo of being sexually attracted to a relation, people will find relations more sexually attractive.

In consideration of Fraley and Marks' conclusions, Lieberman, Fessler, and Smith (2011) found their inferences "problematic for a variety of reasons" (p. 1229). After reexamination of the experiments they, Lieberman et al. (2011) concluded

that the findings were in fact in agreement with a biological perspective. Citing Westermarck's proposal that childhood coresidence is a "generally reliable cue of close relatedness," they suggested that resemblance in the absence of a shared history likely indicates a level of relatedness that Bateson's (1983) theory predicts should be most attractive. If this is true, the effect seen in Experiment 1 (subliminally presented image of an opposite-sex parent is processed in conjunction with the processing of a stranger's face) and Experiment 2 (morphed composite of a stranger's and one's own face) are reinterpreted accordingly. Moreover, they noted that results of Experiment 1 may not be due to the blending of images but rather may be explained by a contrast effect, as the mechanisms and operation of subliminal visual priming is not yet completely understood. In this case, presenting the image of the opposite-sex parent may create a temporary baseline against which individuals evaluated subsequent targets. If evolved incest avoidance mechanisms dictate that one's opposite-sex parent sexually unattractive, then it is logical that most targets would appear to be more attractive by comparison. Considering this interpretation, Fraley and Marks (2010) findings revealed that targets are more sexually attractive compared to kin.

## Individual Factors

A number of significant etiological theories for adolescent sex offenders have been described previously (see Camp, Salazar, DiClemente, & Wingood, 2005; Gilmartin, 1994; Luzes, 1990). These theories have included social learning theory, feminist theory, and psychodynamic theory, to name a few, and vary with respect to their level of analysis from psychological, to sociopsychological, to cultural. Unfortunately, no one singular model has emerged that has been validated empirically and explains the development of sibling incest in adolescents. Rather from these theories many factors have been examined in isolation such as psychopathy, poor social skills, inconsistent friendship patterns, poor social adjustment, prior sexual victimization, traditional sex roles,

family dysfunction, and family abuse in an attempt to explain and understand sibling incest.

One psychological theoretical perspective in particular, which has been discussed and examined in the adolescent sex offender literature and in the incest literature, is *blockage theory*. Blockage theorists posit that people who because of poor social skills, inconsistent friendships, or poor social adjustment are "blocked" from having their emotional and physical needs met via normal social interactions (Finkelhor, 1984). To fulfill their needs, they instead force, persuade, or coerce inappropriate and traumatic interactions with younger siblings (in the case of sibling incest), or with either a son or daughter (in the case of parent–child incest); thus, sexually, emotionally, or physically victimizing their sibling or child. In the case of sibling incest offenders, a younger sibling in the household provides easy access to a person who can provide the emotional and sexual satisfaction the offender desires and needs. This perspective implies that adolescent sibling incest offenders who molest siblings may not have the necessary skills to cultivate meaningful peer relationships; therefore, it is easier to fulfill their needs with a sibling. They may have the desire to pursue outside peer relationships, but they may lack the skills to do so.

Empirical support for the blockage perspective is provided by studies with sibling incest offenders. As most cases of sibling incest involve older brothers molesting their younger sisters (Caffaro & Conn-Caffaro, 1998), most of these studies involve male perpetrators. O'Brien (1991) compared adolescent incest offenders with adolescent child molesters (extrafamilial) and with nonchild offenders on their social skills. Based on clinical interviews, he was able to characterize their degree of social functioning. He found that the group of adolescent incest offenders had a significantly higher proportion of adolescents who were evaluated as undersocialized (64 %) compared to the group of nonchild offenders (37 %); however, there was no difference between the percentage of undersocialized adolescents in the group of child molesters (57 %) and the group of sibling incest offenders. Undersocialized was operationally defined as having few friends and poor social

skills. These results support the view that adolescent sex offenders (both incest offenders and extrafamilial offenders) may be unable to achieve a normal degree of peer involvement and friendships due to their poor social skills. Consequently, many may turn to their siblings or younger children outside the family to fulfill their needs.

Other studies that have examined the psychological functioning of sex offenders may provide indirect evidence for blockage theory. For example, Adler and Schutz (1995) reported on 12 male sibling incest offenders referred to a hospital-based, outpatient psychiatric clinic for treatment. More than half (58 %) had a history of conduct-disordered behavior aside from the incest that included behavioral problems in school and learning disorders. Psychiatric diagnoses were quite prevalent among the sample of adolescents where 42 % met criteria for Conduct Disorder; 17 % were diagnosed with Attention Deficit Hyperactivity Disorder (ADHD), and 42 % met criteria for Depressive Disorder. Similarly, Becker, Kaplan, Cunningham-Rathner, and Kavoussi (1986) interviewed 22 male adolescent incest sexual perpetrators from an outpatient clinic. A majority of these offenders (74 %) had one or more psychiatric diagnoses, which included Conduct Disorder, Attention Deficit Disorder (ADD), Drug Abuse, Adjustment Disorder, social phobias, dysthymia, and Post-Traumatic Stress Disorder (PTSD). Together these results suggest that the adolescent offenders in these studies may have experienced a low degree of social functioning. In other words, although it was not evaluated directly in these studies, it may be plausible that because of their psychological deficits, the adolescent sex offenders were also socially deficient.

## Family Factors

Sibling sexual abuse is an "opportunistic" form of abuse because of the physical proximity of siblings (Stathopoulos, 2012). Adolescent sexual offenders often report a sibling among victims and are more likely to choose a family member as their first target (Miranda & Corcoran, 2000;

Worling, 2001). The most common pattern in sibling incest is an older–younger sibling dyad in which the perpetrator is older and the victim is the younger sibling, indicating that there may need to be a younger sibling in order for an adolescent to become an offender (Tidefors, Arvidsson, Ingevaldson, & Larsson, 2010).

An intuitive and popular theory of child abuse is the *intergenerational transmission of abuse*, one of the earliest theories of abuse, which has become the most widely accepted theory of abuse. This perspective suggests that there is a cycle of abuse that is transmitted across generations: Children who grow up in families where abuse is perpetrated on them by a parent will in turn become abusers who abuse their own children. This theory has been applied extensively to understand the causative factors for the physical abuse of children where many studies have provided support for the notion that "violence begets violence" (see Egeland, 1993; Kaufman & Zigler, 1993). Regarding sibling incest, the research is somewhat mixed and inconclusive. O'Brien (1991) found in his study that adolescent sibling incest offenders were more likely to have been sexually victimized by a family member than extrafamilial child sex offenders and nonchild sex offenders. Of the adolescent offenders who were sexually molested as children, two-thirds of the sibling incest offenders compared to one-half of the child molesters and less than 20 % of the nonchild offenders had been abused by a family member. Nevertheless, overall, the majority of the sibling incest offenders had not been sexually abused by a family member. For the intergenerational transmission of abuse theory to be confirmed as a causative theory, most adolescents who are sibling incest offenders would have been victims of intrafamilial abuse. Only a minority of adolescent incest offenders in the O'Brien (1991) study was sexually abused by family members; thus, this finding constitutes evidence consistent with the theory, but does not necessarily confirm or disconfirm the theory.

*Vampire syndrome* (O'Brien, 1991) is second theory related to the intergenerational transmission of abuse. It is similar to the intergenerational

transmission theory in that the vampire syndrome also connotes the notion that abuse begets abuse. Yet, it differs in that the perpetrator does not necessarily have to be a family member. It simply suggests that offenders were first victims. Research has provided some evidence to suggest that prior sexual victimization may be a contributing factor, but not necessarily a causative factor (O'Brien, 1991; Pierce & Pierce, 1987; Smith, 1988; Smith & Israel, 1987). O'Brien (1991) found rates of prior sexual victimization to be much higher than that found in the general population: 42 % of sibling incest offenders, 40 % of extrafamilial child molesters, and 29 % of nonchild sex offenders. Other studies have found similar results. For example, Rayment-McHugh and Nisbet (2003) conducted a study that compared male adolescent sex offenders (extrafamilial) to male adolescent sibling incest offenders. They found that sibling incest offenders were more likely than nonsibling offenders to have had a child protection history and to have been victims of child sexual assault. Worling (1995a) also compared adolescent male sex offenders to sibling incest offenders. He found groups did not differ significantly on measures of individual functioning, but there were significantly more sibling incest offenders who reported a history of child sexual abuse (CSA) than nonsibling offenders. In another study, Pierce and Pierce (1987) investigated 37 cases of adolescent sex offenders and found that for the sizable portion that had committed sibling incest, many were victims of prior sexual victimization and abuse. Smith and Israel (1987) also explored family dynamics among 25 families referred to the Boulder County Colorado Sexual Abuse Team. They found that 52 % of the sibling incest offenders were victims of either intrafamilial or extrafamilial sexual abuse. Collectively these studies suggest that the mechanism underlying the vampire syndrome could be unresolved early experiences of sexual or physical trauma, which in turn may lead to subsequent acts of sexual offending.

Many studies of incest sibling offenders have examined other factors related to family functioning to determine the etiological significance of these contextual variables. Parental

rejection and abuse (Bank & Kahn, 1982; Breer, 1987; Canavan et al., 1992; Smith, 1988), emotional volatility (Carlson, Maciol, & Schneider, 2006), marital conflict or discord (Adler & Schutz, 1995; Worling, 1995a), authoritarian parenting styles characterized by high levels of physical punishment (Worling, 1995a), negative family atmosphere (Worling, 1995b), parental favoritism (Caffaro & Conn-Caffaro, 1998; Haskins, 2003), less overall satisfaction with family relationships (Worling, 1995a), high levels of alcohol or substance abuse (O'Brien, 1991), poor parental sexual boundaries (Smith & Israel, 1987), and hypersexualized environments (Caffaro & Conn-Caffaro, 1998) have been found among the families of sibling incest offenders. Moreover, the presence of financial stress, disability, and/or illness has also been identified as a risk factor among many families of sibling incest offenders (Adler & Schutz, 1995).

Clearly, the literature indicates that the many dynamics of a dysfunctional family contribute significantly to adolescents becoming incest offenders, but there is no clear consensus as to the mechanism by which this phenomenon takes place. Some speculate that children in these families learn to behave in sexually inappropriate ways because of the collective feelings of distress, despair, and helplessness characteristic of dysfunctional families. It is also plausible that older siblings are merely seeking to fulfill basic human emotional needs of nurturance and comfort that have not been met by parents. The unavailability of parents—both emotionally and physically can also contribute to a heightened emotional bonding between siblings where unfortunately, in some instances, the act of seeking comfort becomes sexualized and turns to sibling incest.

Studies of incest perpetrators, victims, and their families (Abrahams & Hoey, 1994; Laviola, 1992; Smith & Israel, 1987) show with a high degree of consistency that family dynamics play a key role in creating the context for sibling incest to occur. In this example, unresolved childhood abuse issues afflicting the parents contributed to an overarching dynamic of emotional neglect, verbal abuse, inappropriate response patterns,

dysfunctional relational patterns, and maladaptive coping strategies (Haskins, 2003). Although many case studies have illuminated several contributing family factors with a degree of consistency, the literature has not revealed any one single factor that alone can explain the occurrence of sibling incest. Rather, sibling incest is the result of a complex interplay of intrapsychic, intergenerational, and intrafamilial dynamics (Ascherman & Safier, 1990). Children raised in households that exemplify some or many of these characteristics are not having their basic emotional needs met, are typically not being nurtured properly, are perhaps being both verbally and physically abused, and are learning impaired ways of behaving. As a consequence, to gain some mastery over their lives and situation, to have their needs fulfilled, or to "act out" their aggression and frustration, many of these children end up committing sibling incest with their younger sibling, or becoming the victims of incest (Laviola, 1992).

## Social and Community Factors

Studies of family violence purport a patriarchal model in which male players are overwhelmingly the perpetrators and female players primarily the victims (Eriksen & Jensen, 2009; Hamel, 2009). This trend seems to also hold for incidents of sibling incest. Criminal justice statistics consistently identify males as primary perpetrators of CSA. In the United States in 2011, more than 13,000 sibling abuse incidents reported to the police. The vast majority (92 %) of offenders were male. The most common abuse pattern was brothers abusing sisters (Krienert & Walsh, 2011).

Although boys and girls may both be victims, overrepresentation of female victims indicates that "the family is not the only social institution which plays a role in causing and perpetuating the problem" (Gilmartin, 1994, p. 291). In a large school-based study of 89,000 adolescents in a Midwestern state in the United States, a 10 % random subsample was generated to investigate the relation between childhood sexual abuse and adult sexual victimization. The results indicated that for extrafamilial abuse (i.e., perpetrated by

individual outside the family), intrafamilial abuse (i.e., incest—perpetrated by family member), or both forms of CSA, a greater proportion of girls were victims than boys. For intrafamilial sexual abuse only, girls were five times as likely as boys (3.5 % vs. .7 %) to report victimization (Lodico, Gruber, & DiClemente, 1996). Similar findings were found in a study involving a clinical sample of 73 adult survivors of sibling incest and sibling assault. Caffaro and Conn-Caffaro (1998) found that of the 39 % (n = 29) that had experienced sibling incest, the largest majority (63 %) of the victims (n = 18) were women who had been molested by an older brother (male-on-female incest). The next largest category comprised 20 % of the sample (n = 6) and was men who had been molested by an older brother (male-on-male incest). Only 10 % of the sample (n = 3) were men who had been molested by an older sister (female-on-male incest). Two women (7 %) reported that they had been molested by an older sister (female-on-female incest).

Although girls are most often reported to be victims of sibling incest, further evidence indicates that boys may equally as likely to become victims (Hamel, 2009; Morrill & Bachman, 2013), however ample evidence to substantiate this hypothesis is lacking as few robust studies have explicitly focused on male victims and female perpetrators (Turner, 2008). In cases of same sex sibling sexual abuse, it is common that adolescents who offend peers tend to choose female victims and those who offend younger children choose victims who are female, male, or both genders (Worling, 1995b, 2001).

## Evidence-Based Treatment Interventions for Sibling Incest Offenders

Sibling incest is perhaps the most underreported (Carter, 1998) and the least studied type of adolescent sex offense (Smith & Israel, 1987), yet the research presented in this chapter suggests that sibling incest may be as common as or more prevalent than other forms of incest and/or sexual abuse. In the past 20 years, treatment programs

for adolescent sex offenders have proliferated and many experts working in the field are moving toward adopting a public health approach to the issue (Li, 2011); however, interventions designed for the specific treatment of adolescent sibling incest offenders are scant, and for the most part have not been evaluated empirically. In general, treatment interventions for sibling incest offenders are similar to programs for general sex offenders, but because sibling incest involves the victimization of a resident family household member, the treatment approach must encompass special consideration for the victim. The literature on treatment for sibling incest offenders comprises mainly case studies that describe the various treatment modalities used to treat individual sibling incest offenders and their families. In this section, we present some of the common guidelines for assessment and treatment of the adolescent sibling incest offender that have been described among these case studies and highlight the unique aspects of treating sibling incest. A caveat must be issued though that these guidelines for assessment and treatment must be taken as illustrative rather than as proven models of best practice.

## What Works

To date, treatment interventions for sibling incest offenders have mostly been single-case studies and have not been implemented on a wide scale. Empirically derived evaluation of treatment effects, therefore, is not available. Thus, we cannot say definitively what works for sibling incest.

## What Might Work

Although researchers are working on a typology of adolescents who sexually abuse, the lack of a typology that characterizes adolescent sibling incest offenders necessitates that each case should be viewed as exceptional. Consequently, treatment plans should be tailored to meet the unique features of each specific case. Additionally, a family systems approach involving assessment

and treatment of the offender, victim, and other players in the family is critical to the healing process and to ensure that the family dynamics underlying the sibling incest are rectified.

Developing an individualized treatment plan typically begins with conducting a thorough and careful family-based risk assessment (Caffaro & Conn-Caffaro, 1998). The risk assessment is critical for the development of the treatment plan, for determining whether the offender should be removed from the household, and for developing a plan for reunification. For example, the *Sibling Abuse Interview* (SAI) (Caffaro & Conn-Caffaro, 1998) is a family-based risk assessment tool that can be used to glean information from six key areas: (1) the offender's motivation for the abuse and for treatment; (2) the family's ability to take responsibility for the incestuous activity; (3) the family's reaction to disclosure of the activity; (4) the family's ability to protect the victim; (5) sources of support for the victim; and (6) evidence of divided loyalties among children and parents (Caffaro & Conn-Caffaro, 1998). In-depth interviews must be conducted with the victim, the offender, parents, and other siblings. The therapist conducting the assessment must first consider the wishes of the victim before meeting with the entire family, and also consider the influence of the family's culture and religious background when performing the assessment interviews.

Treatment goals for the adolescent sibling incest offender are similar in scope to the treatment goals of the general sex offender outlined in the previous chapter (see Camp et al., 2005) with the addition of one more vital goal: the offender must also acknowledge and disclose his incestuous sexual behaviors and those behaviors must match with the victim's account. This is an important step for the offender to take as many times sibling incest offenders will minimize the degree and frequency of their activities and even try to implicate their victims as co-conspirators in the incest. The research supports the view that siblings seldom initiate incest simultaneously (Bank & Kahn, 1982) and that sibling incest is not benign (Cole, 1982). Thus, clear documentation that the offender has defined his abusive sexual behavior accurately and that they match

the disclosures of the victim must be obtained. This step is a prerequisite to the reunification of the family and allowing the offender to be placed back in the home.

The victim is essentially integral to the family therapy process. Conducting an interview with the victim enables him or her to explain specific details about his or her fear of the offending sibling, the nature of the sibling relationship, if he or she assumes responsibility for the incest, and if the sibling offender was psychologically abusive as well (Caffaro & Conn-Caffaro, 1998). This information is helpful not only for the development of her treatment plan and recovery, but also in devising treatment for the sibling offender.

Gathering critical information regarding the role of the parents in the incestuous activity helps to determine whether or not the family can be reunified. The shame associated with it leads to denial or minimization by parents. If the parents were deemed nonoffending (i.e., were not implicated in the abuse), then the eventual reunification of the family becomes one goal of the treatment plan. If, however, it was determined that the parents intentionally participated in some way in the incestuous activity (i.e., covered up the activity; tolerated or allowed the activity to occur; encouraged the activity), then reunification of the family may not be possible (Hargett, 1998). Additionally, interviews with the parents must also be conducted to assess the strengths, weaknesses, and character of the marital relationship and their parenting style. We reported previously that a dysfunctional parental subsystem characterizes many families in which sibling incest occurs. Assessing myriad and overlapping intrapsychic and intrafamilial factors that have merged to create such a climate is imperative to treating sibling incest effectively (Ascherman & Safier, 1990). Ineffective communication patterns, lack of intimacy between the couple, poor parental structure and support, abusive parenting, displayed favoritism, and negative emotional interactions between couples and their children are etiologic factors contributing to the incest and represent the clinical issues to be addressed in family therapy. Parents must be

taught how to communicate their needs to each other and to their children, encourage communication with their children, address preferential treatment of certain children, provide boundaries and structural guidelines for their children to avoid the potential for incest to reoccur, learn nonabusive and supportive methods of parenting, and model appropriate behavior. While this therapeutic process occurs, supervision of the children must be monitored by the therapist or other designated professionals to insure the safety of the victim.

Once assessment of the offender, victim, and family has been completed, treatment must be implemented accordingly. Treatment modalities can be multimodal using a combination of individual therapy, group sessions, and family sessions and can incorporate forms of cognitive-behavioral and psychodynamic therapies (see Camp et al., 2005 for details of these therapies). Standards of care for juvenile sex offenders have been developed and can be applied (see Bengis et al., 1999). The most important consideration is to address both the "individual and system factors that contributed to the incestuous behavior" (O'Brien, 1991, p. 90). Implementation of a family systems framework such as the one outlined in this section appears to be the best approach. Although this approach has not been well documented in the literature, several case studies of sibling incest that implemented a family systems approach have been described and suggest that this approach may be effective in resolving the underlying causes of the incest and its adverse effects (Caffaro & Conn-Caffaro, 1998; Carter, 1998; Hargett, 1998; Haskins, 2003).

Restorative Justice is an approach that may complement a family therapy program, ensuring a more remedial and less punitive response to the adolescent offender (McNevin, 2010). Restorative Justice is a type of justice theory that is gaining popularity worldwide in response to youth crime. The purpose of Restorative Justice is to repair harm caused by criminal behavior and reestablish balance to relationships and events where conflict and fear may otherwise exist (Coggins, 2003; U.S. Department of Justice & Office of Juvenile

Justice and Delinquency Prevention (OJJDP), 2013). Its premise is to provide victims of crimes a more active role as they give voice to their experience (Daly, 2004). Restorative Justice is an informal process characterized by: (1) identifying and taking steps to repair harm; (2) involving all stakeholders, and (3) transforming the traditional relationship between communities and government in responding to crime (U.S. Department of Justice, OJJDP, 2013).

With respect to adolescent offenders, traditional approaches to juvenile justice concentrate on punishment or treatment. Restorative Justice attempts to restore balance by involving the entire community or family unit in both holding the offender accountable for their behavior and rehabilitating them (U.S. Department of Justice, OJJDP, 2013). Use of this approach for sexual and family violence cases has been controversial; only recently has its use for these offenses slowly increased, making empirical evidence minimal. Early evidence indicates that compared to the traditional court process and penalty system, Restorative Justice may be less victimizing and produce more effective outcomes such as lower recidivism (Daly, 2006).

