Andrew L. Cherry
Valentina Baltag
Mary E. Dillon *Editors*

International Handbook on Adolescent Health and Development

The Public Health Response

Springer

International Handbook on Adolescent Health and Development

Andrew L. Cherry · Valentina Baltag
Mary E. Dillon
Editors

International Handbook on Adolescent Health and Development

The Public Health Response

Springer

Editors
Andrew L. Cherry
School of Social Work
University of Oklahoma
Tulsa, OK
USA

Mary E. Dillon
School of Social Work
University of Central Florida
Orlando, FL
USA

Valentina Baltag
Department of Maternal, Newborn, Child
and Adolescent Health
World Health Organization
Geneva
Switzerland

ISBN 978-3-319-40741-8 ISBN 978-3-319-40743-2 (eBook)
DOI 10.1007/978-3-319-40743-2

Library of Congress Control Number: 2016945938

Printed on acid-free paper

This Springer imprint is published by Springer Nature
The registered company is Springer International Publishing AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

Preface

This book comes out at an unprecedented time for global adolescent health. Before the twenty first century, there was a substantial international investment in neonatal and pediatric healthcare in virtually all countries around the world. At the same time, there was little research on adolescence, as a specific period in time with specific health needs. This level of interest began to change when health and social data revealed that the gains made in neonatal and pediatric healthcare were being lost during adolescences. Public health researchers and health providers pointed to the lack of adolescent specific health and social services designed to bridge the gap between children's health programs and the adult health and social care infrastructure.

Subsequently, interest in adolescent health issues has been growing and translated in major international initiatives. On September 26, 2015, the day after the General Assembly of the United Nations adopted the Sustainable Development Goals, the U.N. Secretary-General launched the Global Strategy for Women's, Children's and Adolescents' Health. The strategy lays out an ambitious vision for a world "in which every woman, child and adolescent in every setting realizes their rights to physical and mental health and wellbeing, has social and economic opportunities, and is able to participate fully in shaping prosperous and sustainable societies". What is different in this new strategy is that it includes adolescents as "central to everything we want to achieve, and to the overall success of the 2030 Agenda" (Ban Ki-moon). Aligned with the Global Strategy, the 68th World Health Assembly requested the World Health Organization Secretariat to develop a Global Framework for Accelerated Action for the Health of Adolescents (the AA-HA! Framework) in consultation with youth, Member States, and major partners. The Lancet established a Commission on Adolescent Health and Wellbeing to support actions in response to the shifting determinants of health and health needs among the world's youth.

With this, the sense of urgency that was growing over the past two decades that something needs to be done differently to enhance the positive development of adolescents has found its focus. We believe that this book provides a fair snapshot of the state of the knowledge and practice in adolescent public health, and hope that the reader will find practical answers to some of the questions that would instigate him/her to act locally.

Most definitions of adolescence define this period in terms of transition, dynamic changes and the goal of adulthood. This book is about a somewhat

different adolescence. It is about the period that for every single adolescent among 1.2 billion adolescents worldwide is their very present. It is about the adolescence that is not a mean to an end, but a *raisons d'être* in itself. It is about adolescence that has biological underpinnings for being a distinct period of human growth and development, but it is also about adolescence that is socially constructed. There is no other period in human life that is so tightly regulated by societies as adolescence. There is a labyrinth of rules and regulations for adolescents about the desirability, onset and frequency of all sorts of behaviors and activities ranging from sexual activity to use of services—all with good intention to protect adolescents.

The problem is when the regulations are not informed by a developmental marker, but instituted arbitrarily by politicians and policy makers. There is no biological explanation why the age of criminal responsibility varies from 8 years of age in Scotland and 10 years of age in England and Wales to 18 in Belgium and Luxembourg. When adolescence is socially constructed, regulators may decide when to pull back adolescents towards childhood (e.g., regulations on informed consent for medical services) and when to push them towards adulthood (e.g., legal provisions for child marriage).