A recent novel survival analysis of recidivism in youth charged with sexual offenses including sexual assault of a sibling victim was conducted by Daly, Bouhours, Broadhurst, and Loh (2013). Of those referred to a Restorative Justice program, only 9 % were charged with new sexual offenses 6–84 months following enrollment, although 54 % were later charged with a nonsexual offense. Of the 9 % who re-offended, those without a prior offending history—including most of the sibling assault offenders due to less developed prior offending—were slower to re-offend than those who had not participated in a Restorative Justice program.

## What Does Not Work

The literature on community-based interventions for sibling incest offenders does not describe any programs that have been evaluated empirically and were deemed as ineffective.

## Psychopharmacology

Using psychopharmacological treatment approaches specifically for sibling incest offenders has not been documented in the literature.

## The Prevention of Sibling Incest Offenders

### What Works

At this time, prevention programs specifically for sibling incest have not been derived or implemented. In today's world where even the most inappropriate and personal topics are readily discussed publicly, sibling incest is still considered a taboo topic difficult to discuss, assess, and to research. Consequently, more theoretical and empirical research is needed before primary prevention strategies can be developed and implemented.

### What Might Work

We cannot ignore the etiologic role of culture and society in sibling incest. Most modern societies embrace patriarchy, a system in which men hold the institutional power and control and women and children are devalued. This influence may be evidenced by the disproportionate rates of sibling incest victimization among girls compared to boys. In addition to treatment approaches, social change efforts should be undertaken that address the cultural issues of male power and sexual privilege. A public education media campaign is one avenue in which large-scale attitudinal change could be achieved and has been used as a means of social change for various social issues such as domestic violence and CSA (see Klein, Campbell, Soler, & Ghez, 1997; Schober, Fawcett, Thigpen, Curtis, & Wright, 2012). Although constructing appropriate messages regarding pervasive societal attitudes requires the consideration of many factors, this approach when used in conjunction with

other programs could be effective in combating the cultural aspects underlying sibling incest.

Sibling offenders are significantly more likely than nonsibling offenders to have a history of sexual abuse (Latzman, Viljoen, Scalora, & Ullman, 2011; O'Brien, 1991; Worling, 1995a); they are more likely to have been exposed to pornography (Latzman et al., 2011) and domestic violence. Once the public has been educated on indicators of and warning signs for sibling sexual abuse, establishing reporting mechanisms beyond traditional pipelines (e.g., school counselors, police officers) can help support local people's response to the warning signs (Schober et al., 2012).

School-based prevention programs could also be used by incorporating activities that address male privilege and power in conjunction with activities that focus on prevention of all forms of sexual abuse including incest. Notwithstanding all of the complexities involved in designing age-appropriate sexual abuse prevention programs (see Reppucci & Haugaard, 1993 for a comprehensive discussion), special care must be taken for programs designed specifically to combat incest. It may be unethical to use strategies that hold young female victims responsible for protecting themselves from the sexual advances of more powerful perpetrators with whom there is a trusted relationship.

Another prevention approach that may be less invasive or controversial could be a community-based prevention program that targets families who have older brother–younger sister sibling dynamics. This approach could be couched as part of a comprehensive healthy family's initiative where in addition to sibling incest other issues could be addressed. Prevention programs would target health-care providers, parents, and educators (i.e., anyone who comes into contact with families and children) and attempt to raise awareness of the individual and familial risk factors associated with sibling incest and which also underlie other negative health-related outcomes (e.g., adolescent sex offenses, delinquency, substance abuse). Educating the community of the risk factors for sibling incest should be the first step in any type of prevention program.

## What Does Not Work

The literature does not describe a primary prevention program for sibling incest; thus, there has not been evaluation research that would indicate what does not work.

## Recommended Best Practice

For the most part, the existence of an incest taboo in most modern societies prevents the sexual abuse of children by siblings. Violations do occur, however. Although we could not say with a high degree of certainty how often and how many are victimized, research has indicated the sequelae of incest are serious. Sibling incest taboo violation offenses transcend mere child's sex play. The effects of sibling incest are not only deleterious, but also clinically significant and may last well into adulthood. Etiological factors involve an interaction of individual and family pathology. As demonstrated in this chapter, the implications for treatment are straightforward. Programs must be designed to address the dysfunction in both offenders and the family environment. A family systems approach was described and although not rigorously evaluated, at this juncture constitutes best practice in treating adolescents who commit sibling incest. We cannot emphasize enough the importance of instituting a family systems approach. This must be implemented whether the adolescent is treated in a residential treatment facility or in a community-based facility. The family is the social environment in which sibling incest offenders engage in their behavior. Consequently, without an emphasis on changing the family dynamics we cannot hope to change the individual sibling incest offender who is embedded within it.

Also duly noted in this chapter was the paucity of epidemiological and etiological research on sibling incest. A necessary next step calls for an expansion of research efforts. First, epidemiological studies with representative samples are warranted to document the scope. Second, subsequent research on etiology must include factors at

the societal level. Developing a broader ecological perspective of this phenomenon will greatly enhance our understanding of the complex interactions between individuals and their many environments, and reveal how these interactions maintain or perpetuate sibling incest. Such a comprehensive level of scope and understanding can then lead to more effective multidimensional treatment and prevention programs.

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# Physical/Emotion Abuse and Neglect

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## Introduction

From scratches and cuts to broken bones and ruptured organs, physical abuse can have lasting visible and invisible scars on children and adolescents. Neglect can be just as toxic, from potential malnourishment causing death to ignoring signs of endangerment and exposing adolescents to violent and destructive situations. Emotional and psychological abuse is no less damaging to the adolescent. Adolescents who are victimized by maltreatment are concurrently negotiating developmental crises, transitioning from the irresponsibility of youth to the responsibility of adulthood, and undergoing cognitive, physical, emotional, and relational growth (Williamson, Borduin, & Howe, 1991).

The interactions of the relational, emotional, physiological, and cognitive changes of a teen in an abusive environment often can have an unexpected and corrosive impact on the development of the adolescent, potentially causing significant future mental health disruptions (Finkelhor & Hashima, 2001). Adolescent maltreatment can affect personality formation, have major health consequences, impact academic and future occupational behavior, and impact the development of delinquent and antisocial behaviors and attitudes (Finkelhor & Hashima, 2001). Current research (Cicchetti & Toth, 2005; Connor, Doerfler, Toscano, Volungis, & Steingard, 2004; Finkelhor, Ormrod, & Turner, 2007) demonstrates that adverse life events have a long-term impact on educational, occupational, and health domains, in addition to increased risk for mental health diagnoses. The impact of experiencing stress and neglect results in adolescents who are more sensitized to impact of other traumatic events, therefore more likely to develop other mental health issues such as depression (Harkness, Bruce, & Lumley, 2006). Successful treatment of adolescent abuse needs to be multi-faceted to adequately target the interactions of factors specific to this population.

## Definitions

The research defines childhood maltreatment as characterized by four separate phenomenon including sexual abuse, physical abuse, neglect, and emotional and psychological abuse (Norman et al., 2012; Trickett, Negriff, Ji, & Peckins, 2011;

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Peltonen, Ellonen, Larsen, & Helweg-Larsen, 2010). Definitions of sexual abuse include involvement of a minor in sexual activity that he or she does not understand, during which he or she cannot give consent, and for which he or she is not developmentally prepared (Norman et al., 2012). Sexual abuse will not be covered in this chapter. For the purposes of this chapter, adolescent maltreatment will be defined as physical abuse, neglect, and emotional and psychological abuse including:

> Physical abuse of a child is defined as the intentional use of physical force against a child that results in—or has a high likelihood of resulting in—harm for the child's health, survival, development, or dignity. This includes hitting, beating, kicking, shaking, biting, strangling, scalding, burning, poisoning, and suffocating…
>
> Neglect includes both isolated incidents, as well as a pattern of failure over time on the part of a parent of other family member to provide for the development and well-being of the child—where parent is in a position to do so—in one or more of the following areas: health, education, emotional development, nutrition, shelter, and safe living conditions. The parents of neglected children are not necessarily poor.
>
> Emotional and psychological abuse includes both isolated incidents as well as a pattern of failures over time on the part of the parent or caregiver to provide developmentally appropriate and supportive environment. Acts in this category may have a high probability of damaging the child's physical or mental health, or his/her physical, mental, spiritual, moral, or social development. Abuse of this type includes the following: the restriction of movement; patterns of belittling, blaming, threatening, frightening, discriminating against, or ridiculing; and other non-physical forms of rejection or hostile treatment (Norman et al., 2012, p. 2).

This rather comprehensive definition demonstrates the breadth of activities that maltreatment can include, placing victimized adolescents at risk.

## Prevalence

In 2011, there was an estimated 3.4 million referrals made to 45 child protective agencies nationwide regarding 6.2 million children (U.S. Department of Health and Human Services, 2012). Of the reports made, 78.5 % of the total number were neglected, 17.6 % were physically abused, and 9.1 % were sexually abused (USDHHS, 2012). Although younger children are at greater risk for maltreatment, in 2011, 23.2 % of the children victimized were between the ages of 12 and 17 (USDHHS, 2012). Twenty-four percent of youth 13–16 years old and 22.5 % of teens age 17 were youth homicide victims (Office for Victims of Crime [OVC], 2012). In terms of types of abuse, the National Child Abuse and Neglect Data Systems (NCANDS) reported for youth between the ages of 12 and 17, 19 % suffered from neglect, 28.4 % suffered from physical abuse, and 25.3 % were psychologically maltreated (USDHHS, 2012). Parents accounted for 81.2 % of the perpetrators with more than 36 % of the perpetrators identified as the mother (USDHHS, 2012).

## Conceptual Considerations

It is important to understand that physical abuse, psychological abuse, and neglect have different social–emotional sequelae, developmental trajectories, and interactions with genetic and environmental factors (Williamson et al., 1991) such that while in some respects the literature supports exploring these varying differences, there is also a need to be cognizant not to underestimate adolescents' complicated experiences of abuse and violence which can include bullying, witnessing domestic violence, dating violence, exposure to community violence, and hate crimes, among others which are often not examined, asked about, or accounted for (Finkelhor, Ormrod, Turner, & Hamby, 2005). Therefore, the conceptual understanding of the impact of adolescent maltreatment needs to come from a biological–psychological–interpersonal perspective within the framework of adolescent development.

### Developmental Considerations

The developmental aspect of conceptualizing the impact of adolescent maltreatment takes into consideration the ever-changing nature of adolescents. The impact of maltreatment tends to be the result of the interplay between genetic, biological, and developmental variables (Williamson et al., 1991). In addition to the genetic/biological

predisposition, there are four additional dimensions in conceptualizing the impact of maltreatment on adolescents that can explain why and how adolescents react the way that they do including the following: appraisals of the maltreatment experience and the implications; the developmental task that the adolescent is currently dealing with; the type and quality of emotional regulation strategies the adolescent is relying on to deal with his or her stress and struggles; and the environmental buffers and the social and familial context in which the adolescent exists (Finkelhor & Kendall-Tackett, 1997).

Appraisal of the event refers to how the adolescent cognitively defines what is happening and why it is happening (Finkelhor & Kendall-Tackett, 1997; Allwood & Bell, 2008). Appraisal can relate to blame, self-blame, fairness and justice, normalization of violence, and the inappropriate appraisal of dangerous situations (Allwood & Bell, 2008). Given the stigmatization of maltreatment and the tendency to blame the victim, it is not surprising that an adolescent may develop a negative self-appraising or self-blaming cognition or an acceptance of "violence as normal" cognition in relation to his or her maltreatment (Allwood & Bell, 2008). These types of cognitions could then cause a teen to engage in maltreating others.

Maltreatment can significantly interact with the developmental tasks by interrupting or delaying the accomplishment, distort the manner in which the task may be resolved, or cause the adolescent to regress and undo the already resolved developmental task (Finkelhor & Kendall-Tackett, 1997). For maltreated adolescents, the chances of successfully negotiating the task of identity versus role development decrease potentially due to the lack of secure attachment or prosocial relationships, thereby increasing the chances that they develop an unhealthy or weak sense of self resulting in low self-esteem, poor relationship choices, and an increase in their chances of re-victimization in interpersonal relationships (Trickett et al., 2011).

Emotional regulation or coping abilities are posited as developing early in life through secure attachment relationships or through social learning (Allwood & Bell, 2008). When an adolescent

has to cope with the additional stress of traumatic event(s), his or her newly developed coping systems can regress or create unhealthy regulation mechanisms such as numbing, avoidance, desensitization to violence, self-harm, increased sexual promiscuity, or substance use (Allwood & Bell, 2008; Finkelhor & Kendall-Tackett, 1997). These unhealthy strategies place the adolescent at risk for inciting more maltreatment not only from caregivers but also from his or her greater social context.

The adolescent's environment is related to the youth's perception of social support, the presence of violence in the community or at home, and a perceived lack of resources (Allwood & Bell, 2008). Adolescents are less likely to turn to parents and more likely to turn to peers, but if they perceive that the peers will be rejecting them due to the effects of maltreatment, then they are less likely to reach out for support and help. Further, adolescents tend to be more impacted by broader sociocultural norms such as shame and respect, potentially decreasing their chances of seeking help, and exacerbating the internal turmoil potentially resulting from the maltreatment (Fung & Lau, 2012; Finkelhor & Kendall-Tackett, 1997).

## Impact of Physical Abuse and Neglect

In general, maltreated adolescents tend to experience lower levels of family cohesion, more attention problems, and more daily levels of stress (Williamson et al., 1991). Additionally, greater risk of substance abuse and delinquency, higher rates of early pregnancy, increases in self-harm and suicidality, lower frustration tolerance, poor academic performance, and troubled peer/romantic relationships are associated with adolescent maltreatment (Trickett et al., 2011; Gilbert et al., 2009; Gilbert et al., 2009). Stevenson's (1999) analysis of the research found lowered IQ, external locus of control, insecure attachment, anxiety disorders, aggression, suicidality, and delays in language. Specific to physical abuse, emotional abuse, and neglect, Norman et al. (2012) found a higher risk of developing depression earlier in life, an increased risk of developing an anxiety

disorder, a threefold increase in risk for developing eating disorders, increase in risk for suicidal ideation and attempts, and higher risks for sexually transmitted diseases and adverse health outcomes. Experiencing physical abuse also increased the risk of developing alcohol-related problem drinking, had a higher association with the development of PTSD and panic disorder, had a fivefold increase in risk for developing bulimia, and resulted in increased externalizing behaviors in teens (Norman et al., 2012; Williamson et al., 1991). Specific to neglect, Williamson et al. (1991) found adolescent neglect was primarily associated with extrafamilial problems such as stress, social isolation, and involvement with deviant peers.

## Internalized Impact

Peltonen et al. (2010) found a significant association between parental violence, defined as verbal and physical aggression directed towards the adolescent, and internalizing symptoms in girls. A review of research conducted by Norman et al. (2012) showed that maltreatment research consistently finds a significant association between adolescent maltreatment and depression and suicide attempts. Specifically, adolescents with a history of maltreatment reported lower levels of ability to tolerate stressful life events thereby suffering from earlier onset of depression and anxiety (Harkness et al., 2006; Klein et al., 2013).

## Externalized Impact

Development of youth violence and aggressive behavior has been strongly associated with maltreatment. Meta-analytic review shows that aggressive peer relationships, violent or abusive romantic relationships, and delinquent behaviors are highly correlated with adolescent maltreatment (Trickett et al., 2011). Maltreated youth tend to have conflictual relationships, display less positive affect, have lower peer status, and are less liked by peers (Trickett et al., 2011). The weaker peer relationships could potentially lead to the development of poor romantic relationship choices as well. In fact, maltreatment may be able to predict males' physically, verbally, and sexually abusive behaviors in future romantic

relationships (Norman et al., 2012; Trickett et al., 2011). Maltreatment has a greater impact on the development of violent delinquency in males, is highly related to violent/aggressive behavior, and is correlated with the development of psychiatric disorders like late-onset oppositional defiant or conduct disorder (Peltonen et al., 2010; Trickett et al., 2011).

In addition, adolescents receiving treatment for substance abuse disorders report a significantly high incidence of maltreatment (Sabri, Coohey, & Campbell, 2012; Norman et al., 2012). In a meta-analysis of adolescent maltreatment, between 20 and 60 % of the maltreated teens reported varying levels of substance use, abuse, and/or dependence of alcohol, marijuana, and/or hard drugs (Trickett et al., 2011). Additionally, parent violence towards teens has been shown to predict later alcohol problems, even at 4.5-year follow-up (Haber & Toro, 2009). Teens with substance abuse disorders tend to have dual diagnoses such as internalized co-occurring depression and anxiety or externalizing behavioral concerns such as aggression, leading to poor coping skills, which could incite further parental violence thus escalating the maltreatment situation and conditions (Sabri et al., 2012).

## Biological/Genetic Factors

The biomarkers and neurobiological mechanisms underlying physical abuse and its psychopathological sequelae are feebly understood. Being that physical abuse exerts distress, it negatively impacts the body's hypothalamic–pituitary–adrenal (HPA) axis, the locus coeruleus (LC), the autonomic nervous system (ANS), the sympathetic nervous system (SNS), and the parasympathetic nervous system (PNS), which in turn increases susceptibility to mental health conditions and compromised immune response (Jovanovic et al., 2009; McCrory, De Brito, & Viding, 2010). In physical abuse, there is a distress response, which disrupts the body's homeostatic balance and allostatic adaptability response, thus inducing a fight or flight reaction. The main hypothalamic–pituitary neurohormones implicated in physical abuse are

(yet not limited to) growth hormone releasing hormone (GHRH), antidiuretic hormone (ADH), and corticotrophin releasing hormone (CRH) (Morley, 2013). The GHRH is mainly released during sleep; it stimulates the synthesis of growth hormone (GH), which controls the production of insulin, mediates growth and cellular repair/regeneration, and impacts the immune system and stress regulation. The ADH acts most specifically as a fluid regulator, promoting hydration of the cells and the vascular system. The CRH functions as a key stimulator of the adrenocorticotropic hormone (ACTH), which induces the adrenal glands in releasing primarily cortisol (a glucocorticoid), aldosterone, dehydroepiandrosterone (DHEA), androstenedione, and epinephrine/norepinephrine, that, in combination with dopamine and serotonin, play a key role in the modulation of stress response (Fagundes, Glaser, & Kiecolt-Glaser, 2013; Gould et al., 2012; Grossman, 2012; Hart & Rubia, 2012; McCrory et al., 2010; Morley, 2013). Interestingly, glucocorticoids stimulate and inhibit the transcription process in gene activation (epigenetics), and the level of cortisol is especially associated with the existence of a comorbid affective disorder (McCrory et al., 2010; Murgatroyd & Spengler, 2011).

The LC, in conjunction with the adrenal glands, modulates the SNS stress activation while experiencing distress and increasing the release of norepinephrine. This in turn stimulates the secretion of CRH, as it works through the amygdala, and the hippocampus, increasing alertness, mediating memory, affect (the limbic system), attention, arousal modulation, and behavioral as well as immune responses (Grossman, 2012; McCrory et al., 2010). The ANS regulates the functioning of the body's organs and some of the muscles; in conjunction with the SNS, it activates the fight or flight response in emergency situations. The PNS mediates the body's homeostasis and allostatic modulation (McCrory et al., 2010). Under normal circumstances, the aforementioned physiological functions work in accord to support the body's homeostasis, heightening functioning during stress/active states, and promoting recovery during resting states. If children/adolescents experience physical abuse (and it is not in an ongoing basis), homeostatic and allostatic body plasticity, along with identified cultural supports and/or individual value and belief systems, mitigates its negative effects, to the extent that no sequelae may be present. Nonetheless, heightened ongoing stress activation can result in hyper-response, dysregulation, and continuous activation of the HPA axis, LC, ANS, SNS, as well as the PNS, and it is related to the hormones/neurotransmitters (e.g., dopamine, serotonin, and epinephrine/norepinephrine), resulting in system depletion. This can result in stress habituation, allostatic load, and neurotoxicity, which can lead to cell apoptosis, compromised immune system, and brain structural reduction in areas such as the hippocampus and corpus callosum, and dysregulation of the amygdala, the prefrontal cortex, as well as the cerebellum in relation to the limbic system. Subsequently, reactivity or hypoactivity may be present (Gould et al., 2012; Hart & Rubia, 2012; McCrory et al., 2010).

Most of the research on the psychopharmacology and neurobiology of physical abuse has been focused on its implications in adulthood, and in recent years it has been refocused to the implications in children/adolescents' prevention, treatment, brain plasticity, and resilience factors (Carpenter, Shattuck, Tyrka, Geracioti, & Price, 2011; Cicchetti, Rogosch, Gunnar, & Toth, 2010; Edmiston et al., 2011; Fisher et al., 2011; Frodl et al., 2010; Gouin, Glaser, Malarkey, Beversdorf, & Kiecolt-Glaser, 2012; Hunter, 2010; Jackson, Knight, & Rafferty, 2010; Keyes et al., 2012; McLaughlin et al., 2010; Meyer-Lindenberg & Tost, 2012; Neigh, Ritschel, & Nemeroff, 2010; Norman et al., 2012; Obradovic, 2012; Putnam-Hornstein, Needell, King, & Johnson-Motoyama, 2013; Tyrka et al., 2009, 2012; Tyrka, Price, Marsit, Walters, & Carpenter, 2012; Wilson et al., 2012). Presently, researchers suggest that there is a need for a model that addresses the psychopharmacological and neurobiological response to physical abuse, in order to develop effective interventions suitable for children/adolescents (Cloitre et al., 2010; Conus et al., 2010; Diepold & Goldstein, 2009; Dorrepaal et al., 2012; Garrido, Taussig, & Culhane, 2011; Greenblatt et al., 2011; Huang-Storms, Bodenhamer-Davis,

Davis, & Dunn, 2006; Pitzer & Fingerman, 2010; Selph, Bougatsos, Blazina, & Nelson, 2013; Shamseddeen et al., 2011).