With so many rules and in the absence of a scientific basis for what is a normative level for various behaviors, no wonder that adolescents are "at risk" of trespassing socially constructed boundaries, and "targets" for various programs and initiatives in preventing them from doing so. This is not to say that adolescents are not vulnerable, but we have to distinguish between three different sources of vulnerabilities: (1) those that have a biological foundation (e.g., propensity for impulsive behaviors due to the peculiarities of brain development); (2) those that are socially determined (e.g., low community acceptance of premarital sexual activity), and (3) those that are politically constructed. Deliberate policies, irrespective of their primary intent, may undermine adolescents rights (e.g., minimum age for transferring juvenile cases to the adult criminal court, or regulations about third party authorization for adolescents access to services). This book will help the reader to make this distinction, and to see how it can be applied in designing adolescent specific public health responses.

The book is presented in four parts. **Part I** is *A Snapshot of Adolescent Health and Development Globally and from Selected Countries,* and explores the reasons why adolescent health is becoming a public health priority. It summarizes the current leading causes of morbidity and mortality among adolescents globally, as well as, with examples from Cuba and Japan, covers trends in health promoting and health compromising behaviors that commonly emerge during the adolescent years.

Part II, *Adolescent Health Conditions and the Public Health Response,* examines in more depth the leading causes of ill health and death in adolescence, provides examples of effective evidence based interventions and successful public health policies.

Generally, the health sector is not organized by diseases. Healthcare reforms are usually concerned with shifting service delivery to people-centered care, which means that it is focused, organized around the health needs and expectations of people and communities rather than

on diseases. From the point of view of policy making and healthcare organization, therefore, we found it useful in this book to discuss what arrangements need to be made in primary and referral level care in order to provide equitable, comprehensive, and integrated health services for the adolescent population. The exact configuration of services varies from country to country, but in all cases services require a well-trained workforce, robust financing, and financial protection mechanism. As well, attention must be paid to the particular needs of adolescents who report poorer satisfaction with the healthcare services compared with adults, and face greater cost and other barriers to accessing healthcare.

Part III of the book, *Adolescent Responsive Health and Social Systems*, therefore, looks at the key functions of health systems from the perspective of adolescents' specific needs and expectations.

There is a range of different platforms available to provide health services to adolescents: public and private facilities, schools, mobile clinics, pharmacies, youth centers, e-health, and outreach strategies. Among them, school health services are particularly well placed to reach adolescents with preventive interventions. In 2012, the primary gross school enrolment ratio was 108.4 % (global average) (the primary gross school enrolment ratio can exceed 100 % due to the inclusion of over-aged and under-aged students, because of early or late school entrance, and grade repetition). The secondary gross school enrolment ratio was 73 % (global average). Importantly, in many countries the trends for both indicators are positive. Among the scientific and political advances that adolescent health agenda witnessed during the last few years, however, the role of school health services has not been adequately addressed. We decided therefore to dedicate a distinct part in this book to case studies of school health services.

Part IV, *Pairing Children with Health Services: The Role of School Health Services,* describes this promising form of linking children and adolescents with preventive interventions and other services.

An initial glance at the table of content of this book may leave the reader with an impression that some key topics are missing. Indeed, there are no chapters that are called "Youth participation", "Adolescents' rights and gender equality", "The importance of social determinants of health", or "Adolescents are not all the same". So important are these topics for adolescent healthcare and protective policies, that they are **crosscutting themes in these chapters**:

- The importance of an **ecological understanding of adolescent health** and of addressing social and structural determinants in policy measures is a defining theme in chapters about sexual and reproductive health, adolescent nutrition, and injury prevention, among others. The authors demonstrate how adolescent health outcomes are influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious, spiritual factors, and how an ecological understanding of adolescent health informs program design.
- The importance of **gender equality and respecting, protecting and fulfilling adolescents right to health** and healthcare is a central idea in

the chapters from India and Chile, as well as, in chapters about sexual and reproductive health (Chaps. 8 and 9), restorative justice and mental well-being (Chap. 7), and quality of care (Chap. 15), among others.