Taking the aforementioned into account, recent research in physical abuse suggests that medical management attends to the residual immune dysregulation (i.e., including fatigue/exhaustion, inflammation, pain, latent herpes virus reactivation, elevated inflammation, telomere shortening), and psychopharmacological treatment focuses on addressing dysregulation of the hormones/neurotransmitters serotonin, dopamine, and epinephrine/norepinephrine associated with mood dysregulation. As a result of this, targeting mental health symptoms of anxiety, depression, reactiveness/impulsivity, attention problems, cognitive deficits, obsessive–compulsive disorder, suicidality, and other related comorbid symptoms is key in psychopharmacotherapy (Fagundes et al., 2013; Hart & Rubia, 2012).

## Individual Factors Influencing Risk and Resilience

Few have studied the correlates of maltreatment in adolescents (Williamson et al., 1991), most presuppose the beginning of maltreatment as a child (Wurtele, 1999) and an important note the majority of the research is segmented by victim age (Finkelhor et al., 2005). Thus, the research as a whole is without consideration of the complex violence experiences a child or adolescent may experience and without controlling or considering the confounds of these interrelated victimization experiences the applicability of the research is limited. The continuum of victimization experiences that a child or adolescent may experience in his or her early life-span is not reflected in the literature, thus limiting the clinical picture and impacting the success of the intervention efforts applied (Finkelhor et al., 2005).

Similarly, clinicians need to take into account both co-occurring types of abuse/maltreatment and impact, as well as multiple victimization experiences (i.e., polyvictimization) and preexisting symptoms or mental health concerns which for adolescents may exacerbate current trauma-related

symptoms (Finkelhor et al., 2007). Research consistently demonstrates a dose response impact with children with four or more exposures to violence having increased risk of additional victimization (Finkelhor et al., 2005, 2007; Gilbert, Widom, et al., 2009; Trickett et al., 2011). It is important to note that children with multiple victimization experiences accounted for all of the traumatic responses demonstrated versus children who had only a single victimization (Finkelhor et al., 2007). Adolescents who have experienced maltreatment have also been found to universally demonstrate a lower sense of self-efficacy, negative self-views, and feelings of powerlessness and betrayal (Sabri et al., 2012).

Additional individual risk factors include a child or adolescent's disability (Dubowitz & Bennett, 2007), including lower IQ (Doerfler, Toscano, & Connor, 2009). Some of these youth either may have a disinhibited temperament or are prone to behavioral disinhibition which may have a direct relationship to a caregiver's response increasing risk for the child or adolescent (Bornovalova et al., 2013). Adolescents are at risk for both a disrupted developmental cycle and development of mental health difficulties as adults including a loss of or delays in developmental capacities such as physical, cognitive, and language (Chapple & Vaske, 2010; Kaplan, Schene, DePanfilis, & Gilmore 2009; Kaplan, 2008; Mulsow, O'Neal, Thompson, & Neketon, 2014; Williamson et al., 1991).

Bornovalova et al. (2013) hypothesize an interaction between genetic inheritability (e.g., disinhibition) related to temperamental variables such as oppositionality and aggression, environmental circumstances, and maladaptive parenting responses that may result in a higher risk of child abuse for a child or adolescent victim. Thus, gender while not predictive is impactful as girls report more physical and sexual abuse than boys (Doerfler et al., 2009; Norman et al., 2012).

Finally, social isolation and peer difficulties, including deviant peer behaviors, were found to be directly correlated to adolescent neglect. Specifically, externalizing behaviors were found to be related to adolescents who experienced physical abuse including more attention problems

and poor school performance (Chapple & Vaske, 2010; Williamson et al., 1991). A study of deaths in English adolescents by deliberate self-harm, risk taking behaviors, or suicide appeared to be correlated with previous histories of maltreatment (Gilbert, Kemp, et al., 2009; Gilbert, Widom, et al., 2009).

A mediating variable for youth who experience child abuse includes the temperamental variable of empathy which shows an inverse relationship to interpersonal aggression and a positive relationship to behavioral compliance (LeSure-Lester, 2000). Other protective factors include above-average intelligence, easy temperament, positive outlook, internal locus of control, positive self-esteem, good social skills, good health, and having hobbies/interests (Cicchetti & Toth, 2005; Gilmore, 2009).

## Family Factors Influencing Risk and Resilience

Physical neglect, abuse, and/or emotional abuse often co-occurs in conjunction with a parent's lack of social skills or social isolation, parent's own mental illness or mental health difficulties such as depression, self-destructive behaviors, difficulties with anger control, intimate partner violence, substance abuse, and/or criminal history of primary caregivers (Berry, Charlson, & Dawson, 2003; Dubowitz & Bennett, 2007; Gilbert, Kemp, et al., 2009; Gilbert, Widom, et al., 2009; Gonzalez & MacMillan, 2008; Kaplan, 2008; Kaplan et al., 2009; Marcovitch & Jones, 2007). Researchers found family stressors related to both single parent and blended family dynamics (D'Alessio & Stolzenberg, 2012; Finkelhor et al., 2007; Kaplan, 2008; Loman, 2007) increased the risk in families who had step-children of the children becoming victims of physical neglect and/or physical abuse. The increased risk has been found to be especially evident in families where resources were also scarce (i.e., poverty, community violence, etc.) (D'Alessio & Stolzenberg, 2012; Finkelhor et al., 2007). Other family characteristics found to be correlated with increased risk of neglect of youth

included low educational achievement, social isolation, mental health and substance abuse problems (Gilmore, 2009; Horton, 2003).

Receipt of physical abuse was also found to be related to rigidity in family response to violations of rules and a lack of variability in parenting disciplinary strategies, including chaotic, unpredictable, and disorganized family life as well as lower levels of family cohesion and poor maternal understanding of adolescent development (Kaplan, 2008; Williamson et al., 1991). A larger family size (i.e., more than three children) (Nelson, Saunders, & Landsman, 1993), including mothers who reported lower levels of support (Kaplan, 2008), and young maternal age (Gilbert, Kemp, et al., 2009; Gonzalez & MacMillan, 2008) were also variables found to be related to risk of maltreatment for youth.

Moderators between victimization experiences and negative long-term impacts include parental/caregiver recognition of problems and the presence of a supportive individual (e.g., extended relative—grandparent) (Dubowitz & Bennett, 2007; Sabri et al., 2012). Protective factors identified by the Center for the Study of Social Policy (Horton, 2003) included parental resilience and personal psychological resources, social connections and a strong social network for the parent, knowledge of child development and normative parenting practices, a spiritual belief system, and practical concrete support in times of need (i.e., money, rent, warm clothing, childcare) (Horton, 2003). Finally, the children who have developed social and emotional competencies (i.e., children who were able to identify and manage their own feelings) (Horton, 2003) were impacted less by maltreatment. It is important to note that each of these identified protective factors is not to be considered in isolation, but in the context of several variables.

## Social and Community Factors Influencing Risk and Resiliency

Dangerous or violent neighborhoods, poor recreational facilities, unemployment, poverty, destitution, homelessness, and substandard housing

have all been reported to be risk factors for adolescents and subsequent maltreatment (Dubowitz & Bennett, 2007; Horton, 2003; Kaplan et al., 2009; Kaplan, 2008). Specifically, researchers reported poverty influences family functioning as experienced through financial hardship, through lack of insurance and medical care, increased familial distress about food security, lack of transportation, and living in a dangerous neighborhood (Berry et al., 2003; Kaplan et al., 2009; Gilmore, 2009; Loman, 2007). The stigma and social exclusion from sustained poverty takes a toll long term resulting in compromised parenting and higher risk for maltreatment of youth (Berry et al., 2003; Kaplan et al., 2009; Gilmore, 2009; Loman, 2007).

## Evidence-Based Treatment Interventions: Residential Settings

Treatment outcome research on types of treatment for physically abused, emotionally abused, and neglected adolescents showed that there was a limited amount of documented knowledge specific to these populations (James & Mennen, 2001; Tanaka, Jamieson, Wathen, & MacMillan, 2010). Authors tended to group physically abused, neglected, and psychologically and emotionally abused adolescents with those who were sexually abused causing the specific needs of this group of adolescents to be ignored (James & Mennen, 2001; Tanaka et al., 2010). Few interventions have been developed to directly address the impact of emotional abuse and neglect with youth (James & Mennen, 2001).

Maltreated youth who become aggressive or delinquent are found in greatest numbers in residential treatment facilities with at least 50 % of the population having a documented history of physical abuse (Connor et al., 2004; Baker et al., 2007). These youth typically had at least one psychiatric diagnosis including ADHD, conduct disorder, affective disorders or anxiety disorders, and/or substance abuse/dependence (Baker et al., 2007; Connor et al., 2004).

Much of the meta-analytic research showed there was little difference in effect sizes in terms of maltreated children receiving primarily milieu/residential setting treatment or community-based treatment (Kutash & Rivera, 1995; James & Mennen, 2001; Hair, 2005; Reifsteck, 2005; Skowron & Reinemann, 2005; Tanaka et al., 2010). The theoretical orientation from which the treatment interventions were generated had little differentiating impact in terms of what worked better (Skowron & Reinemann, 2005). What seemed to moderate treatment outcome was the amount of treatment and services the adolescent received (Reifsteck, 2005; Skowron & Reinemann, 2005). Apparently, the more treatment that was offered to the adolescent and family, the greater the improvements in preventing future abuse and neglect, family functioning, and the adolescent's functioning (Reifsteck, 2005; Skowron & Reinemann, 2005). Furthermore, any treatment was better than being placed on the wait list, receiving no treatment at all, or receiving case management services only (James & Mennen, 2001; Skowron & Reinemann, 2005). That being said, additional evaluation of the research showed that there are differentiating improvements in treatment outcome based on the specific types of interventions used and when there is increased caregiver/parental involvement (Baker, Archer, & Curtis, 2007; Connor et al., 2004; Hair, 2005; Reifsteck, 2005).

## What Works

Treatment in residential facilities tends to be milieu style within the community and additional group and individual therapy as needed. Intervention and prevention treatment delivered in milieu formats that follow specific models seem to be more efficacious than traditional Residential treatment center. The Sanctuary Model (Rivard et al., 2003) has been implemented worldwide and been shown to be effective. The model targets traumatic impact of abuse and neglect by moving clients through the four stages of recovery that include safety, affect modulation, grieving, and empowerment (SAGE). Outcome data suggest that when compared to traditional RTC settings, the youth in the Sanctuary

Model RTCs showed significant differential improvement in specific areas of increased internal locus of control, improved communication strategies leading to fewer conflicts, and better coping strategies (Rivard et al., 2005).

## What Might Work

Traditional residential treatment settings provide more restrictive care to maltreated adolescents who may have experienced abuse and neglect and referral to an RTC usually results from a need to protect the community from the child, to protect the child, or because the child would benefit from the specific treatment offered in an RTC (Burns et al., 1999). Traditional RTC treatment varied from cognitive behavioral, Adlerian, behavioral management, group therapy, psychoeducation, medication management, and peer-cultural formats and strategies (Hair, 2005). Overall, research has found traditional RTC treatment does not seem to effectively decrease the externalizing aggressive and delinquent behaviors associated with abuse and neglect (Burns et al., 1999; Hair, 2005). Factors that respond to traditional RTC treatment include internalizing problems such as depression and anxiety (Connor et al., 2004), and high-risk behaviors such as suicidality (Lyons, Terry, Martinovich, Peterson, & Bouska, 2001). Additionally, engaged families resulted in outcomes that were sustained for a longer period of time and there was more improvement in the teen's symptoms (Hair, 2005).

## What Does Not Work

A search of the literature did not uncover an intervention that clearly did not work.

## Evidence-Based Treatment Interventions: Community Settings

Effective community-based treatment models include individual therapy using prolonged exposure (PE) therapy (Hunter, 2010), eye-movement desensitization and reprocessing (EMDR) therapy (Silverman et al., 2008), and trauma-focused cognitive behavioral therapy (TF-CBT) (Feather & Ronan, 2006). Family-focused therapies are helpful as well, with the treatment outcome heavily dependent on the focus of treatment and delivery mechanisms (Thomlison, 2003). Nontraditional therapies, including wilderness therapy (Gillis & Speelman, 2008), and therapeutic foster homes for out-of-home placements (Meadowcroft, Thomlison, & Chamberlain, 1994) are used in treatment. Characteristics of efficacious treatment include improving treatment implementation, focus on preventing impairment, including external systems that are influential for the adolescent, and focus on treating the individual traumagenic factors (Ronan, Canoy, & Burke, 2009; Silverman et al., 2008; Tanaka et al., 2010; Thomlison, 2003).

## What Works

*TF-CBT.* Much attention has been paid to TF-CBT in the research (Cohen et al., 2006; Feather & Ronan, 2006; Silverman et al., 2008). Evidence-based outcome research, randomized controlled trial, and meta-analytic studies have consistently found successful outcomes for children and adolescents treated with TF-CBT in the reduction of posttraumatic symptomology (Cohen et al., 2006; Ronan et al., 2009; Silverman et al., 2008). Specifically, TF-CBT was developed incorporating efficacious interventions targeting anxiety reduction, building appropriate coping skills, trauma-processing, and exposure therapy (Feather & Ronan, 2006).

When comparing the effectiveness of TF-CBT to other modalities, including client-centered therapy, TF-CBT was found to decrease posttraumatic symptoms (Silverman et al., 2008). Feather and Ronan (2006) conducted a study using TF-CBT to decrease anxiety and posttraumatic stress symptoms, finding a reduction in posttraumatic symptomology and increases in coping at posttreatment, which was maintained and increased at the 3-, 6-, and 12-month follow-ups (Feather & Ronan, 2006). Unfortunately, much

of the research focuses on the posttraumatic symptoms of sexually abused or multiply abused youth rather than specifically on physical abuse, emotional abuse, and neglect.

## What Might Work

*AF-CBT*. One method of CBT delivery, known as abuse-focused cognitive behavioral therapy (AF-CBT), has preliminary evidence supporting its use in treating the specific impact of physical abuse (Cohen et al., 2006). AF-CBT focuses on the offending parent's parenting skills while targeting the physically abused youth's externalizing behavior problems and improving the teen's prosocial behaviors. The youth-directed components include the following: psychoeducation about stress, abuse laws, safety and prevention and common abuse reactions; CBT methodology; narratives about the exposure to family violence; cognitive processing to modify beliefs, distortions, and misattributions; affect regulations skills about triggers and stress management; and socials skills training (Cohen et al., 2006). When compared to abuse-focused family therapy or routine community services, decreases were found in conflicted peer relationships, parental anger, physical discipline, youth-to-parent violence, externalizing behaviors, and family conflict (Kolko et al., 2012).

*EMDR*. Treatment outcome research consistently shows that EMDR can effectively treat the internalizing and externalizing symptoms of adolescent maltreatment in a short amount of time (Korn & Leeds, 2002). Unfortunately, the early studies had methodological flaws and small sample sizes (Silverman et al., 2008) limiting generalizability. In reviews of treatment, Silverman et al. (2008) found that EMDR significantly reduces anxiety, depression, and PTSD symptoms in youth exposed to natural disasters and sexual abuse. Field and Cottrell (2011) also conducted a systematic review of the use of EMDR with maltreated youth, revealing consistent improvement in anxiety, posttraumatic stress, and mood-related symptoms. When compared to

the CBT group, the individuals in the EMDR group showed that there were no differential improvements in treatment outcomes suggesting that EMDR is as effective in symptom reduction for maltreated youth (Field & Cottrell, 2011).

*Prolonged exposure* (*PE*). PE has been used to treat the symptoms of anxiety, specifically phobic symptoms and traumatic stress reaction-related symptoms (Burns et al., 1999; Hunter, 2010). PE is a cognitive behavioral treatment based on emotion-processing theory that suggests cognitive mediation can mediate emotional reactions to traumatic events (Foa, 2011; Hunter, 2010). Studies show promising results, but there were no Randomized Controlled Trial studies reviewed to determine if PE is considered an evidence-based strategy in the treatment of maltreated adolescents. Hunter (2010) addresses a weakness of PE due to the fact that exposure therapies can increase treatment resistance in adolescents.

*Family-focused interventions*. Effective treatment targeting the family system, including both the youth and the caregivers, seems to include home-based treatments for behavior management, home-based relationship enhancement, education about problem solving strategies, safety skills, and stress management (Donohue & Van Hasselt, 1999). In addition, research demonstrates family involvement improves treatment outcomes for maltreated youth (Dowell & Ogles, 2010). Although these treatment strategies are efficacious in improving family functioning, much of the research has noted family-focused interventions as promising or possibly efficacious due to lack of RCT-designed studies and methodological flaws (Burns et al., 1999; Dawson & Berry, 2002).

*MST*. Multisystemic therapy (MST) is an ecosystemic approach in which family therapy, interventions with youth, parent education, marital therapy, communication-skills building, and coaching are all provided in both the home and community settings (Cohen et al., 2006; Ronan et al., 2009; Swenson, Schaeffer, Henggeler, Faldowski, & Mayhew, 2010). Swenson et al.

(2010) conducted a randomized controlled trial of MST comparing treatment outcomes to youth in enhanced outpatient treatment (EOT). They found that MST was significantly more effective in reducing psychiatric symptoms in adolescents, specifically youth symptoms of depression, dissociation, and PTSD (Cohen et al., 2006; Swenson et al., 2010). Additionally, MST was useful in adolescent delinquent behavior, substance use, and sex offending (Ronan et al., 2009).

*MFGT*. Multifamily group therapy (MFGT) (Cohen et al., 2006) and family support groups (Kutash & Rivera, 1995) have been evaluated for treating neglected youth. MFGT aims at changing individual family members' behaviors and family interaction patterns through systems and group therapy with psycho-educational and behavior management strategies. When compared to youth reports of improvement in functioning who were assigned to traditional family therapy, youth in the MFGT treatment groups reported more assertiveness and less submissiveness (Cohen et al., 2006).

*Wilderness therapy*. Wilderness therapy programs provide experiential learning opportunities to improve and grow in areas of interpersonal relationships, self-esteem, social skills, self-control, and school adjustment (Gillis & Speelman, 2008; Werhan & Groff, 2005). Research specific to the incorporation of this intervention into treatment for the impact of adolescent maltreatment could not be found. However, outcome measures show that youth participants showed medium effect sizes in improvement in sense of self, self-esteem, and in academic measures (Gillis & Speelman, 2008). Additionally, wilderness therapy was conducted with youth who had poor parental relationships; participation in wilderness therapy resulted in an increase in openness, more trust, and more security in their relationships with their parents (Bettmann, Olson-Morrison, & Jasperson, 2011).

*Therapeutic foster homes*. Preliminary research showed therapeutic foster care (TFC) had positive effects on reducing problem behaviors in a quicker and more cost-effective manner (Burns et al., 1999; Farmer, Wagner, Burns, & Richards, 2003). Areas of significant improvement after discharge from TFC included better adjustment, higher self-esteem, a sense of identity, and decreases in aggressive behaviors which were sustained for some period of time (Burns et al., 1999). Additional research showed that youth discharged from TFC as opposed to traditional foster care were less likely to be incarcerated, showed fewer problem behaviors, and were more likely to be living with a relative or parents during the year after discharge (Meadowcroft et al., 1994).

*Other promising approaches*. EEG-based technology and use of EEG biofeedback (EEG-BF) (also known as neurofeedback, neurobiofeedback, or neurotherapy) has been shown to have encouraging results in the treatment of children with a history of abuse and neglect. In a study to investigate the effectiveness of EEG-BF for children with a history of abuse and neglect, Huang-Storms et al. (2006) found that EEG-BF successfully reduced affective, behavioral, cognitive, and social problems in this population.

Similarly, personalized medicine is being paid attention to in pediatrics due to the intrinsic qualities of brain development and plasticity in children/adolescents, as well as for preventive care (McEwen & Getz, 2013). Personalized medicine interventions (including rEEG-guided pharmacotherapy) are promising in prescriptive differential decision making for psychopharmacological management. Consequently, to understand and follow a suitable psychopharmacological approach in the treatment of physical abuse, it is important to understand and apply the neurobiology of maltreatment.

## What Does Not Work

*Psychological debriefing*. A common intervention designed to prevent psychological distress that is used with individuals who have witnessed or experienced a traumatic event is known as psychological debriefing (Stallard et al., 2006; Kirk & Madden, 2003). The intervention is

delivered in a structured format in order to normalize reactions and encourage emotional processing of the event (Kirk & Madden, 2003). A review of the use of psychological debriefing found it is not preventative in the future development of psychiatric disorders, but individual report showed a general sense of helpfulness in the recovery process (Arendt & Elklit, 2001). Stallard et al. (2006) found that psychological debriefing did not produce any long-lasting effects on outcome after witnessing a traumatic event in youth ages 7–18 and may in some cases be retraumatizing to children and adolescents. Psychological debriefing is not recommended for adolescents at this time.

## Psychopharmacology and Physical Abuse and Neglect

Being that physical abuse is a vast construct defined and manifested in different ways, psychopharmacological treatment focuses in symptom improvement. Researchers found evidence that treatment with selective serotonin reuptake inhibitors (SSRIs) may target the neurobiological effects of ACEs (including irregular metabolic activity and mood dysregulation). SSRIs (e.g., fluoxetine, sertraline, paroxetine, fluvoxamine, and citalopram) are prescribed in the treatment of depression and anxiety symptoms (Physicians' desk reference cited in PDR Staff, 2012). Serotonin is associated with both depression and anxiety (Bruce, Heimberg, Blanco, Schneier, & Liebowitz, 2012; Carrion & Kletter, 2012; Fagundes et al., 2013; Frodl et al., 2010; Heim et al., 2010; Stamatakos & Campo, 2010; Wilson et al., 2012).

Evidence-based data from psychopharmacological trials for the treatment of physical abuse and PTSD in youth are limited (Carrion & Kletter, 2012; Stamatakos & Campo, 2010). As such, there are few OT studies and double-blind RCTs for SSRIs; the results of these studies are not conclusive in treatment efficacy/outcome or even metabolic impact (Cohen, Mannarino, Perel, & Staron, 2007; Robb, Cueva, Sporn, Yang, & Vanderburg, 2010; Seedat, Lockhat, Kaminer,

Zungu-Dirwayi, & Stein, 2001; Seedat et al., 2002; Stamatakos & Campo, 2010; Stoddard Jr et al., 2011). The SSRIs included citalopram (Celexa™), fluoxetine (Prozac™), fluvoxamine (Luvox™), paroxetine (Paxil™), and sertraline (Zoloft™). One OT of 26 youth found fluoxetine to be effective in preventing post-earthquake PTSD symptoms, and another comparing 24 youth with 14 adults diagnosed with PTSD found equivalent results with citalopram (Seedat et al., 2002; Yorbik, Dikkatli, Cansever, & Sohmen, 2001). Yet in two sertraline studies, when compared to placebo, SSRIs were not as effective in reducing PTSD symptoms (Cohen et al., 2007; Robb et al., 2010). Moreover, beyond mixed results from research, safety concerns also limit the use of SSRIs.

The warnings issued by the British Medicines and Healthcare products Regulatory Agency (MHRA) in 2003 and the Federal Drug Administration (FDA) in 2004 regarding the increased risk of suicide-related behavior have been a limiting factor in the use of SSRIs with children and adolescents (Levin, 2009). Moreover, SSRIs have an over-activating potential which may produce irritability, inattention, and sleep difficulties (Carrion & Kletter, 2012). Therefore, while the use of SSRIs with this population has potential and certainly calls for further research, definitive support for their use, as it is for adults, is not readily available (Stamatakos & Campo, 2010). Nonetheless, in cases of physical abuse, it has been found that cognitive behavioral therapy (CBT) is able to positively modulate the neurobiological effects of ACEs as effectively as SSRIs. Recently, Omega 3 (most specifically fish oil, e.g., cod liver oil) is being found to modulate not only irregular metabolic activity, which directly impacts the limbic system, mood, and ANS regulation, but also attention and cognitive problems; as well, it is suggested as evidence of indicated prevention of psychotic disorders (Amminger et al., 2010; Bhathena, 2006; Burri, Hoem, Banni, & Berge, 2012; Darios & Davletov, 2006; Gao & Calabrese, 2005; Hibbeln, Nieminen, Blasbalg, Riggs, & Lands, 2006; Hibbeln, Ferguson, & Blasbalg, 2006; Mahadick, Pillai, Joshi, & Foster, 2006;

Malhi & Berk, 2002; Marangell et al., 2006; Nemets, Nemets, Apter, Bracha, & Belmaker, 2006; Parker, Gibson, Brotchie, Rees, & Hadzi-Pavlovic, 2006; Reis & Hibbeln, 2006; Richardson, 2003, 2006; Sublette, Hibbeln, Galfalvy, Oquendo, & Mann, 2006; Vaddadi, 2006; Williams et al., 2006; Wright, Coverston, Tiedeman, & Abegglen, 2006).

There are non-SSRI antidepressants; among them are monoamine oxidase inhibitor (MAOI) and tricyclic antidepressants (TCAs), which have been considered for children and adolescents with trauma histories. In a study evaluating PTSD symptoms secondary to acute burns, it was demonstrated that imipramine (Tofranil™), over chloral hydrate (Noctec™), reduced the likelihood of developing symptoms 6 months after the injury (Robert, Blakeney, Villarreal, Rosenberg, & Meyer, 1999). However it should be noted that these medications are associated with serious side effects such that they should not be considered first-line choices for children/adolescents (Carrion & Kletter, 2012).

Another line of treatment entails the second-generation (atypical) antipsychotics (i.e., risperidone, olanzapine, clozapine, and quetiapine), mostly used due to the lower risk as compared to the first-generation (typical) antipsychotics (Friedman, 1998). The research on antipsychotics for children/adolescents is limited (Kant, Chalansani, Chengappa, & Dieringer, 2004; Meighen et al., 2007; Stathis, Martin, & McKenna, 2005). There is insufficient evidence at present to support use of these medications to treat physical abuse symptoms in children/adolescents. Nonetheless, they (as well as SSRIs) may be helpful while treating symptoms of physical abuse that is comorbid with psychosis, bipolar, or conduct disorder (Cohen, 2010; Conus et al., 2010). Further, caution should be exercised due to the lack of research in this population. Being that children/adolescent brains are still developing and have not achieved full maturation, further research is needed (RCT and OT), to understand not only treatment effects/outcomes but also the neurobiological metabolic process of the drugs.

## The Prevention of Physical Abuse and Neglect

### What Works

Prevention programs can be categorized into three common types (Gonzalez & MacMillan, 2008). These types include universal programs focused on whole populations (e.g., a group of freshman in high school), targeted programs which typically focus on education for high-risk groups of individuals who may demonstrate one or more of the risk variables, and "tertiary" prevention programs designed to minimize the negative impact of maltreatment and prevent the recurrence (Gonzalez & MacMillan, 2008).

Physicians and nurse practitioners could be the first professionals in contact with teens who may be experiencing any form of maltreatment. If the medical professionals have good relationships with families they can look for warning signs, can educate and share information regarding parenting practices, and can conduct brief psychosocial assessments that may identify risk factors or situations (Dubowitz & Bennett, 2007; Wurtele, 1999). Research demonstrates having a child/adolescent with a disability is a risk factor for subsequent maltreatment; therefore, medical providers are in a unique position to educate caregivers about medical disorders and the course of symptoms as well as watch for signs and symptoms of neglect and/or abuse (Dubowitz & Bennett, 2007; Wurtele, 1999). Interventions designed to provide emotional support, guidance, education, and resources to families in their home by home visit nurses or lay professionals have been shown repeatedly to be effective in various child abuse prevention programs (Gonzalez & MacMillan, 2008; Wurtele, 1999).

Specifically for the teen, school-based child abuse awareness or violence prevention programs reportedly demonstrate moderate levels of success with regard to improving adolescent's nonviolent responses, increasing conflict resolution skills, and increasing adolescent's own parenting skills and practices (Mulsow & O'Neal, 2003). Community

support groups show similar positive outcomes in this regard (Mulsow & O'Neal, 2003). In home family services include intensive support to a family with regard to therapy, education, case management, and referrals also show positive outcomes (Mulsow & O'Neal, 2003; Reifsteck, 2005).

The Center for the Study of Social Policy developed an evidence-informed strategy which identified five factors necessary to be included in primary prevention programs aimed at prevention of child abuse (Horton, 2003). These factors include increasing parental resilience, improving parental knowledge of child development and appropriate responses, building a parent's social connectedness and level of support, provision of concrete supports when needed, and aiding children in the development of the skills needed for both social and emotional competence (Horton, 2003). The Child Abuse Prevention and Treatment Act program specifically funded research for eight prevention programs geared to providing education to parents/caregivers after individualized assessment of each family and designed specifically to focus on culturally sensitive interventions and empowerment of family members (Kaplan, 2008). Evidence-informed program outcomes for these programs focused on increasing parents' ability to address and cope with daily stressors, to respond to their child in a developmentally appropriate manner, to improve the mother–child attachment relationship, to minimize conflicts, increase resources, and effectively utilize social supports in their communities (Cicchetti & Toth, 2005; Kaplan, 2008). Specifically, educating parents on positive parent–child interaction skills, increasing a parent's emotional communication skills, and providing parents an opportunity to practice these skills, especially in a home environment, appear essential to the success of tertiary prevention programming (USDHHS, 2009, 2013).

Other factors considered critical in exemplary child abuse prevention programs include a long-term program structure, use of peer facilitators, trusting relationships between staff and parents that respect diversity and cultural differences, and inclusion of educational information to aid parents with the development of decision making skills (Horton, 2003). Examples of some of the exemplary programs that demonstrate efficacy include Early Head Start, Families and Schools Together (FAST), Incredible Years, Nurse Family Partnership (NFP), Parent–Child Interaction Therapy, Strengthening Families, Healthy Families America (HFA), Triple P (FRIENDS National Resource Center for CBCAP, 2009), and Project Safe Care (Berry et al., 2003). Finally, perceptions of safety, coupled with violence prevention programs, appeared to have a preventative effect with regard to maltreatment (Crooks, Scott, Wolfe, Chiodo, & Killip, 2007). Thus, early intervention for the child(ren) and/or family (Dubowitz & Bennett, 2007) is critical to moderating the potential negative long-term impacts of child maltreatment.

## What Might Work

While caregivers who participate in parenting education programs report increased knowledge of acceptable parenting practices, research demonstrates the knowledge alone does not result in decreased occurrence of child abuse; thus, research on outcomes in parenting education programs remains conflicted (Mulsow & O'Neal, 2003). The difference may be a result of both additional supports for families and skill-based development for children, and many promising programs include home visiting which appears to be a key variable to the success of these programs (FRIENDS National Resource Center for CBCAP, 2009). In addition, for adolescents specific teen pregnancy and prenatal care programs, as well as changes in public child welfare laws including screening and treatment availability for parents with psychological disorders appear to also be promising as preventative measures (Mulsow & O'Neal, 2003).

Programs and practices that are supported by some evidence-based research (as evaluated by SAMHSA, OJJDP, and Promising Practices Network) include Get Real about Violence, Guiding Good Choices, Healthy Families NY, Perry Preschool Project, Success in Stages, Schools and Families Educating Children (SAFE Children), and Parents as Teachers among others (FRIENDS National Resource Center for CBCAP,

2009). Also identified as emerging programs were 1-2-3- Magic and Who Do You Tell? (FRIENDS National Resource Center for CBCAP, 2009).

## What Does Not Work

Evaluation has determined teacher discretion parenting programs with no systemic or financial support and culturally insensitive parenting programs including short-term intensive family preservation are ineffective in the prevention of adolescent maltreatment (Kaplan, 2008; Mulsow & O'Neal, 2003). Other programs which teach parents how to problem solve child's behaviors, or programs that focus on aiding parents in improving their child's cognitive and academic skill set were also determined to be insufficient preventative measures (USDHHS, 2009). In addition, prevention and intervention programs are not effective, however, for those families who do not know they need assistance and/or have more challenging complex familial stressors thus limiting the individual intervention models (USDHHS, 2013).

## Conclusions: Recommendations for Best Practices

Research on the specific impact, prevention, and treatment of physical abuse, neglect, and emotional abuse of adolescents was fraught with multiple factors that limited its utility. Specifically, low sample sizes and flawed outcome measures in many of these research studies impact the generalizability of research. Additionally, presupposition of childhood maltreatment for adolescents was a confounding variable as well as the intermingling of Literature regarding co-occurrence of neglect with physical abuse and/or sexual abuse, while known information about sexual abuse victimization demonstrates unique results that should be parceled out and not categorized as maltreatment. The current literature review, however, suggests recommendations for best practice.

In residential settings, evidence-based practice includes milieu therapy, family involvement, and provision of services addressing various comorbid diagnoses. In community and outpatient settings evidence-based practices are going to continue to include therapies in the cognitive behavioral realm, including new treatment approaches of EMDR and PE. Specifically, TF-CBT is considered the "gold standard" with regard to treating trauma and related symptomatology in adolescents. Promising treatment interventions include various family therapy approaches and intervention that takes into account the neurobiology of maltreatment (i.e., EEG, biofeedback, etc.). Similarly, psychopharmacological approaches should still be considered cautiously as efficacy research is limited for this age group and comorbid diagnosis is common. Overall, as is consistent with adult intervention modalities for trauma, research continues to overwhelmingly demonstrate family support and involvement as "the" moderating variable with regard to ameliorating potential long-term negative impact of any type of trauma with any age individual.

Best practices should continue to focus on utilization and support of comprehensive long-term prevention efforts. With regard to prevention, themes that emerged for successful prevention and intervention included new approaches to service delivery, improving of limitation issues, increasing family engagement, delivery of services in the home, and the incorporation of holistic approaches (e.g., multisystemic, ecological perspectives).

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# Non-Suicidal Self-Injury

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## Introduction

Non-suicidal self-injury (NSSI) is defined as deliberate self-inflicted injury to the body that is performed without suicidal intent (International Society for the Study of Self-Injury, n.d.); common methods of NSSI include cutting, burning, skin picking, self-hitting, and biting (i.e., Barrocas, Hankin, Young, & Abela, 2012; Nock & Prinstein, 2004; Ross & Heath, 2002). Although the behaviors are generally to be of low medical lethality (i.e., Muehlenkamp, 2005), NSSI is associated with a number of negative outcomes. In addition to medical consequences, such as physical injury, infection, and scarring, NSSI is associated with guilt, shame, isolation (Gratz, 2003), anger, emotional distress, and risky behaviors (Laye-Gindhu & Schonert-Reichl, 2005). The behavior is repetitive and occurs frequently (Muehlenkamp, 2005; Walsh, 2006), putting the individual at continued risk of harm. In addition, research has identified NSSI as an important risk factor for attempted suicide in both adolescents and adults (i.e., Andover &

Gibb, 2010; Wichstrøm, 2009; Wilkinson, Kelvin, Roberts, Dubicka, & Goodyer, 2011). NSSI behaviors generally onset between 12 and 14 years, and adolescents and young adults appear to be at greatest risk of engaging in the behavior (Jacobson & Gould, 2007; Rodham & Hawton, 2009). These factors make adolescence an important period for research, intervention, and prevention efforts focused on NSSI.

As NSSI and attempted suicide both involve deliberate tissue damage, clinicians and caregivers alike sometimes misinterpret NSSI as a suicide attempt. One study found that nearly 90 % of adolescent psychiatric inpatients reported that their NSSI behaviors were misconstrued as a suicide attempt (Kumar, Pepe, & Steer, 2004). NSSI and suicide attempts are considered distinct behaviors, and they differ in several important ways. Most importantly, the behaviors differ in intent to die; NSSI behaviors must be performed in the absence of suicidal intent. In addition, the behaviors differ in medical lethality, chronicity, perception, function (Muehlenkamp, 2005; Suyemoto, 1998), and risk and protective factors (Wichstrøm, 2009). Despite the distinction between the behaviors, a significant number of adolescents and adults who engage in NSSI report a history of at least one suicide attempt (i.e., Boxer, 2010; Muehlenkamp & Gutierrez, 2007; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). Emphasizing the risk associated with NSSI, self-injury without intent to die may be a stronger risk factor for attempted suicide than

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other established predictors, such as history of suicidal behaviors (Andover & Gibb, 2010; Wilkinson et al., 2011). Interestingly, NSSI is not associated with all suicidal behaviors; NSSI predicts future suicidal ideation and attempts, but not suicidal threats or gestures (Guan, Fox, & Prinstein, 2012). Therefore, despite the distinction between NSSI and attempted suicide, clinicians and mental health providers should carefully assess for suicidal ideation and behaviors in adolescents who engage in NSSI.

A developmental theory of NSSI has not yet been established in the field, although models explaining the development and/or maintenance of the behavior have been proposed (e.g., Nock, 2009; Yates, 2004). According to the more comprehensive of these models (Nock, 2009), distal risk factors (i.e., childhood abuse, a genetic predisposition to emotional or cognitive reactivity, high family hostility or criticism) lead to the development of intrapersonal vulnerability factors (i.e., poor distress tolerance) and interpersonal vulnerability factors (i.e., poor communication skills). These intrapersonal and interpersonal vulnerability factors lead to ineffective responses to stressful situations. Coupled with NSSI-specific vulnerability factors (i.e., social learning through modeled NSSI, accessibility of NSSI behaviors, pain analgesia), the individual engages in NSSI to regulate intrapersonal and interpersonal responses to stressful events (Nock, 2009). Research is necessary to fully evaluate this theory, but it provides an excellent starting point for conceptualizing adolescents who engage in NSSI (Andover, 2012).

In recent years, a significant amount of research has focused on understanding the functions of NSSI. Although many functions have been proposed for the behavior (i.e., anti-suicide, self-punishment, call for help, emotion regulation; Klonsky, 2007; Suyemoto, 1998), recent research has supported a functional model of NSSI behaviors. According to this behavioral model, NSSI may be performed for automatic negative reinforcement (i.e., removal of an aversive stimulus), automatic positive reinforcement (i.e., generation of a favorable stimulus), social negative reinforcement (i.e., escape from interpersonal demands),

and social positive reinforcement (i.e., gaining attention from others or access to environmental or interpersonal resources; Nock & Prinstein, 2004, 2005). Empirical support has been found for both automatic and social reinforcement, but adolescents most often endorse automatic reinforcement functions of NSSI (Nock & Prinstein, 2004; Nock, Prinstein, & Sterba, 2009), such as emotion regulation and cognitive regulation (Franklin et al., 2010). This parsimonious model of NSSI function has influenced research, treatment, and assessment alike.

## DSM-5 and Incidence/ Prevalence Rates

In the previous edition of the Diagnostic and Statistical Manual (DSM-IV-TR; American Psychiatric Association, 2000), NSSI appeared only as part of the criteria for borderline personality disorder (BPD). However, NSSI does not occur exclusively in the context of BPD. A significant proportion of adults and adolescents with NSSI do not meet criteria for a BPD diagnosis (Andover, Pepper, Ryabchenko, Orrico, & Gibb, 2005; Muehlenkamp, Ertelt, Miller, & Claes, 2011). Importantly, NSSI behaviors occur across psychiatric disorders (Nock et al., 2006). The behavior has been associated with major depressive disorder, dysthymia, anxiety disorders including posttraumatic stress disorder, substance abuse (Jacobson & Gould, 2007; Nock et al., 2006), eating disorders and eating pathology (Peebles, Wilson, & Lock, 2011; Ross, Heath, & Toste, 2009), and increased symptoms of BPD, even in the absence of a BPD diagnosis (Andover et al., 2005; Klonsky & Olino, 2008; Klonsky, Oltmanns, & Turkheimer, 2003; Muehlenkamp et al., 2011).

This limited—and potentially inappropriate— representation of NSSI, coupled with the public health impact of the behavior and its distinct presentation from other self-injurious behaviors, led the Child and Adolescent Workgroup for the DSM-5 to propose a diagnosis of NSSI Disorder (APA, 2010). This disorder is included in Section 3 of DSM-5, Disorders Requiring Further Research

(APA, 2013). Criteria for the disorder include the following:

1. Intentional self-inflicted injury performed with the expectation of physical harm but without suicidal intent. The behavior must have occurred on five or more days in the past year.
2. The behavior is performed for at least one of the following reasons:
   (a) For relief from negative thoughts or feelings
   (b) To resolve an interpersonal problem
   (c) To cause a positive feeling or emotion
3. The behavior is preceded by at least one of the following:
   (a) Negative thoughts or feelings or interpersonal problems occurring immediately prior to engaging in NSSI
   (b) Preoccupation with NSSI prior to the act that is difficult to resist
   (c) Frequent urge to engage in NSSI
4. The behavior is not socially sanctioned and is more significant than nail biting or picking at a scab.
5. The behavior causes clinically significant distress or impairment.
6. The behavior does not occur exclusively within psychosis or dementia or as part of stereotypic behavior among individuals with developmental disorders, and the NSSI cannot be accounted for by another mental or medical disorder (APA, 2013).

Despite an empirical basis for the proposed criteria (APA, 2010), no published research studies have evaluated the diagnosis as of yet, and few research studies have used the cutoff of NSSI on five or more days to categorize individuals who engage in NSSI. However, in preliminary studies of the NSSI diagnostic criteria, Barrocas et al. (2012) reported that 1.5 % of community youth met some of the proposed criteria, and youth with five or more NSSI episodes in the past year reported greater distress than other youth.

Although NSSI is included as a DSM-5 condition for further study, Excoriation (Skin Picking) Disorder, proposed by the Obsessive Compulsive Related Disorders Workgroup, has been accepted for inclusion in Section 2. Criteria for this disorder include repeated skin picking resulting in tissue damage that is associated with distress or impairment in functioning, but cannot be accounted for by another mental or medical disorder (APA, 2013; Stein et al., 2010). Although some authors suggested the addition of an urge to pick or relief during skin picking to the criteria (i.e., Arnold, Auchenbach, & McElroy, 2001), the current criteria were supported by a field trial of the diagnosis (Lochner, Grant, Odlaug, & Stein, 2012). Of concern, it is unclear to what extent skin picking disorder will be distinct from NSSI and NSSI Disorder (i.e., McKay & Andover, 2012), as skin picking is a common method of NSSI.

Because of the early stage of these diagnoses, prevalence and incidence of the disorders is not yet established. However, numerous research studies have reported an alarmingly high lifetime prevalence of NSSI in youth and young adults. Rates of NSSI in community samples of adolescents are high, ranging from 12.7 % to as high as 46.5 % (i.e., Barrocas et al., 2012; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007; Muehlenkamp & Gutierrez, 2007; Muehlenkamp, Williams, Gutierrez, & Claes, 2009). Rates of NSSI are also alarmingly high among children. Barrocas et al. (2012) found that 7.6 % of children in the third grade and 4.0 % of children in the sixth grade reported engaging in NSSI. Despite concerns that the rate of NSSI in adolescents may be increasing over time, Muehlenkamp et al. (2009) reported that rates of the behavior remained relatively stable over a 5-year period, suggesting that any increases in rates of NSSI may be more likely to be due to improvements in assessment or reduced stigma in reporting such behaviors.