- **Adolescent participation** in decisions, which affect their health and lives is the cornerstone for assessing the adolescent's capacity for autonomous decision-making (Chap. 18). Adolescent participation is also in inherent characteristic of quality healthcare services for adolescents, and is one of the eighth quality standards, as described in Chap. 15. The experience from Portugal on implementing an adolescent health curriculum shows how important student involvement in program evaluation was to improve the content and teaching methods of the adolescent health course (Chap. 17).
- **Adolescents are not a homogeneous group**: the fact that policies and programs need to take into consideration the heterogeneity of adolescents, including the differential in exposure to risk factors and differing developmental phases and health needs of younger and older adolescents is emphasized in several chapters (Chaps. 1, 3, 4, 18 and 20).
- **Some adolescents are particularly vulnerable** and this is why it is important to monitor the health of marginalized youth (Chap. 1). Policies need to be in place to track health disparities between subgroups of adolescents, and to provide financial and other forms of protection from factors of vulnerabilities (Chap. 19).

Forty four experts in the field have directly contributed towards the content of this book. We want to thank them all for their enthusiasm in knowledge sharing, and professionalism in knowledge synthesis for the benefit of the reader whom, we hope, will take it one step further into knowledge translation in their countries and settings.

Tulsa, OK, USA — Andrew L. Cherry
Geneva, Switzerland — Valentina Baltag
Orlando, FL, USA — Mary E. Dillon

Contents

Part I

A Snapshot of Adolescent Health and Development Globally and from Selected Countries

The Epidemiology of Adolescent Health

1

Elizabeth Saewyc

Monitoring the Health of the Global Population of Adolescents

In 2013, there were 1.2 billion adolescents, about 17 % of the world's population (Clifton and Hervish 2013), the largest population of adolescents throughout history to date. While the aging of populations in high-income countries means a relatively low proportion of their population are between the ages of 10 and 19, in low- and middle-income countries, as many as 1 in 5 citizens are adolescents. Indeed, a majority of adolescents in the world today live in low- and middle-income countries, primarily in the global south.

Part of the reason for this demographic shift is the success of national efforts to reduce infant mortality and increase child survival as part of the Millennium Development Goals (United Nations 2015), often in the cultural context of early marriage and high fertility. But, will the efforts, which have improved survival during early childhood, improve survival during adolescence? Likewise, in high-income countries, given the increasing numbers of older adults who are living longer, with chronic health conditions that require significant health care resources, are the policy makers aware of adolescents' health needs and issues, and include adolescents in health systems plans?

A key component of public health practice is monitoring and surveillance of the health status of populations. In many parts of the world, the health and mortality data collected are still not regularly reported separately for adolescents, and this remains a priority recommendation in several international reports (United Nations Population Fund 2012; World Health Assembly 2011; WHO 2014). A growing number of countries, however, are implementing national youth health surveys, or participating in international surveys, as well as improving their data collection and reporting key information about the health status of adolescents. In 2014, the World Health Organization assembled much of the existing information into a comprehensive report, *Health for the World's Adolescents: A Second Chance in the Second Decade* (http://apps.who.int/adolescent/second-decade/). While this chapter summarizes the latest information about adolescent health from that report and other sources, you can find more detailed information and trends for global regions and individual countries in the interactive World Health Organization online report.

E. Saewyc (✉)
Division of Adolescent Health and Medicine, and
School of Nursing, University of British Columbia,
Vancouver, BC, Canada
e-mail: elizabeth.saewyc@ubc.ca

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_1

Leading Causes of Mortality Among Adolescents Worldwide

Adolescence is generally a healthy time period, and youth aged 10–19 have some of the lowest mortality rates among populations worldwide (WHO 2014). In the last half of the twentieth century, there was significant improvement in mortality rates among children, and, to a lesser extent, among adolescents, worldwide (Viner et al. 2011). These reductions in mortality rates continued between 2000 and 2012 for adolescents in nearly all regions in the world. The exception is boys aged 15–19 in the Middle Eastern region, where mortality rates increased slightly, primarily due to deaths from war. Among boys of the same age in South and Central America, the mortality rates remained the same (WHO 2014). In order to be comparable across regions and across age groups, mortality rates are generally reported as deaths per 100,000 of the population.