## Biological/Genetic Factors

Understanding the role of biological and genetic factors in the development of NSSI is important for understanding the etiology and treatment of the behavior. However, few studies directly examine the biological correlates of NSSI alone; most research in this area focuses on adults with BPD or deliberate self-harm (DSH), which includes

self-injurious behaviors with and without suicidal intent. Although more research is needed to elucidate the biological processes underlying NSSI specifically, research in these related areas may inform our understanding of NSSI. In addition, as important neurological changes occur during adolescence, particularly those involving emotion regulation (Barrocas & Hankin, 2011), it is essential to extend this area of literature to include adolescent samples in particular.

*Brain regions*. As discussed in detail by Ballard, Bosk, and Pao (2009), significant changes in the brain occur during adolescence, including decreases in grey matter volume, number of chemical synapses and neurotransmitter receptor density, increases in white matter, and increased reliance on the frontal lobes concurrent with decreased reliance on the limbic system and nucleus accumbens (Giedd, 2008). Although these changes reflect improvements in executive function, such as decision-making and planning, increased dopamine in the nucleus accumbens and increased activity of the hypothalamic-pituitary-adrenal (HPA) axis may put adolescents at risk for impulsive behavior, including NSSI (Ballard et al., 2009). Despite the importance of studying neural correlates in this age group, only one study has focused on functional differences in the brains of self-injuring adolescents; primarily, research in this area has often focused on BPD.

Plener, Bubalo, Fladung, Ludolph, and Lulé (2012) used functional MRI to evaluate differences in emotion processing between adolescent females with and without histories of NSSI. When shown emotional pictures, the NSSI group exhibited a significantly stronger response in the amygdala, hippocampus, and anterior cingulate cortex (ACC) bilaterally. In addition, those with NSSI showed increased activity in the middle orbitofrontal cortex and the middle and inferior frontal cortex when viewing pictures with NSSI content. Results of this study suggest that adolescents who engage in NSSI show an altered neural pattern when viewing pictures with emotional and NSSI content. Further research is necessary to continue to clarify the brain regions associated with NSSI.

*Endogenous opioids*. Although NSSI involves deliberate injury to body tissue, most adolescents report experiencing little or no pain during NSSI episodes (Nock & Prinstein, 2005). This finding has been supported by laboratory research with adults; for example, Hooley, Ho, Slater, and Lockshin (2010) reported that individuals with a history of NSSI displayed significantly higher pain thresholds and endured pain for almost twice as long as individuals with no NSSI history. Analgesia associated with NSSI may be even greater when individuals are experiencing distress (Bohus et al., 2000; Ludascher, Bohus, Lieb, Philipsen, & Jochims, 2007; Schmahl et al., 2006). Given the well-established relation between pain perception and endogenous opioids (Sher & Stanley, 2008), it is not surprising that research indicates an association between NSSI and endogenous opioids. Coid, Allolio, and Rees (1983) reported that higher plasma levels of met-enkephalin, an endogenous opioid, were associated with engagement in NSSI in individuals with BPD, suggesting a relationship between NSSI and the endogenous opioid system. As plasma levels of neuropeptides may not accurately reflect central levels, Stanley et al. (2010) examined endogenous opioids using cerebrospinal fluid (CSF) levels and reported lower levels of CSF met-enkephalin and β-endorphin, another endogenous opioid, among individuals with BPD with a history of NSSI compared to those with no NSSI history. This suggests that opioids acting on receptors involved in mediating stress-induced and physical pain analgesia may play a role in NSSI (Stanley et al., 2010). Further research is needed to investigate the nature of the relationship between endogenous opioids and NSSI, particularly in adolescents.

*HPA axis*. The HPA axis is part of the neuroendocrine system and helps humans and animals manage physical, cognitive, and socioemotional challenges (Barrocas & Hankin, 2011). The steroid hormone cortisol is the primary product of the HPA axis. A possible relationship between cortisol and NSSI has been reported in a case study of a woman with BPD and repetitive NSSI (Sachsse, Von der Heyde, & Huether, 2002). However, studies have not examined the role of

cortisol as it applies to NSSI in adolescents. This is especially important, as increased HPA axis activity occurs during puberty, which results in the increased production and release of cortisol (White, 2009). This increased activity may be related to the development of NSSI; Barrocas and Hankin (2011) suggest that increased levels of cortisol may contribute to increased emotional reactivity and difficulty inhibiting impulses, two factors that might lead to engagement in NSSI.

*Serotonin*. Serotonin is a monoamine neurotransmitter that has various functions in the central nervous system, including the regulation of mood, arousal, impulsivity, sleep, and appetite (Lucki, 1998); serotonin has been implicated in suicidal behaviors among adolescents (i.e., Tyano et al., 2006). Only one study has examined the association between serotonin and NSSI in an adolescent sample. Crowell et al. (2008) found lower serotonin levels among adolescent girls with a history of NSSI when compared with those without an NSSI history, even after controlling for antidepressant use. However, as adolescents with past suicide attempts were included in the sample, results may not be specific to NSSI. Further research is needed to elucidate the role of serotonin in adolescents who engage in NSSI.

*Dopamine*. Fewer studies have investigated the role of dopamine in self-injurious behaviors (for review, see Mann & Currier, 2007). Dopaminergic dysfunctions have been associated with suicidal behavior, with some studies finding lower levels of CSF homovanillic acid (HVA), a dopamine metabolite (Roy et al., 1986), and urinary HVA (Roy, Karoum, & Pollack, 1992) output among individuals with a history of attempted suicide, but other studies have not replicated this finding (e.g., Engstrom, Alling, Blennow, Regnell, & Traksman-Bendz, 1999). More specific to NSSI, Gardner, Lucas, and Cowdry (1990) and Stanley et al. (2010) found no differences in CSF HVA levels between individuals with and without a history of NSSI. However, because of the methodology employed by these studies, it is unclear if these findings are germane to NSSI specifically. To date, these studies have not been replicated in an adolescent sample.

*Genetic factors*. Investigations of genetic polymorphisms associated with suicidal behavior have focused on genes associated with serotonin neurotransmission based on the association between serotonin and suicidal behaviors. However, this research, which has focused primarily on attempted and completed suicide, suggests associations between suicidal behavior and serotonergic genes, including tryptophan hydroxylase (TPH), HTR2A, 5-HTT, and 5-HT1Dβ receptor (see Turecki, 2001, for a review). To extend these findings, Pooley, Houston, Hawton, and Harrison (2003) investigated the role of serotonergic gene polymorphisms in adolescents and adults with and without DSH histories. Only the TPH A779 allele was more common in individuals with DSH than in non-injurers. These findings diverged from other research suggesting no difference in TPH frequency among adolescents who recently attempted suicide (Zalsman et al., 2001) and suicidal and non-suicidal individuals with major depressive disorder (Furlong et al., 1998). While the difference in findings may reflect the inclusion of NSSI in behaviors assessed by Pooley et al. (2003), studies have not investigated the role of specific genes associated with NSSI alone. More research is necessary to understand the role of genetics in NSSI specifically.

## Individual Factors Influencing Risk and Resiliency

As is the case with many mental health conditions, a complex network of factors can be attributed to the etiology and underlying mechanisms of NSSI. At this time, longitudinal studies of risk and protective factors for NSSI among adolescents are limited, particularly for those factors that increase the capacity for resilience. This section reviews risk and protective factors of NSSI that have been established through prospective studies on adolescents, as well as other factors that are especially promising for future research.

*Demographic variables*. Several demographic variables have been investigated in association with NSSI behaviors, including ethnicity, age,

and gender. Although several studies have reported no association between ethnicity and NSSI (i.e., Guan et al., 2012; Hankin & Abela, 2011; Hilt, Nock, Lloyd-Richardson, & Prinstein, 2008), Gratz et al. (2012) found that African American youth were more likely to report NSSI than White youth and that rates of NSSI varied by ethnicity, gender, and school level. This study suggests that additional research on ethnicity and NSSI is necessary, and the interaction between ethnicity, age, and gender merits further exploration. Younger age has been evaluated as a predictor of NSSI. Research suggests that younger age predicts NSSI behaviors (Wichstrøm, 2009; Wilkinson et al., 2011), and younger age of onset has been shown to predict recurrent, rather than intermittent, NSSI (Yates, Carlson, & Egeland, 2008). Although NSSI was often thought to be more common among women (i.e., Favazza & Conterio, 1989; Suyemoto, 1998), studies have suggested that rates of NSSI are similar between men and women in young adult and adult samples (i.e., Andover, Primack, Gibb, & Pepper, 2010). Studies of NSSI in children and adolescents, however, have been mixed. While some researchers report similar prevalence rates for males and females (i.e., Muehlenkamp & Gutierrez, 2004), others have reported that significantly more adolescent girls engage in the behavior (i.e., Barrocas et al., 2012; Ross & Heath, 2002), and female gender has been shown to predict NSSI (Wilkinson et al., 2011). However, Barrocas et al. (2012) reported that although significantly more girls than boys endorsed NSSI in ninth grade, rates of NSSI between girls and boys were similar in the third and sixth grades. Additional research is necessary to clarify the role of gender in NSSI, as well as to investigate the possibility of an interaction effect between gender and age.

*Risk factors for NSSI.* Few longitudinal studies have examined risk factors for NSSI. Existing studies have focused primarily on identifying factors that uniquely predict NSSI or attempted suicide among adolescents (i.e., Andover, Morris, Wren, & Bruzzese, 2012). In addition,

studies prospectively investigating NSSI have utilized samples of adolescents with major depressive disorder (Wilkinson et al., 2011) or treatment resistant depression (Asarnow et al., 2011), as well as non-clinical samples (Hankin & Abela, 2011; Wichstrøm, 2009). Individual NSSI risk factors among adolescent samples supported by these studies include hopelessness, presence of an anxiety disorder (Wilkinson et al., 2011), history of a suicide attempt, non-heterosexual sexual interest (Wichstrøm, 2009), negative cognitive style, depressive symptoms, maternal depression, excessive reassurance seeking (Hankin & Abela, 2011), and history of NSSI (Wichstrøm, 2009; Wilkinson et al., 2011). Shorter time to engaging in NSSI following treatment for depression was predicted by history of NSSI and physical and/or sexual abuse (Asarnow et al., 2011). NSSI is associated with increased psychiatric symptoms; although only the presence of an anxiety disorder has been supported as a risk factor to date (Wilkinson et al., 2011), the presence of any psychiatric disorder may increase risk for NSSI (i.e., Klonsky & Glenn, 2009). In addition, research has consistently demonstrated an association between NSSI and emotion dysregulation, and several models have conceptualized difficulties in emotion regulation as an important factor in understanding the development of NSSI (Linehan, 1993; Nock, 2009). Emotion dysregulation may increase risk of engaging in NSSI, especially among adolescents (Adrian, Zeman, Erdley, Lisa, & Sim, 2011; Klonsky & Glenn, 2009).

*Protective factors for NSSI.* Even less research has been devoted to understanding individual protective factors for NSSI among adolescents. The few longitudinal studies that have been conducted on the topic have identified only social factors that may be protective against the development of NSSI, which will be discussed in the next section. However, given the association between NSSI and emotion dysregulation, effective coping strategies have been postulated as a protective factor for NSSI (i.e., Klonsky & Glenn, 2009).

## Family Factors Influencing Risk and Resiliency

*Risk factors for NSSI.* In addition to individual risk and protective factors, several researchers have examined familial and social risk factors associated with NSSI (See Jacobson & Gould, 2007, for a review).

*Childhood maltreatment.* Researchers investigating the association between childhood maltreatment and NSSI have examined the relations between sexual abuse, physical abuse, emotional abuse, and neglect and NSSI. Of the four types of child abuse studied, the link between childhood sexual abuse and NSSI may have the strongest support (Lang & Sharma-Patel, 2011). Research utilizing both retrospective self-reports (Glassman, Weierich, Hooley, Deliberto, & Nock, 2007) and substantiated reports from Child Protective Services (Shenk, Noll, & Cassarly, 2010) has established a link between childhood sexual abuse and NSSI among adolescents. However, not all studies have supported the relationship between sexual abuse and NSSI (i.e., Gratz & Chapman, 2007; Wachter, Murphy, Kennerley, & Wachter, 2009; Weismoore & Esposito-Smythers, 2010). Two meta-analyses have examined the relation between sexual abuse and NSSI (Klonsky & Moyer, 2008; Maniglio, 2011), each finding small to medium effect sizes for the association. However, both studies noted that sexual abuse was not related to NSSI alone. Together, research suggests that although sexual abuse is associated with NSSI, the path may be indirect or mediated by other variables.

An association between physical abuse and NSSI has also been found; however, the results are mixed (Lang & Sharma-Patel, 2011). A relation between childhood physical abuse and NSSI has been found among inpatients (Van der Kolk, Perry, & Herman, 1991), female undergraduates (Paivio & McCulloch, 2004), and women in a primary care setting (Wiederman, Sansone, & Sansone, 1999). However, a significant relationship between childhood physical abuse and NSSI was not found among community adolescents

(Glassman et al., 2007). It is possible that sample age influenced the results. Adolescents still living in an abusive environment may be less likely to report abuse, and younger adolescents may not yet have started engaging in NSSI. Additionally, differences in reporting periods and data collection strategies may have influenced the results.

Results for the association between emotional abuse and NSSI have also been mixed. Support for the relationship between exposure to childhood emotional abuse and NSSI was found among female undergraduates (Paivio & McCulloch, 2004), psychiatric outpatients (Wachter et al., 2009), and adolescents (Glassman et al., 2007). However, after statistically controlling for other forms of abuse and neglect, Wiederman et al. (1999) did not find support for the relation between emotional abuse and NSSI among women in a primary care setting. These findings suggest that the association between emotional abuse and NSSI may be confounded by the co-occurrence of other forms of abuse.

Similarly, support for the link between early life neglect and NSSI has been mixed (Lang & Sharma-Patel, 2011). Support for the relationship between general neglect (Shenk et al., 2010; Van der Kolk et al., 1991), physical neglect (Glassman et al., 2007; Paivio & McCulloch, 2004), emotional neglect (Gratz & Chapman, 2007; Paivio & McCulloch, 2004), and NSSI has been found, but other studies have yielded conflicting results (i.e., Glassman et al., 2007; Wachter et al., 2009; Weierich & Nock, 2008) . Further research on this topic is necessary.

*Family factors.* Several studies have investigated the role of family as a risk factor for NSSI. For example, exposure to family conflict may be a risk factor for NSSI, although this association may be mediated by difficulties in emotion regulation (Adrian et al., 2011). Families of adolescent psychiatric patients engaging in NSSI showed lower levels of positive affect, higher levels of negative affect, and lower levels of cohesiveness (Crowell et al., 2008), and inadequate parental directives were associated with increased risk for NSSI (Kirkcaldy, Brown, & Siefen, 2006). Further, among inpatient

adolescent males, the aversive impact of a new family member (e.g., a new step-parent or sibling), as well as increased number of siblings in the home, were associated with increased risk for NSSI (Kirkcaldy et al., 2006). Specific family characteristics may also increase risk for NSSI. This suggests that the overall family environment, including the interactions among family members and parenting style, may place an adolescent at risk for NSSI.

*Protective factors for NSSI*. Family cohesion and caregiver support have been identified as potential protective factors against NSSI (i.e., Klonsky & Glenn, 2009). Research suggests that cohesive family relationships and parental involvement may be protective against NSSI (Adrian et al., 2011; Kirkcaldy et al., 2006). Brausch and Gutierrez (2010) found that high school students with no history of self-injury reported higher levels of parental social support than those with a history of either NSSI alone or NSSI and a suicide attempt, suggesting that parental support may be protective against self-injury with and without suicidal intent. Research also suggests that family support may even mediate biological factors associated with NSSI. Although high serotonin levels were found to be protective against NSSI among adolescent psychiatric patients, the protection level was dependent upon the quality of the parent–adolescent interaction (Crowell et al., 2008). These studies suggest that family support and involvement may be an important protective factor against the development of NSSI, even in the presence of risk factors for the behavior.

## Social and Community Factors Influencing Risk and Resiliency

Although little research has investigated community factors influencing risk and resiliency for NSSI, there has been research investigating the role of social support in the development of the behavior.

*Risk factors for NSSI*. Several studies suggest that lack of social support may be a risk factor for the development of NSSI. Results regarding the association between peer factors and NSSI are mixed. In a prospective study examining community youth in seventh or eighth grade, peer problems at baseline were correlated with future NSSI behaviors, but they did not predict the onset of NSSI (Lundh, Wangby-Lundh, & Bjarehed, 2011). However, Hankin and Abela (2011) found that stressful life events, lack of social support, and negative social interactions predicted engagement in NSSI behaviors among community youth. Similarly, peer victimization may be specifically associated with engaging in NSSI for social reinforcement (Hilt, Cha, & Nolen-Hoeksema, 2008). Social factors may also be related to NSSI indirectly through emotion dysregulation. Adrian et al. (2011) reported that among inpatient female adolescents, peer relationship problems statistically predicted increased emotion dysregulation, which in turn predicted increased NSSI. Although additional research is necessary to clarify the association, lack of social support and negative interactions with peers may be important risk factors for NSSI.

*Protective factors for NSSI*. Social support has also been found to be protective against NSSI. In a prospective study examining risk and protective factors for NSSI among community adolescents, satisfaction with social support was the only protective factor for NSSI identified (Wichstrøm, 2009). Evidence for social support as a protective factor has also been found in cross-sectional studies. High school students without NSSI report higher levels of peer support than those who engage in NSSI (Brausch & Gutierrez, 2010), and positive school experience and social support were found to be protective against NSSI in a cross-sectional study of Chinese adolescents (Tang et al., 2011). Tang et al. (2011) found that social support and positive school experience moderated the association between parental abuse and NSSI, suggesting that social support may buffer the effects of other NSSI risk factors.

## Evidence-Based Treatment Interventions for NSSI

Although NSSI is associated with negative consequences and increases the risk of attempted suicide, no interventions have been developed to treat NSSI specifically. Complicating our assessment of effective interventions, a number of studies report DSH as an outcome measure. As DSH includes self-injurious behaviors both with and without suicidal intent, it is impossible to ascertain whether these different behaviors are responding to intervention in a similar manner, or if significant differences in the outcome variable are being driven primarily by one form of self-injurious behavior. Therefore, this section discusses those studies that specifically reported change in NSSI as an outcome variable.

*What works*. Dialectical behavior therapy (DBT), which incorporates cognitive-behavioral techniques and a focus on validation, acceptance, and emotion regulation, was developed to treat individuals with BPD. Treatment generally lasts for a minimum of 1 year and includes individual therapy, group therapy, telephone consultations for clients, and case consultations for psychotherapists (Linehan, 1993). As one of the few interventions that specifically targets self-injury with and without suicidal intent, DBT is often discussed regarding the treatment of NSSI. DBT has been modified specifically for use with adolescents (DBT-A; Miller, Rathus, & Linehan, 2007). DBT-A was modified from the original intervention by shortening the length of treatment, simplification of skills taught during the intervention, and inclusion of parents and family members in the intervention (Rathus & Miller, 2002). Research on DBT-A suggests that it is effective in reducing the occurrence of DSH and suicidal behaviors among adolescents (i.e., James, Taylor, Winmill, & Alfoadari, 2008; Katz, Cox, Gunasekara, & Miller, 2004; Rathus & Miller, 2002).

Few studies have reported on the efficacy of DBT in reducing NSSI specifically among adolescents. However, results of the studies that have been conducted are promising. Fleischhaker et al. (2011) adapted DBT-A for use with a German-speaking sample. Twelve adolescents with recent NSSI or suicidal behaviors and at least three symptoms of BPD received outpatient DBT-A for 16–24 weeks. Effect sizes for decrease in NSSI behaviors following treatment were large at 1-month and 1-year follow-up (Fleischhaker et al., 2011), providing evidence for the effectiveness of DBT-A in reducing NSSI behaviors specifically.

DBT-A has also been combined with music therapy. "Stop Cutting—Rock!" (Plener, Sukale, Ludolph, & Stegemann, 2010) consists of 12 two-hour group music therapy sessions with 20-min individual sessions of DBT-A. In addition, the treatment program offered three group sessions for parents. Plener et al. (2010) piloted this intervention with five self-injuring female adolescents. Four of the five participants reported no NSSI behaviors at the end of treatment; this gain was maintained at 2-month follow-up. Although the authors note that the intervention may not be appropriate for adolescents with severe psychopathology, it is a promising avenue for future research.

Although there is limited research on the efficacy of DBT in the treatment of NSSI among adolescents, DBT is still a promising intervention for the behavior for several reasons. First, additional research has supported the use of DBT in the treatment of DSH among adolescents. Second, research supports the use of DBT in reducing NSSI among adults (i.e., Bohus et al., 2004; Pistorello, Fruzzetti, MacLane, Gallop, & Iverson, 2012; Stanley, Brodsky, Nelson, & Dulit, 2007; van den Bosch, Koeter, Stijnen, Verheul, & van den Brink, 2005; Verheul et al., 2003). Further research on the efficacy of DBT in reducing NSSI in children and adolescents is necessary, but current research supports its use.

*What might work*. Despite the research in support of DBT and the use of cognitive-behavioral techniques in the treatment of NSSI (Muehlenkamp, 2006), few research studies have empirically investigated cognitive-behavioral therapy (CBT) as a treatment for NSSI specifically. However, researchers have discussed the application of CBT to DSH (i.e., Slee, Arensman, Garnefski, & Spinhoven, 2007), and

several studies have evaluated CBT in the treatment of self-injury with and without suicidal intent among adolescents. Taylor et al. (2011) developed a manualized CBT program called "Cutting Down." Twenty-five adolescents participated in the program, which consisted of 8–12 sessions of individual CBT following a treatment manual and an optional parent session. Rates of DSH were significantly lower at postintervention assessment; these gains were maintained at 3-month follow-up (Taylor et al., 2011). Of note, individuals who received CBT demonstrated improvements in decision-making abilities following treatment as measured by the Iowa Gambling Task; such improvements were not found for self-injuring adolescents who did not receive treatment (Oldershaw et al., 2012). Researchers have also investigated a group intervention that incorporates CBT, DBT, and group psychotherapy, but findings have been mixed. Although Wood, Trainor, Rothwell, Moore, and Harrington (2001) found that the risk of repeated DSH was less for adolescents receiving group therapy than those receiving treatment as usual, Hazell et al. (2009) did not find a decrease in DSH in a replication study. Similarly, Green et al. (2011) found that although adolescents receiving group therapy and routine care reported a decrease in DSH at follow-up, the improvement was not significantly greater than that of adolescents receiving routine care alone.

Manual-assisted cognitive therapy (MACT) is a 6-session cognitive-behavioral intervention that focuses on the functions of DSH, emotion regulation and problem-solving skills, and relapse prevention. Although it has not yet been investigated among adolescents, MACT has demonstrated mixed results for the decrease of DSH and NSSI frequency and severity among adults (Evans et al., 1999; Salkovskis, Atha, & Storer, 1990; Tyrer et al., 2003; Weinberg, Gunderson, Hennen, & Cutter, 2006). MACT may be a promising intervention for decreasing NSSI (Muehlenkamp, 2006), and it should be considered for further study.

NSSI has also been reported as an outcome variable in some large clinical trials for adolescents, although the treatment did not target NSSI or DSH specifically. The Adolescent Depression Antidepressant Psychotherapy Trial (ADAPT) compared the use of SSRIs alone to use of SSRIs plus CBT in the treatment of major depressive disorder. The authors reported a decrease in NSSI behaviors at posttreatment for both the SSRI and SSRI+CBT groups, but differences between the groups were not detected (Goodyer et al., 2007), suggesting that SSRIs and CBT may be effective in treating NSSI, even if NSSI is not the focus of therapy. Although the Treatment of SSRI-Resistant Depression in Adolescents (TORDIA) study reported DSH as an outcome, similar results were found between pharmacotherapy and the addition of CBT. Adolescents with major depressive disorder who had not responded to a course of SSRIs were randomized to receive a different SSRI, a different SSRI plus CBT, venlafaxine (a selective serotonin and noradrenergic reuptake inhibitor), or venlafaxine plus CBT. Researchers found no effects of treatment on NSSI in the study (Brent et al., 2009). However, history of NSSI at baseline was found to predict poorer response to treatment (Asarnow et al., 2009), and those who received CBT reported engaging in NSSI earlier in the study period than those who received medication alone (Brent et al., 2009).

Emotion regulation difficulties are associated with NSSI (i.e., Gratz, 2007) and have been shown to mediate changes in DSH during treatment (Slee, Spinhoven, Garnefski, & Arensman, 2008). Therefore, interventions that focus on emotion regulation may be particularly important in the treatment of NSSI. While emotion regulation is a significant component of DBT (Linehan, 1993), other interventions focused on improving emotion regulation skills are being developed. For example, Gratz and Gunderson (2006) developed a 14-week acceptance-based emotion regulation group intervention to decrease NSSI by targeting emotion dysregulation and emotional avoidance. Initial studies have supported the use of the intervention to decrease NSSI among women with BPD and subclinical BPD (Gratz & Gunderson, 2006; Gratz & Tull, 2011). Although this intervention has not yet been evaluated in adolescents or individuals without BPD, it is a promising treatment for further investigation.

*What doesn't work*. As research on the treatment of NSSI is limited, we do not yet know definitively what interventions, if any, do not work. However, one technique sometimes employed in the treatment of NSSI has been criticized by some NSSI experts. Replacement skills are often used in the treatment of NSSI (i.e., Walsh, 2006). The goal of replacement skills is to replace NSSI behaviors with a behavior that is acceptable and does not cause injury. However, some clinicians and clients use negative replacement behaviors, which are designed to resemble NSSI behaviors (i.e., drawing on the skin with a red marker, snapping a rubber band on the wrist). Although the use of negative replacement behaviors has not yet been empirically investigated, the use of these behaviors is not supported by many NSSI experts. If used at all, these behaviors should not be considered a long-term treatment option (Walsh, 2006), as they are not adaptive in addressing NSSI triggers, urges, and behaviors, and they do not allow for the natural reinforcement of more adaptive coping skills.

## Psychopharmacology and NSSI

Research on pharmacological interventions for NSSI is scarce. Few clinical trials have been published, and literature mostly comprises case studies using a variety of medication. Psychopharmacological research is limited because NSSI is not its own disorder, but rather a criterion of BPD, so NSSI is rarely used as a primary outcome measure (Plener, 2009). In addition, there is no clear understanding of the biological pathways associated with NSSI (Bloom & Holly, 2011). To the best of our knowledge, no clinical trials have focused on adolescent patients. Rather, much of the existing research focuses on patients with BPD.

Selective serotonin reuptake inhibitors (SSRIs) are perhaps the most empirically studied medications in the treatment of NSSI. Markovitz, Calabrese, Schulz, and Meltzer (1991) found that fluoxetine decreased NSSI frequency in a sample of 22 adults with major depressive disorder and either BPD or schizotypal personality disorder. A specific type of NSSI, skin picking, has been effectively treated in adults with fluoxetine (Bloch, Elliott, Thompson, & Koran, 2001; Simeon et al., 1997) and fluvoxamine (Arnold et al., 1999). Antidepressant medications, specifically SSRIs and SNRIs were evaluated in combination with CBT among adolescents. Medication alone was as effective as medication plus CBT in reducing NSSI in adolescents with major depressive disorder (Brent et al., 2009; Goodyer et al., 2007).

Empirical evidence for the use of other medications is limited. In one of the only studies of pharmacotherapy in adolescents with NSSI, ziprasidone, an atypical antipsychotic, was found to be more effective in reducing NSSI behaviors than another neuroleptic medication (Libal, Plener, Ludolph, & Fegert, 2005). As the endogenous opioid and monoamine pathways are implicated in NSSI (i.e., Sher & Stanley, 2008), opioid receptor antagonists have been evaluated in reducing self-injury. Naltrexone was specifically evaluated in a small sample of female psychiatric patients; it was effective in terminating NSSI in six of the seven participants (Roth, Ostroff, & Hoffman, 1996). Clonidine has been suggested as a possible intervention for acute NSSI urges and aversive feelings of tension, which are often antecedents for NSSI. Philipsen et al. (2004) found that clonidine reduced tension and the urge to self-injure immediately after its administration in a sample of patients with BPD. However, its effectiveness in reducing NSSI behaviors over a lengthier period of time is unknown. Although this literature provides a starting point for the pharmacological treatment of NSSI among adolescents, rigorous clinical trials are needed before recommendations can be made.

## The Prevention of NSSI

Prevention of NSSI is a burgeoning dimension of the developing field of psychological study of NSSI. While most of the scientific efforts at this point are focused on better understanding functions of the behavior and risk factors for and protective factors against NSSI, the serious negative

consequences of NSSI, including increased risk of attempted suicide, create a mandate to focus on treatment and prevention. Middle school and high school may be a critical time for such prevention efforts, as NSSI generally onsets between 12 and 14 years of age (Jacobson & Gould, 2007).

*What works*. Currently, no prevention programs for NSSI have been tried a minimum of three times successfully, establishing it as an empirically supported prevention program.

*What might work*. To date, only one prevention program has been implemented and tested for effectiveness in reducing and preventing NSSI in adolescents. Jacobs, Walsh, McDade, and Pigeon (2009) created the Signs of Self-Injury program (SOSI), a school-based prevention program for adolescents that aims to increase awareness about NSSI. This includes increased awareness of warning signs and symptoms, improvement of help-seeking behaviors and attitudes, and decrease in NSSI behaviors. The program is designed to be implemented by a school counselor or psychologist during one 50-min class period. This session includes introducing the topic of NSSI, showing video components of the program, and facilitating class discussion using an accompanying guide. As part of the program, students are given a self-assessment form to complete aimed at helping them to identify their risk for self-injury. In order to foster help-seeking behaviors and to facilitate immediate response to students, an index card is distributed to all students on which they mark one of two statements: "I need to talk to someone," or "I do not need to talk to someone." Those indicating that they need to talk to someone were contacted individually by the leader of the SOSI program within the school (Jacobs et al., 2009).

The feasibility and effectiveness of the SOSI program in five schools was tested by Muehlenkamp, Walsh, and McDade (2010). The program appears to be feasible, as all counselors who led the program reported that it was straightforward and easy to use. The program significantly increased accurate knowledge about NSSI among those who participated. In addition, the program was associated with significant changes in attitudes toward NSSI and intensions for help-seeking among students (Muehlenkamp et al., 2010). Although preliminary results are encouraging, enthusiasm may be attenuated by the literature on one-time programs (Durlak, 2003).

Although the SOSI program is the only NSSI prevention program to date, researchers may wish to build upon research on risk and protective factors. For example, protective factors may be an overlooked source of opportunity in prevention of NSSI. Wichstrøm (2009) found that satisfaction with social support uniquely protected against NSSI onset in adolescents. Programs focused on increasing social support may have a positive effect on NSSI behavior, as well as other important areas for adolescents. Future research should focus on the development and evaluation of prevention programs in order to help many adolescents avoid this high-risk behavior.

*What doesn't work*. At this point, research on NSSI prevention is limited, and no ineffective programs have been identified.

## Recommended Best Practice

The negative outcomes associated with NSSI, coupled with its alarming prevalence among adolescents, mandates its treatment. However, clinicians often lack familiarity and confidence when treating NSSI (Whitlock, Eells, Cummings, & Purington, 2009). NSSI is difficult to treat (i.e., Muehlenkamp, 2006; Zila & Kiselica, 2001), but it is important to know that individuals do respond to treatment (Nock, Teper, & Hollander, 2007). The following practices are recommended:

- Clinicians should regularly assess for NSSI behaviors. It is important to assess for NSSI in general rather than for a specific behavior (i.e., cutting), as research suggests that men and women may report different methods of NSSI (Andover et al., 2010).
- It is important to recognize that NSSI behaviors are distinct from suicidal behaviors. Understanding the intent of the behavior is

especially important in assessment, treatment, and developing a treatment alliance. However, NSSI is a risk factor for attempted suicide, so adolescents who engage in NSSI should be assessed for suicidal ideation and behaviors.

- Caution should be used when incorporating negative replacement behaviors (i.e., snapping a rubber band, drawing on the body with a red marker) into treatment. If used at all, these behaviors should be considered a transition to more adaptive replacement behavior and should only be used for a brief period.

- DBT has received the most empirical support for the treatment of NSSI in adolescents. Although research in adolescents is limited, cognitive interventions for NSSI are promising, especially those that include problem-solving skills training and address underlying automatic thoughts and core beliefs associated with the behavior. In addition, behavioral techniques, such as functional analyses and contingency management, are likely to be effective in reducing NSSI among adolescents.

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## Transition Services for Youth at Risk and with Current Mental Health Needs: A Developmental-Ecological Framework

### Introduction

The transition to legal and social adulthood involves not only newfound autonomy and opportunities, but also developmental challenges. This is especially the case for *transitioning youth with mental health needs* (TYMHN), defined here as late adolescents and early or "emerging" adults (Arnett, 2000) between the ages of 14 and 25 who are: (a) using services for mental health problems, and (b) experiencing transition-related difficulties. This chapter examines ways in which services and policies in the USA currently address developmental challenges of TYMHN.[1] A *developmental-ecological framework* is used to describe difficulties of TYMHN with transitions to productive adult roles in the community. In this approach, traceable as far back as the writings of Lewin (1929/1999), and more recently theorists such as Cicchetti and Toth (1997), success in development is inextricable from context, with individuals' health and maladjustment seen as explicable only with reference to a particular setting and broader societal environment. Consistent with this framework, services will be understood as emphasizing one or the other side of Lewin's "person plus environment" equation, including those emphasizing individual adaptation, or *positive youth developmental support*, and emphasizing responsive, nurturing environments, or *ecological support*.

### Transition: An Issue of Person–environment Fit

Although difficulties in transitioning may be especially pronounced among vulnerable groups of transitioning youth such as TYMHN, commentators are increasingly observing a more general disconnect between developmental needs

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[1] This chapter focuses on transition services in the USA. Few resources exist describing issues of TYMHN in other societies; however, cross-cultural and cross-national studies on the transition to adulthood may be useful in understanding specific issues of TYMHN outside of the USA (e.g., Schlegel & Barry, 1991; Shweder et al., 2006)

and context for youth entering adulthood (Côté, 2000; Smith, 2011), including mismatches of development and helping institutions such as mental health services (Davis & Vander Stoep, 1997). Mismatches of youth developmental needs and services are evident from the high rates of service discontinuation among TYMHN when these youth "age out" of child services (i.e., lose eligibility due to age; Davis, Green, & Hoffman, 2009) and are forced to enter adult services (e.g., Pottick, Bilder, Stoep, Warner, & Alvarez, 2008). Further such mismatches will be discussed in subsequent sections on risk and resilience and services. The rationale for use of the term *mental health needs* to refer to emotional and behavioral problems is that this term focuses on an ecological problem (i.e., lack of support matched to needs) rather than an individual problem (i.e., disorders).

## Incidence and Prevalence Rates

There are a number of challenges with estimating the number of TYMHN. Figures vary based on how MHN are identified; for example, whether the terms "serious mental health conditions" versus "severe mental illness" are employed, which have distinct definitions in state and federal statutes and policies (Davis et al., 2009). Figures also vary according to specific age ranges used, with some sources including adolescents and emerging adults, others limiting their scope to emerging adults 18 years of age or older (e.g., Osgood, Foster, Flanagan, & Ruth, 2005), and still others extending upper age limits of "transition" to 30, 35, or even older (Cõte, 2000; Smith, 2011). Using data from the *National Comorbidity Study-Replication* (Kessler, Chiu, Demler, & Walters, 2005) and other sources, a 2008 Government Accountability Office report estimated a point *prevalence* for serious mental illnesses of 6.5 % among 18 through 26 year olds (U.S. GAO, 2008). Of those with at least one SMI, 89 % were documented as being diagnosed with at least one comorbid condition, while 56 % were estimated to have four or more diagnoses. An estimated 32 % had a comorbid substance abuse or dependence diagnosis. More extensive

data are available on mental illnesses among younger adolescents and so will not be summarized here (e.g., Merikangas et al., 2010); however, for comparison, the 6.5 % rate produced by the GAO is similar to the rate of serious mental illnesses among 13–17 year olds identified by the *National Comorbidity Study—Adolescent Supplement* (Kessler et al., 2012). First *incidence* of a single or comorbid disorder during late adolescence and emerging adulthood is common, with roughly half of all lifetime cases of major mental illness beginning by age 14 and 75 % beginning by age 24 (Kessler et al., 2005). Because mental health needs are often chronic, the years of transition may be the last opportunity in most cases to prevent incidence of enduring chronic or recurring behavioral problems (Hulvershorn, Erickson, & Chambers, 2010).

Along with their psychiatric diagnoses, TYMHN frequently have various other psychosocial adjustment problems, including challenges in attaining developmental milestones such as completing their educations and attaining rewarding employment or careers (Masten, Obradović, & Burt, 2006). TYMHN also frequently experience psychosocial "snares," life events that interfere with achieving developmental tasks (Moffitt, 1993), such as early or unplanned parenting or involvement in the criminal justice system (Newman, Wagner, Cameto, Knokey, & Shaver, 2010). Data from the *National Longitudinal Transition Study—2* (Newman et al., 2010) indicate that after high school graduation, less than half of TYMHN are employed. Postsecondary educational participation is also low, with only about 10 % of TYMHN enrolled in education or training 1–4 years post-high school (Newman et al., 2010).

## Biological/Genetic Factors

Discussion of specific genetic or biological determinants for mental health needs in the transition to adulthood is beyond the scope of this review; however, a variety of developmental models stress the role of gene–environment interactions in determining adjustment, and these are of interest as they highlight opportunities for prevention and early intervention (O'Connell, Boat, & Warner,

2009). The role of these increases over time, especially those involving individuals' own selection of environments and evoking of environmental responses, or *active gene environment interaction* and *evocative gene-environment interaction* (Moffitt, Caspi, & Rutter, 2006), including *cascade* and *overload* theories.

*Cascade theories* suggest that such interactions may initiate and perpetuate "vicious" or "virtuous" cycles, in which genetic predispositions (e.g., difficult temperament) evoke responses from the environment (e.g., harsh or inconsistent discipline, social exclusion), in turn further shaping behavior (Masten & Coatsworth, 1998). During the transition to adulthood, such cascades may either precipitate MHN or further exacerbate existing MHN (Masten et al., 2005).

*Overload* theories have been advanced to explain the elevated incidence of certain emotional and behavioral disorders during the transition to adulthood (Kloep & Hendry, 2011). These theories hold that increases in incidence of disorders during the transition to adulthood are due to the combination of transition-related stressors with latent biological risks such as genetic propensities, prenatal or perinatal injury, and early trauma (Schulenberg & Maggs, 2002). These stressors include problems attaining or adjusting to employment, maladjustment to postsecondary education or training settings, or stress related to transitioning from co-residence with caregivers to independent living (van Os, Linscott, Myin-Germeys, Delespaul, & Krabbendam, 2009). Once they have emerged, MHN may further compound transition-related stress, by interfering with functioning in key developmental contexts (e.g., school) or exposing youth and family to difficulties navigating between child and adult service systems (Davis, 2003).

## Individual Factors Influencing Risk and Resilience

Specific types of mental health needs often share risk and protective factors (e.g., Ostaszewski & Zimmerman, 2006). These shared factors help to explain why young people who have one type of need often develop others as well (Osgood,

Johnston, O'Malley, & Bachman, 1988), and why lifespan research often shows greater continuity in *any* psychopathology than for specific MHN (e.g., Robins & Regier, 1991). Thus, risk and protective factors may help us to understand the emergence of needs generally, but often lack usefulness in helping us to predict whether one or another type of need emerges. The generality of risk and protective factors and their associated processes has helped prompt a paradigm shift in mental health interventions, such that many now focus more on general adjustment and well-being of youth, or *positive youth development*, rather than factors contributing to particular disorders (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2002; O'Connell et al., 2009). In following sections, then, we will place little emphasis on how specific disorders create difficulties for transition, though some attention will be paid to problematic risk behaviors as these may be especially influential in determining long-term transition outcomes (Haber, Clark, & Parenteau, 2009). Instead, we will focus on how MHNs generally and associated risks may create difficulties in the transition to adulthood.

## Individual Risk

The most commonly cited individual risks for problems in transition can be grouped into two categories: (1) risks related to the personal characteristics; and (2) the accumulated stressful life events experienced by a given individual.[2] *Personal characteristics* of youth with MHN frequently cited as risks include impulsivity, difficulties with planning, social skills deficits, anxiety, low or labile mood, positive attitudes toward risk or deviant behavior, poor engagement with protective settings (e.g., school, church), and weaknesses in problem solving and interpersonal skills (Hawkins, Catalano, & Miller, 1992; Masten et al., 2005). Given the fact that most of these characteristics can be symptoms of disorders, one perspective on these is that they constitute "subclinical" levels of disorders (i.e., problems

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[2] That, as opposed to specific types of stressful life events of stressful environments, would tend to be seen as family, social, or community risks.

consistent with disorders, but reaching thresholds for diagnosis such as causing clinical distress; Fava, 1999). These could be prodromal in nature (i.e., associated with the initial emergence of a disorder), or symptoms of previously experienced disorder that is not completely remitted ("residual symptoms"; Fava, 1999; Rutter et al., 1997). Another possibility (consistent with overload theories) is that these characteristics, although within the normative spectrum, can become more pronounced (and thus problematic) in the presence of other risk factors (Schulenberg & Maggs, 2002).

The role played of *stressful life events* appears to be especially prominent in etiology of depression (Brown, Bifulco, Harris, & Bridge, 1986). These effects of stressful life events can be associated with the coping with the events themselves, but may also be associated with the lifestyle changes they precipitate. For example, research indicates that much of the negative long-term impact of early or unplanned childbearing on women may be due to the barriers raising young children may create for educational completion (Spriggs & Halpern, 2008).

### Individual Resilience

Certain characteristics such as general intellectual functioning or temperamental characteristics are consistently associated with better adjustment in a broad range of environments (Masten, 2001). Other factors appear to be especially important in late childhood and adolescence, including high academic self-esteem and efficacy, scholastic abilities and achievements, interpersonal skills (especially in peer relationships), endorsement of prosocial values (e.g., Luthar, 2006; Masten et al., 2006), and connectedness (e.g., sense of belonging) to protective settings (Greenwald, Pearson, Beery, & Cheadle, 2006). Literature on *transition-specific* resources (i.e., resources uniquely impacting the transition to adulthood), is limited, but growing (Masten et al., 2006). Included among these are planning and problem-solving competencies, internal locus of control, and emotional regulation (Luthar, 2006). Recent research has indicated three important properties of these: (1) they are predictive of health beyond the effects of childhood and adolescent resources (e.g., intellec-

tual functioning, academic self-efficacy); (2) they are associated with resilience specifically (i.e., health under conditions of adversity), rather than merely being health promoting in general; (3) they are associated with the *emergence* of resilience (i.e., resilience among youth *not* resilient in prior developmental periods; Masten et al., 2004). The last of these findings—that these "transition-specific" resources precede health improvements (and thus are more likely to be causally related)—is especially important for informing interventions of TYMHN.

## Family Factors Influencing Risk and Resilience

### Family Risk Factors

Increased family relationship strain and conflict appears to be a part of normative development in adolescence as youth begin to assert autonomy from parents, especially in contemporary individualistic societies (Arnett, 2004). Among TYMHN and other at-risk groups, this normative strain and conflict may be exacerbated due to complications related to youths' additional needs for support (Haber, Cook, & Kilmer, 2012). In addition, other factors unique to these groups may also have an influence (Jivanjee, Kruzich, & Gordon, 2009).

*"Normative" developmental strain.* Open family conflict usually diminishes in later adolescence and emerging adulthood, especially when youth leave the family household to live independently (Kins, Beyers, Soenens, & Vansteenkiste, 2009). However, families may still have difficulty adjusting to greater normative levels of independence experienced by young adults in this and other areas such as their schedules (e.g., curfews), substance use choices, and sexual behavior, particularly if youth remain in or return to the household (White, 2002). Reliance from childhood families also decreases, though often in an uneven manner, with frequent reversals (e.g., returning home after departing for college; Goldscheider & Goldscheider, 1999). While families usually continue to provide some support, the role of peers and later, romantic partners

becomes more central (Elder, 1984). These shifts have collectively been referred to as *recentering* (Tanner, 2006) and suggested as a guide for supporting youth in their important relationships. Specifically, providers may wish to be accommodating of the fluidity of transition-age youths' social networks and the value they place on peers' advice and emotional support relative to support from adults (Clark & Hart, 2009; Tanner, 2010).

*Added developmental strain among TYMHN.* Sources of strain discussed above may be especially severe in families of TYMHN (Haber et al., 2012). First, TYMHN often need more support for a longer period of time than their peers, due to the adverse impact of their MHN on their own and their families' functioning, including their difficulties in achieving developmental tasks (e.g., transitioning from school to work). TYMHN may also have fewer opportunities to leave the household at the outset of emerging adulthood, as often is the case for populations of youth with fewer disadvantages, in part because of their poor educational achievement (which in turn, would limit college prospects; Newman et al., 2010). As noted in the prior section, leaving the family home for the first time can provide distance and perspective that helps to reduce conflict between parents and transitioning youth; thus, this important developmental opportunity may be delayed (or missed) for many TYMHN and youth at risk.

*Unique family stresses.* Other factors may also exacerbate family problems among TYMHN and youth at risk. Although they may often experience fewer and delayed *planned transitions* to independent living (e.g., living in a dormitory at college), *residential disruptions* among TYMHN are more likely (e.g., running away, out of home placement, or placement in juvenile facilities; Davis & Konyagi, 2005). Many transitioning youth become homeless as a result, and even if youth return, these episodes greatly increase strain on family relationships (Paradise & Cauce, 2002). Parents also report stress related to service systems, especially following transitions from child to adult mental health services, including poor service availability or lack of responsiveness of services to developmental needs (Jivanjee et al., 2009).

Many families of youth with MHN, especially those in public systems, are also in poverty, and socioeconomic status is negatively associated with commitments of tangible support to youth from families, including money and time (Schoeni & Ross, 2005). Family members of TYMHN have higher rates of mental health needs themselves, and extensive research describes influences of family psychopathology on child and adolescent problems, often through parenting (e.g., positive parenting such as warmth or negative parenting such as harshness and inconsistency; Berg-Nielsen, Vikan, & Dahl, 2002). Youth with MHN are more likely to experience physical or sexual abuse from family members (Lynch & Cicchetti, 1998) and unstable and "mixed" families more common (Davies & Cummings, 2006). Thus, families of these youth are often not in a position to provide optimal support to TYMHN and may need their own assistance (Kilmer, Cook, & Munsell, 2010). Note that gender appears to moderate some of these types of effects, such that they are more severe for female youth in some cases (e.g., effects of abuse; Widom & White, 1997) and males in others (Hetherington, 1993).

*Adult families.* Due to occurring earlier and "out of sequence," childbearing among TYMHN often interferes with educational completion and career advancement (Vander Stoep et al., 2000). In addition, TYMHN may be poorly prepared to parent (Blanch, Nicholson, & Purcell, 1994), and are more frequently single than their peers (Wagner, 1995). These issues may substantially contribute to their stress and to problems for the next generation.

### Family-Based Resilience

*Parent resources.* Research on how family factors contribute to resilience of transitioning youth is limited; however, it is clear that families provide support well into young adulthood and that lack of this support would harm prospects for success-

ful transition (Schoeni & Ross, 2005). Some research on students with disabilities (including TYMHN) shows strong associations between family involvement in school and more positive transition outcomes (e.g., Fourqurean, Meisgeier, Swank, & Williams, 1991), though there is some indication that these effects may be weaker or inconsistent among TYMHN (LaPorte, Heeney, & Haber, 2013). Parents may provide tangible support (especially housing), advocacy with service systems (Jivanjee et al., 2009), or guidance that helps youth avoid risk behaviors (Beam, Gil-Rivas, Greenberger, & Chen, 2002; Mounts & Steinberg, 1995). In addition to parents, siblings may provide a variety of supports to one another over the life course, and where support from parents is compromised this type of support may be especially significant. For example, the strong attachments of youth in foster care to biological siblings are well documented (Shlonsky, Bellamy, Elkins, & Ashare, 2005). It would be expected that siblings could provide helpful support for coping with transition-related challenges, especially given that they may be experiencing similar types of barriers to youth themselves.

*Adult families as sources of resilience.* Committed romantic relationships have been shown to serve as "turning points" for many young adults with problem behavior such as antisocial behavior conduct and substance use (Laub, Nagin, & Sampson, 1998). Although often framed as a risk factor for poor transition (as discussed in the prior section), children are sometimes seen as a resource by vulnerable young parents (e.g., Banyard, 1995). Given the high prevalence of early parenting among TYMHN, studies are clearly needed of where and how parenting is a risk or even a resilience factor in this population. In the context of early or unplanned parenting by the youth themselves, support from family of origin is likely to be an extremely important resource (Gordon, Chase-Lansdale, & Brooks-Gunn, 2004). However, involvement of extended family can also be sometimes associated with parent stress, especially if extended family members interfere with

parents' development of a sense of mastery as parents (Greenfield, 2011).

## Social and Community Factors Influencing Risk and Resilience

### Social and Community Risk

Social and community risk factors may impact successfulness of transition through *direct effects* such as effects of *community violence*, or *indirect effects* that operate by limiting availability or influence of resilience factors. Much research on risks related to community level factors focuses on community violence, broadly defined as individuals' reported exposure to violence outside of their homes (Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009). In communities with higher levels of violence, adolescents can be impacted by being influenced by peers to participate in perpetration (Beam et al., 2002), through victimization by violence, or through decreased sense of safety (Fowler et al., 2009). Indirect effects include those of neighborhood level indicators (e.g., lower aggregate socioeconomic status, and higher residential mobility, crime, community violence, and disorder), which can impact transition by reducing availability of natural supports (e.g., friends, families, teachers, coaches, clergy, other mentors; Leventhal & Brooks-Gunn, 2000; Wickrama & Noh, 2010) or other neighborhood resources, such as extracurricular activities and youth development programs (Furstenberg, Cook, Eccles, Elder, & Sameroff, 1999; Sampson, Raudenbush, & Earls, 1997). In some cases, these neighborhood risk factors may reduce the protectiveness of those supports or resources that are available (e.g., mentoring resources; DuBois & Silverthorn, 2005).

### Social and Community Resilience

The literature on social and community level resilience in the transition to adulthood is limited; however, some insights regarding possible resilience factors or processes can be garnered from research on other phases of the lifespan (e.g., Leventhal & Brooks-Gunn, 2000; Sampson et al.,

1997). For developmental ecological interventions to support transition, processes through which transitioning youth might arrange their environments to be more nurturing of their own development are of particular interest. TYMHNs who display resilience tend to be those who best learn to mobilize social and community resources (Masten et al., 2004; Werner & Smith, 1992). Two similar frameworks for understanding this process are considered in this context, one relatively more developmental in its orientation–*recentering*— and the other—*turning points*—more ecological. *Recentering* provides opportunities for TYMHN and at-risk youth to replace problematic supports (e.g., abusive or dysfunctional families, stigmatizing teachers) with nurturing ones (Tanner, 2006). Transitioning youth may similarly have increased abilities to place themselves in *environments* that are a better fit (e.g., education or work contexts matched to their interests, communities with greater opportunities and fewer hazards; Schulenberg & Zarrett, 2006). The literature on *turning points* has shown that commitment to adult roles, particularly employment, as well as committed relationships with prosocial partners decreases crime and other risk behaviors among at-risk youth (Sampson & Laub, 1993), while promoting adaptive community functioning (Sampson & Laub, 1993; Werner & Smith, 1992). This is seen as being due to the rewarding nature of these commitments as well as their tendencies to reduce opportunities to engage in problematic behavior (Tanner, 2006). The recognition that TYMHN benefit from commitment to intrinsically rewarding roles informs many current best practices for working with TYMHN.

## Evidence-Based Treatment Interventions in Transition Services

### What Works
Despite decades of attention to issues related to TYMHN (e.g., Clark, Unger, & Stewart, 1993; Stroul & Friedman, 1986), evidence for service approaches is surprisingly limited (Davis, Koroloff, & Ellison, 2012). Thus, there are at present no models for TYMHN that have been demonstrated

as effective in rigorous designs such as randomized controlled trials (RCTs), with the exception of a few, small pilot projects (e.g., Powers et al., 2012). Further, no studies have included long term (e.g., over 2 years) of follow-up, an essential feature given the dynamic nature of the developmental period (Armstrong, Dedrick, & Greenbaum, 2003). Despite these weaknesses, some support is available for existing intervention approaches for TYMHN and populations facing similar populations (e.g., youth with disabilities), including correlational or quasi-experimental designs (Test et al., 2009), well-designed case studies and trials with short-term follow-up (Test et al., 2009), and qualitative and mixed methods studies (Clark, Koroloff, Geller, & Sondheimer, 2008; Davis, Koroloff, & Ellison, 2012). Thus, existing data are not definitive, but allow some tentative conclusions to be reached regarding "what might work" that should guide selection of interventions (Clark & Hart, 2009). In this literature, consistent with research on "common" or "unified" intervention approaches (e.g., Barlow, Allen, & Choate, 2004), it is recognized that rather than developing many "discrete" models for each specific type of disorder, *common strategies* can be identified that address a variety of needs (Davis, Koroloff, & Ellison, 2012; Walker et al., 2013). This common strategies approach will be used in the sections that follow, though specific interventions will be described in some instances for illustration.

### What Might Work
Consistent with the developmental ecological approach, we will characterize interventions in two broad categories corresponding to individual and setting levels of analysis: (1) *positive youth development* (PYD) interventions, focusing on improving adaptation of TYMHN to developmental tasks, in so doing helping to compensate for MHN (Walker & Gowen, 2011); and (2) *ecological support* interventions focusing on creating more nurturing environments and better opportunities, through coordination of *individual-level systems* (i.e., their families and informal and formal social networks) and *community-level systems* (networks of agencies, institutions, and stakehold-

ers providing services and supports to the community; Haber, Karpur, Deschênes, & Clark, 2008; Hoffman, Heflinger, Athay, & Davis, 2009).

*Positive Youth Development Strategies.* The *positive youth development* (PYD) movement is part of a broader shift in intervention research over the last several decades from treatment strategies, which focus on pathology and deficits, to prevention and promotion strategies that emphasize well-being and thriving (Biglan, Flay, Embry, & Sandler, 2012; Catalano et al., 2002; O'Connell et al., 2009). A general conclusion in this literature is that PYD interventions are more effective to the extent that they focus on *developmental assets* for the population targeted, that is, personal or contextual resources needed for youth to complete developmental tasks (Lerner, 2003). Recently, efforts have been made to comprehensively describe PYD assets and asset enhancing strategies for supporting transition, including attempts to summarize asset-based strategies most associated with resilience in at-risk or vulnerable populations (Masten, 2006; O'Connell et al., 2009) and summaries of asset-based strategies for working with TYMHN (Walker et al., 2013). In synthesizing these, we categorized strategies by developmental assets shown to be especially crucial to the transition to adulthood, including strategies focusing on: (1) *positive identity development,* (2) *self-regulation and planning;* (3) *coping skills;* (4) *developing supportive relationships and community connections.*[3] Within this framework, we will discuss several commonly used strategies targeting these four types of assets, including *futures planning, in vivo skills training, resource development,* and *self-advocacy and leadership training.* Finally, two widely used interventions combining these specific strategies are briefly described, including the *Transition to Independence Process,* and the

*Rehabilitation for Empowerment, Natural Supports, Education, & Work* (RENEW) model.

*Positive identity development.* This approach entails cultivating a positive sense of self and purpose, and often references well established concepts from motivational, cognitive, and behavioral literatures, including self-determination, self-efficacy, and empowerment theories (Walker & Gowen, 2011). Many models for TYMHN particularly emphasize *self-determination* (Carter, Lane, Crnobori, Bruhn, & Oakes, 2011; Haber, Malloy, Burgess, LaPorte, & Patry, 2013; Walker & Gowen, 2011), in part due to some pioneering work in this area with youth with developmental disabilities done by Wehmeyer and associates (2003). *Self-determination* has been defined by this group and others (e.g., Ryan & Deci, 2000) as an individual's capacity to direct their behavior based on internally held values, rather than adults in authority such as caregivers, teachers, and employers (Wehmeyer et al., 2003). Transition services foster self-determination by helping youth to become aware of their strengths, interests, and life aspiration, often prior to or as part of futures planning (Hagner et al., 2012; Malloy, Drake, Cloutier, & Couture, 2011). In cooperation with a *transition facilitator,* an intensive case manager focusing on transition issues with the youth (Clark, 2004; Malloy et al., 2011) there is typically an exploration of the youth's history, designed to highlight strengths, often through reframing of problematic behaviors as attempts to cope, demonstrations of caring for self and others, rational responses to difficult situations, etc. (Walker et al., 2013).

*Self-regulation and planning.* Two specific, but closely related objectives in this domain are helping youth to: (1) *develop and implement plans* toward long-term goals (futures plans), (2) *regulate short-term behavior* so that it better supports these plans (Clark & Hart, 2009; Walker et al., 2013; Walker & Gowen, 2011). Research suggests these two activities are closely intertwined, as individuals who are more future oriented and optimistic tend to regulate behavior more effectively, and those who more successful regulate short-term behavior tend to be more successful in achieving goals (Bandura, 1991). To help youth envision long-term goals and

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[3] In doing so, we followed the example of a recent review by Walker and Gowen (2011) as well as a model proposed by this group in recent "State of the Science" conference proceedings (Walker et al., 2013). Our categories resemble those proposed in these documents; changes were made to better align categories recent literature on assets for the transition to adulthood and the interventions discussed by the chapter.

develop scaffolds, interventions use developmentally appropriate, well-structured planning processes that engage youth in goal setting aligned with their unique interests and strengths, and then help youth identify exactly how these could be achieved (e.g., by breaking them into manageable steps, identify activities toward goals, needed resources, barriers, etc.; Walker & Gowen, 2011; Clark & Hart, 2009). A variety of approaches exist for this, often employed in combination with positive identity development techniques (Malloy et al., 2011; Vandercook, York, & Forrest, 1989). Cognitive-behavioral techniques are used to assist youth in regulating short-term emotions and behavior that could interfere with goal achievement, including impulsive responses to emotionally charged situations (e.g., interpersonal conflict), urges, and potentially harmful or *risk behavior* such as substance abuse (Haber et al., 2009). In most cases, these strategies focus on helping youth better integrate "hot" and "cool" cognitive emotional systems (i.e., drives and inhibitory controls; Metcalfe & Mischel, 1999) using strategies such as cueing, problem solving, motivational interviewing, or mindfulness (Davis, Lidz, Fortuna, Fisher, & Mistler, 2012; Haber et al., 2009; Habib, Labruna, & Newman, 2013).

*Example intervention: Transition to Independence Process* (*TIP*). Some interventions combine a variety of specific strategies to address identity development, planning, and self-regulation simultaneously. For example, in the Transition to Independence Process (Clark, 2004), services begin with *Strengths Discovery* (Vandenberg & Grealish, 1996) to identify personal strengths and resources, followed by futures planning to identify long-term goals, scaffolds, and measures of progress toward these (Clark, 2004; Vandercook et al., 1989). As work proceeds, TIP-intensive facilitators employ a variety of techniques to assist youth in deploying and further developing self-regulation capacities in service of goals, including *Rationales* (cues explicitly connecting behavior to consequences and a specific structured problem-solving process (Clark, 2004; Borck & Fawcett, 1982); and a motivational

interviewing based harm reduction technique, *Prevention Planning* (Haber et al., 2009).

*Developing coping skills.* Coping skills that are targets for transition services include: (1) skills related to acquiring adult roles (e.g., employability and independent living skills); (2) skills for managing mental health needs; (3) interpersonal skills needed to build and mobilize social support networks, such as skills for requesting support, or *self-advocacy*). Most programs for TYMHN facilitate skills acquisition related to assuming adult roles in employment, education, and independent living (Walker & Gowen, 2011). These tend to take the form of a curriculum using "hands on" or in vivo *teaching* modalities using practice in relevant settings (e.g., a university campus, benefits office, or place of employment), often delivered by an entry level or paraprofessional (e.g., Henggeler, Schoenwald, Rowland, & Cunningham, 2002; Powers et al., 2012). Coping skills approaches borrow from skills training methods developed for students with disabilities (Carter et al., 2011; Test, Fowler et al., 2009) and youth facing socioeconomic disadvantages (Hadley, Mbwana, & Hair, 2010). A variety of strategies in coping skills specifically focusing on management of mental health needs have been developed for TYMHN, often from approaches initially pioneered for other populations, such as *recovery planning* to help youth identify personal strategies for maintaining their emotional and behavioral health, avoiding crises, and managing these where they occur (e.g., Wellness Recovery Action Planning [WRAP]; Cook et al., 2012) and *self-advocacy training*, which helps youth learn to leverage social resources to achieve goals by better articulating needs and knowing when and how to ask for help from supportive adults (Carter et al., 2011; Walker & Gowen, 2011).

*Developing supportive relationships and connections to the community.* PYD aids in the development of relationships between the youth, natural supports, and professionals, as these buttress other types of positive development. Particularly for populations of youth who often facing significant, multiple disadvantages such as TYMHN, ample *instrumental supports*

provided through such relationships (e.g., *tangible support,* such as money, or *informational support* such as guidance regarding school and career programs; Barrera, Sandler, & Ramsey, 1981) are crucial to their successful transition and achievement of individualized goals (Galambos & Kotylak, 2012; Samuels, 2009; Schoeni & Ross, 2005).

A supportive one-on-one relationship with a transition facilitator appears to be a core ingredient of many approaches to transition services, especially in initially engaging youth in services, as it is a type of relationship TYMHN find less threatening than relationships focused on problems (therapists) or adult authorities who may have agendas other than serving the individual youth (e.g., teachers or school administrators, Clark & Hart, 2009). The facilitator and youth then engage in *resource development*, working together to build other supportive relationships (Walker et al., 2013), by: (1) describing positive aspects of personal connections that have grown problematic or potential relationship connections yet to be discovered; (2) having identified these opportunities, expanding the circle of formal and informal support through meetings supported by the facilitator (connections to "necessary supports"; Clark, 2004). Beyond cultivating positive personal relationships, resource development can also include identifying existing or potential connections to positive roles in the community (Clark & Hart, 2009; Walker et al., 2013; Walker & Gowen, 2011). Part of this process can also involve identifying positive aspects of youths' cultural identity with which youth can reconnect with or strengthen (e.g., Gowen, Bandurraga, Jivanjee, Cross, & Friesen, 2012). Other methods identified to help improve inclusion of TYMHN in communities include trainings in constructively sharing personal history (Lulow & Federation of Families for Children's Mental Health, 2012) or serving as a peer mentor (Galasso et al., 2009), efforts to developmentally tailor recovery communities such as clubhouses (McKay et al., 2012) and facilitating leadership activities including advocacy at local and state levels (Delman, 2012).

*Ecological Support Strategies.* Many interventions for TYMHN focus on changing systems, including widely used interventions using that *system of care* principles (Stroul & Friedman, 1986) or wraparound approaches (Vandenberg & Grealish, 1996) such as RENEW and TIP, and federally funded demonstrations of community-wide "transition systems" or "transition systems of care" (Haber et al., 2008). These SOC-based interventions and community demonstrations engage in both *individual-level* systems change (i.e., changing systems immediately connected to TYMHN, including their families and their formal and informal support networks) and the *community-level* systems change (i.e., relevant service systems for TYMHN and their stakeholders and building connections between these and other institutions).

*Individual-level systems change: Wraparound Teams. Wraparound teams* are the "practice model" for SOCs; in other words, the means through which SOCs' principles and practices are implemented at the individual level (Kilmer et al., 2010). In standard wraparound, teams are comprised of the family, the family's service providers, and nonprofessionals, or *natural supports* (e.g., extended family members, neighbors, teachers, sports coaches), which the family as a whole (minimally, youth and parent, preferably others as well) selects to be involved in their team. In essence, these team members "wraparound" the child and family to provide support in implementing the family's service plan.

Although wraparound has been recognized as a best practice for TYMHN (Cavanaugh, Goldman, Friesen, Bender, & Le, 2009), recent research suggests the possibility that the approach may need to be adapted, especially when working with older transition-age youth (e.g., 18 years of age or older; Haber et al., 2013). Some (e.g., Clark & Hart, 2009; Haber et al., 2013) have raised concerns that the unique challenges faced by transition-age youth such as increasing levels of conflict and strain could disrupt processes of wraparound youth and family teams (see *Family Risk* section). Findings on whether quality of group process on wraparound

teams differs by age is mixed, with some studies indicating that processes are worse (i.e., less cohesive teams; Haber et al., 2012) and others that they are similar, especially in the context of high quality implementation (Walker, Pullmann, Moser, & Burns, 2012; Bruns, Burchard, Suter, Leverentz-Brady, and Force (2004). Adaptations of wraparound could help to address possible variability in results with older youth by making the practice more developmentally appropriate for TYMHN (Haber et al., 2013). Recently proposed guidelines (Haber et al., 2013) include :(1) focusing on transition-related outcomes (e.g., employment); (2) developing close with specific types of services that address these areas in a developmentally appropriate way (e.g., *individualized school-to-career services* such as internships, apprenticeships, mentoring, and job shadowing); (3) supporting youth voice on wraparound teams through completing plans with youth prior to meetings (Malloy et al., 2011) and/or through skills trainings in self-advocacy and team participation skills (e.g., the *Achieve My Plan* curriculum; Walker et al., 2012).

*Example Intervention: Rehabilitation for Empowerment, Natural Supports, Education, and Work* ([RENEW]; Malloy et al., 2011). The RENEW model has been framed as a developmentally appropriate wraparound intervention for TYMHN (Eber, Malloy, Rose, & Flamini, 2013; Haber et al., 2013). RENEW programs work with youth to establish futures plans prior to convening wraparound teams. Youth then select members for their teams and are mentored in self-advocacy and team participation skills. When teams meet, the primary focus is on sharing of previously developed futures plan and brainstorming regarding plans' implementation (Malloy et al., 2011). Youth, parent, and specialist surveys as well as observations can be used to measure fidelity according to a structured protocol (Haber, Malloy, Burgin, & Cormier, 2011). Recent findings showed RENEW meetings implemented with fidelity compared favorably to conventional wraparound teams, with higher youth satisfaction with their involvement in

service planning (Malloy, Haber, & Cormier, 2012). Further, contrary to contentions that youth eschew participation on teams with groups of adults (Clark & Hart, 2009), youth with broad team participation (e.g., inclusion of mental health professionals) are more satisfied with services than those lacking such participation (LaPorte, Haber, & Malloy, 2013).

*Community-level systems change. Service coordination.* Coordination in transition services addresses both *inter-sectoral coordination* among various service sectors (e.g., mental health, child welfare, juvenile justice) and *intra-sectoral coordination* between adult and child systems (Davis, 2003). Structural barriers in public service systems such as separate funding and referral systems, eligibility requirements, and lack of common data sharing agreements or systems often create problems for TYMHN, such that they may not be able to access services in one system if initially served in another (Davis & Konyagi, 2005). Even where access occurs, coordination may be poor, resulting in duplicated services, service gaps, or inappropriate services (Davis et al., 2009). Findings of research on multi-sectoral initiatives to address these issues have been encouraging, with correlational evidence indicating improved collaboration among providers following implementation (Davis, Koroloff, & Johnsen, 2012) and improved functioning among youth participating in such initiatives (e.g., Haber et al., 2008). Efforts are underway to rigorously test community level coordination interventions in RCTs (Povenmire-Kirk et al., in press).

*Coordination between service and other sectors.* Aside from their difficulties accessing appropriate services, there is increasing recognition that connecting to essential developmental resources in communities, especially to postsecondary education or employment opportunities, has become increasingly challenging for TYMHN other vulnerable populations of transitioning youth (Osgood et al., 2005). For example, although rates of postsecondary educational access disparities decreased in recent decades, gaps in persistence have widened (Brock, 2010).

In this context, improving outcomes of TYMHN might be expected to be increasingly difficult, regardless of the availability and effectiveness of specific interventions and programs. To address these issues, close collaboration may be needed among service providers such as mental health agencies, workforce development programs, and others in a position to provide competitive employment or volunteer opportunities, including private sector employers and community organizations (Shipley, McCoy, Simmons, & Harden, 2010). There are a variety of descriptions available of demonstration projects or initiatives to promote better employment outcomes for TYMHNs or youth with other disabilities involving private sector employers (e.g., Davis, Jivanjee, & Koroloff, 2010; Luecking & Fabian, 2000), employer networks or collaboratives (U.S. Department of Labor, n.d.), or state level public private partnerships (Martinez, 2013). Approaches for cultivating a broader range of developmental assets at the community level may also be useful. Although this chapter has made a distinction between PYD and ecological support due to the individual level focus of current literature on PYD with TYMHN, there is a strong tradition of efforts to improve development assets at the community level in the PYD literature as a whole (Catalano et al., 2002); this approach is beginning to be applied with transition-age youth (O'Connell et al., 2009).

## What Doesn't Work

The literature on transitional services is insufficiently developed to address the issue of "what doesn't work" confidently; however, there is evidence that existing child and adult service systems are not equipped to meet needs of TYMHN in a developmentally appropriate manner (Davis & Koroloff, 2006; U.S. GAO, 2008). Further, evidence indicates that intra- and inter-sectoral siloing (discussed in the prior section) hurts TYMHN in a variety of ways (Davis et al., 2009).

*Developmentally inappropriate services*. Services in adult systems have been found to be both unappealing and potentially counterproductive for youth (Hoffman et al., 2009). Some problems in serving youth in either child or adult services may relate to organizational cultures of these systems. For example, child providers may resist allowing TYMHN to direct their service coordination and planning or conceal information from certain members of their treatment teams (Clark & Hart, 2009). Conversely, adult mental health service providers may inappropriately expect TYMHN to show the same maturity and self-sufficiency as older adults (Davis et al., 2009) and may be more interested in managing symptoms than providing the support challenges with transition to adulthood that young adults more greatly value (Jivanjee, Kruzich, & Gordon, 2008). Service providers are often aware of these issues and request training in these areas as well as in more generally assisting clients with issues particularly salient to young adults (Haber et al., 2009; U.S. GAO, 2008). Another issue is grouping TYMHN with older adults in treatment. Youth report discomfort participating in services with older adults, who are often not facing the same challenges in living, do not have the same types of ambitions, experience different types of mental health problems, and see their disorders very differently from TYMHN (Davis et al., 2009).

*Poor coordination*. Specific inter- and intra-sectoral service coordination issues include a host of policy, fiscal, and personnel challenges impacting TYMHN in a variety of ways. Some of these are recognizable from the literature on systems of care for younger youth with mental health needs and their families, though more pronounced due to the increased complexity of managing consequences of ongoing behavioral issues among youth as they age into adulthood (e.g., juvenile and adult criminal justice system involvement or disciplinary difficulties in school; Kazak et al., 2010). For example, youth who struggle in school due to attention deficit disorder and a learning disability may receive separate service plans from a school and a mental health provider that may reflect different understandings of their challenges, and thus contain incompatible or conflicting elements. Issues with discontinuity of child and adult behavioral health service systems, including different eligibility requirements, priorities, and types of services, are also pronounced (Davis & Koroloff, 2006). Greater attention has

been paid to efforts to bridge child and adult systems in recent years, but funding for these remains limited (Davis & Konyagi, 2005). As a predictable consequence, service utilization drops greatly among transitioning youth at age eligibility limits for child services (Pottick et al., 2008). Further research on models for bridging child and adult services would help to address these issues.

## Prevention of Mental Health Disturbances and Risk Behaviors

For the most part, transition services discussed to this point are not "prevention," strictly speaking, as despite focusing on enhancing positive development, they are designed for youth with existing MHNs. This section describes types of services for transitioning youth lacking current MHNs, including universal promotion interventions designed to improve all students' adjustment to postsecondary education settings, and selective and indicated prevention programs for youth at risk of school failure due to weak prior academic performance, socioeconomic disadvantage, or emerging patterns of risk behavior (especially alcohol abuse).

### What Works
No studies were identified that met the criterion of three successful trials.

### What Might Work
*School and community-based programs for younger transitioning youth*. Rigorously evaluated prevention models are available for younger transitioning youth (i.e., still in secondary education or of age for secondary education), especially those at risk of dropout, or who have left school and may be seeking to obtain a GED or work (Hadley et al., 2010). In addition to their uses with populations at risk, such programs show potential for adaptation into school-to-career transition curricula for TYMHN (Henggeler et al., 2002). Although reviewing the variety of interventions falling in this category is beyond the scope of this brief review, excellent summaries are available (Hadley et al., 2010; Lehr, Hansen, Sinclair, & Christenson, 2003). Capacity-building approaches that focus on enhancing sites' abilities to select,

implement, and evaluate a mix of prevention programs (Chinman et al., 2005) are also increasing in prominence. For example, a national capacity-building program for reducing dropout, *Communities in Schools*, recently reported on a large, comprehensive evaluation including an RCT showing strong findings for the approach in reducing dropout and increasing graduation rates (ICF International, 2010).

*University-based prevention and promotion programs. College-based promotion.* Most research on prevention and promotion with older (18+) transition-age youth has been designed for university settings. *Promotion* programs include those addressing mood or anxiety symptoms associated with adjustment to academic challenges or the college environment. These programs are designed to bolster types of coping, including socio-emotional processing (e.g., Steinhardt & Dolbier, 2008), relaxation (e.g., Kanji, White, & Ernst, 2006), and relationship skills, especially skills for intimate relationships (e.g., Braithwaite & Fincham, 2009). Skills-building strategies (e.g., cognitive-behavioral, relaxation, mindfulness) are more effective than didactic approaches, especially if they involve practice opportunities, across several outcomes including social and emotional skills, self-perceptions, and emotional distress (Conley, Durlak, & Dickson, 2013).

*College-based drop-out prevention.* Among these programs, two types, *learning communities* and *performance-based scholarships,* have been identified as effective. *Learning communities* are programs in which groups of students enroll in a common core of classes, often including classes providing information and promoting skills related to secondary adjustment (Zhao & Kuh, 2004). *Performance-based scholarships* such as those employed in the recent *Opening Doors* demonstration (Scrivener & Coghlan, 2011) provide financial assistance based on student performance following the initial award, distributing payments in multiple increments over the course of semesters contingent on continued completion of coursework, maintenance of a minimal grade point average, etc. The demonstration showed the programs to be effective in increasing completion

rates and grades, with best results obtained when combining scholarships with enhanced counseling. Benefits of such programs vary by implementation quality, service intensity, and demographic factors (e.g., minority status or female gender; Brock, 2010).

*Risk behavior prevention and harm reduction.* The most widely used preventative intervention to reduce alcohol abuse among university students is the *Brief Alcohol Screening and Intervention for College Students*. This intervention combines education, including assessment and feedback, education on peer norms to counteract inflated estimates prevalence of alcohol use and abuse on campus, and motivational interviewing strategies, with intensity of services matched to the assessed extent of alcohol difficulties (Dimeff, Baer, Kivlahan, & Marlatt, 1999). BASICS has been shown to be effective in several large, well-designed RCT studies (Babor & Higgins-Biddle, 2000). It appears that where prevention of risk behavior is concerned, youth not enrolled in postsecondary education are indeed the "Forgotten Half" (Halperin, 1998), with few interventions developed for these youth (Scaglione, Turrisi, Cleveland, Mallett, & Comer, 2013).

### What Doesn't Work

Due to the premise of the concept of prevention interventions being strategies to eliminate MHCs before they manifest, arguments have been made questioning the role of college counseling centers, particularly as universities' primary means of providing preventative services for students. Referral to a center usually does not occur until problems have already significantly affected academic performance, and often, exclusively didactic or "information-based" (rather than skills training) approaches are used (McDonald, Pritchard, & Landrum, 2006). Primarily didactic programs have a long history of being shown to be ineffective for adolescents, including prominent programs such as Drug Abuse Resistance Education (DARE) and Scared Straight (Petrosino, Turpin-Petrosino, Hollis-Peel, & Lavenberg, 2013; Sherman et al., 1997). Larimer and Cronce (2007) yielded results similar to the effective mental health prevention results among college students (i.e., Conley et al., 2013), that skills-based interventions are effective in reducing risk behaviors, but not information-based approaches (e.g., pamphlets, greeting cards) or and brief values clarification interventions (i.e., examination and dispelling held values related to pervasive alcohol use).

## Recommended Best Practices

- Attend to issues of fit as well as needs, ensuring that programs are developmentally appropriate and engaging for transitioning youth, and training personnel delivering these programs to be aware of the developmental assets and needs specific to the transition period.
- Implement strategies focusing on transition-specific developmental assets, including identity development, planning and self-regulation, coping skills, and developing supportive relationships and connections to the community.
- Use promising models for individual-level systems change, including the TIP and RENEW models and associated strategies. Be alert for rapidly emerging developmentally informed adaptations of evidence-based and best practices for other age groups.
- Follow examples provided successful demonstrations to pursue community-level systems change to reduce barriers to services and cultivate broader access to developmental resources, including postsecondary educational and employment opportunities.
- Focus on skills training approaches in implementing prevention for transitioning youth, including those approaches to promote successful functioning in postsecondary academic settings and reduce harm related to risk behaviors.

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# Epilogue

Robert W. Plant

The understanding of adolescent mental health has advanced considerably in the 10 years since the preparation of the First Edition of the Handbook of Adolescent Behavioral Problems. Knowledge has grown (particularly in the areas of neuroscience and the "adolescent brain"), the understanding and importance of evidence-based practice has evolved, and the coding (Common Procedural Terminology) and diagnostic systems that influence practice and policy have undergone significant change (International Classification of Disease [ICD]—10 and 11, Diagnostic and Statistical Manual of Mental Disorders [DSM]—Volume 5). There is growing recognition of general principles of practice that may transcend the approach to any specific diagnosis or problem, and new or newly conceptualized issues that did not make the first edition of this volume have emerged as important social and clinical issues (self-injury, bullying, media and technology addiction, dating violence, etc.). It can also be argued that there is a greater and growing appreciation of the need for multimodal strategies that incorporate biological, individual, family, and systemic approaches. In particular there is greater awareness of the power and efficiency of programs that take large-scale policy-driven public health approaches to common problems such as those launched in the fight against adolescent obesity, pregnancy, smoking, and substance abuse. Despite these significant advances, improvements in the availability and quality of prevention and intervention programs are not occurring fast enough to significantly reduce the tremendous burden of disease associated with adolescent behavior problems.

Each of the chapters focused on specific disorders has benefited from a dramatic increase in the number of available studies from which to glean best practice recommendations. The sheer number and diversity of effective prevention and intervention programs is encouraging despite the lag in wide-scale dissemination. The understanding that adolescents are not simply little adults is most evident in regard to findings in the area of biology and neuroscience that demonstrate that the adolescent brain is both incredibly adaptive and particularly vulnerable to harm that can have lasting effects. These findings support early intervention to reduce the severity of disorder, alter behavioral patterns before they become ingrained, and prevent outcomes with poor adjustment in adulthood such as involvement in the juvenile justice system, or poor educational or vocational attainment. For example, adolescents that avoid substance use in adolescence are very unlikely to ever develop a substance abuse disorder. This suggests that preventive approaches that forestall experimentation can have significant long-term benefit. Similar advantages for early intervention are noted throughout this volume.

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During the editing of this handbook, the DSM-5 was published representing the most significant change in the diagnostic classification of psychiatric disorders in decades. Considering the potential influence of this change, a chapter on the history of the DSM and the potential impact of the fifth edition was included in this volume (see Chap. 3, Adolescent Mental Health and the Diagnostic and Statistical Manual by Dr. Sherrie Sharp, M.D.). Dr. Sharp provides a history of the DSM and outlines how political, economic, social, and clinical factors influence the content and structure of the manual. Dr. Sharp also explores how the use of previous volumes has impacted practice and anticipates the impact of the new manual. While the development and release of the DSM-5 was controversial, it will be many years before the full impact will be understood. Some of the major changes that may impact prevention and treatment of adolescents include structural changes such as elimination of both the multi-axis approach and the category of disorders "first diagnosed in infancy, childhood, or adolescence." Instead the DSM-5 will include "intellectual disability," personality disorders and other disorders previously characterized as childhood disorders within categories that are not age specific (anxiety disorders, mood disorders, etc.). For many disorders, guides or modifiers for diagnosis in childhood and adolescence are provided. One of the most controversial changes was the elimination of Pervasive Developmental Disorders and associated changes in the diagnostic criteria for Autism Spectrum Disorder.

Over the last 10 years, the use of the term "evidence-based practice" has grown. In 2004, while the first edition of this volume was in development, the use of the term was common within the scientific and academic communities but few practitioners, regulators, community agencies, or social institutions (schools, justice systems) understood the term or endorsed the importance of utilizing evidence-based approaches. Arguably the use and understanding of evidence-based practices has grown such that today, most in the field have heard the term and have some rudimentary sense of what it refers to. However, despite the increase in exposure, a sophisticated understanding of the complexity of evidence-based practice is uncommon and few graduate training programs provide instruction in evidence-based interventions or include a course on the topic. Chap. 6—Evidence-Based Practice in the Prevention and Treatment of Adolescent Behavior Problems by Sexton et al. reviews evidence-based practices in the treatment of behavioral disorders and some of the issues facing the field. Despite the tremendous growth in the number of evidence-based practices, increased awareness of their existence facilitated by the development of Internet registries such as the Substance Abuse and Mental Health Services Administration's National Registry of Evidence-Based Practices and Programs (SAMHSA's NREPP), most practice in real world community settings is not evidence based. Also, few "evidence-based practices" provide sufficient training, coaching, fidelity monitoring, or other implementation supports necessary for achieving results comparable to those obtained in research studies. Sexton's chapter also recommends greater rigor and diversity with regard to what counts as evidence, enhanced efforts to educate the field, support for expert implementation, and the need to address workforce issues that underlay many implementation challenges. While significant progress has and is being made, much more is needed before evidence-based practices will be the norm rather than the exception.

A review of the commonalities across the chapters in this volume begins to reveal some general principles that may apply across specific disorders, issues, and problems. For example, nearly every chapter acknowledges that a multi-modal, multi-tier approach is the only effective strategy to address adolescent problem behaviors. No single approach, program, or practice is likely to be effective since most disorders are multiply determined and caused by a variety of individual, social, biological, family, and environmental influences. The importance of early and timely intervention is also common across disorders. Programs that incorporate skill building, particularly cognitive behavioral approaches, and those that involve key family, school and social systems tend to be more effective. As

noted above, implementation can be as or more important than the program implemented.

This volume includes a number of "new" chapters that reflect social and technological changes that have occurred over the last 10 years and/or greater understanding and recognition of the significance of particular behavioral problems. For example, bullying has emerged as a common experience for many adolescents that can have a dramatic impact on health and well-being. Many programs have emerged to address bullying but according to the authors of Chap. 23 only the Olweus Anti-Bullying Program meets the highest standards of evidence. The authors also note that many effective programs are unsuccessfully utilized due to problems in implementation that reduce fidelity to the original model. Phenomenal advances in technology that have produced more powerful cell phones, tablets, and computers, along with the growth and enhanced capacity of the Internet have contributed to a growing problem of media and technology addiction that warrants further study and the development of specific prevention and intervention programs. Similarly, awareness of the commonality and deleterious impact of various adolescent behavior problems has prompted research and program development in the areas of dating violence, self-injury, and the impact of physical/emotional abuse.

While it has long been acknowledged that efforts to address problems after they have developed are less effective than preventing the problem in the first place, and that there are far too few specialty providers to treat the vast numbers of adolescents with behavioral disorders, only recently has this knowledge begun to impact public policy and be popularized in the news media. The recent defeat of NY Mayor Bloomberg's effort to ban the sale of large sugary soft drinks underscores the controversy that remains with some public health initiatives. However, the use of educational campaigns, school lunch policies, incentives for healthy behavior, and other public health approaches appear to be turning the tide in the fight against childhood and adolescent obesity. While it may be premature to declare victory, this trend is encouraging in that many of the behavior problems outlined in this volume appear amenable to large-scale systemic or public health approaches.

Despite the progress this handbook documents and the real hope for further progress in the next decade, many challenges remain. Over half of all adults in the USA will meet criteria for a psychiatric disorder at some point in their life and of all adults with psychiatric disorders, most developed those disorders in childhood, particularly during adolescence. Our appreciation of the need to better understand, prevent, diagnose, and treat behavioral disorders in adolescence has never been greater and yet, in the USA and across the world there are vastly insufficient resources to address the scope of the problem. More than two thirds of those with a behavioral health condition never receive behavioral health care of any kind and even fewer receive the kind of recommended best practice that is described in each of the chapters in this volume. In the USA, the healthcare reform commonly known as "Obamacare" provides some promise for improved outcomes through "value-based" payment reforms that provide incentives for adopting evidence-based practices and promoting the integration of behavioral health and primary care. As knowledge and understanding of adolescent behavior problems and disorders increase, we can only hope that greater resources will be brought to bear and that more adolescents will be the recipients of evidence-based prevention and treatment.

# Index