There has also been a shift in the leading causes of death among adolescents in most high-income countries and many middle-income countries. In the past, these countries suffered from deaths due to infectious diseases and cancers. In modern times, deaths have shifted to those caused by behaviors such as accidental injury, violence, and self-harm (Patton et al. 2009; Viner et al. 2011). Part of the reason for the shift was the systematic implementation of childhood immunizations, the development of antibiotics, as well as improvements in treatments for pediatric cancers. As a result, children and youth started surviving who might have died of such causes in the past.

Because of these improvements in high-income countries, the majority of deaths to adolescents now occur in low- and middle-income countries, primarily Africa and Southeast Asia, which together account for nearly 70 % of all deaths among adolescents globally. In many low- and middle-income countries, there are still far too many adolescents who die of infectious diseases such as HIV, cholera, tuberculosis, malaria, and measles (Viner et al. 2011; WHO 2014). For example, 16 % of deaths among adolescents in the Africa Region in 2012 were due to HIV. They accounted for 90 % of deaths from HIV among adolescents worldwide. Similarly high rates of deaths due to other infectious diseases occur in low-income countries throughout the world. As a result, HIV, lower respiratory infections (pneumonia), diarrheal diseases, and meningitis still are among the top 10 leading causes of death among adolescents globally. Deaths from HIV were also estimated to have increased between 2000 and 2012 among adolescents, the only age group in which deaths from HIV have not declined. However, there have been some impressive successes in reducing deaths from infectious disease, even in low-income countries. Due to national immunization programs, for example, there were 90 % fewer deaths from measles in the past decade among adolescents aged 10–14 in Africa. The rate of death from measles worldwide (4 per 100,000 adolescents) has dropped 75 %, to 1 per 100,000 adolescents (WHO 2014).

Behavior-related causes of death are becoming some of the leading causes of mortality among young people in low- and middle-income countries. Worldwide, road traffic accidents are one of the leading causes of death among adolescents, at 10.22 deaths per 100,000 globally (WHO 2014). It is the leading preventable cause of death among adolescent boys, and among the top five causes of death among adolescent girls, in both older and younger adolescents, and across all regions. The rate varies widely by region and sex, however, with the highest rate at 21.11 deaths per 100,000 among boys in Africa, and the lowest at 3.70 deaths per 100,000 among girls in middle-income European countries. Another form of unintentional injury, deaths by drowning is also a major cause of mortality among younger adolescents in nearly every region of the world, except for Africa. In every region, boys are more likely to die from unintentional injuries than girls in the same region.

Deaths from violence, whether interpersonal violence or due to armed conflicts, are also an important contributor to mortality among adolescents, especially those 15–19 years of age. Although death due to war is nearly nonexistent

in high-income countries, it is the leading cause of mortality among males in low- and middle-income countries. In the Middle East, adolescent mortality is 39.56 deaths per 100,000 among boys aged 15–19. Among boys between 10 and 14 years of age, the mortality death rate is 15.07 deaths per 100,000. War also contributes measurably to mortality among girls, with 7.55 deaths per 100,000 among girls aged 10–19 in the Middle East region.

In contrast, interpersonal violence not related to war is a leading cause of death among adolescent boys in low- and middle-income countries in South and Central America. Among 15–19-year-old boys, the mortality rate is extremely high at 70.05 deaths per 100,000. Because deaths from interpersonal violence are common in several regions, it ranks among the top five causes of death among adolescents globally. It is one of the leading causes of death among boys in high-income countries as well.

Suicide is another leading cause of death among adolescents in nearly every region. Among high-income countries, it is the second leading cause of death, after road injuries, for both boys and girls, although the rates are still quite low, at 9.22 deaths per 100,000 for boys and 4.98 deaths per 100,000 for girls. The highest mortality rates from suicide are found in the Southeast Asia region, where it is the leading cause of death among older girls at 27.92 deaths per 100,000, and among older boys at 21.41 deaths per 100,000.

There is one top ranked cause of mortality that only affects adolescent girls: deaths due to maternal conditions, which include deaths from childbirth and complications from self-induced abortions in countries where abortion is illegal. Although the Millennium Development Goals included a reduction in maternal mortality, and rates of maternal mortality among adolescent girls declined between 2000 and 2012, it still is the second leading cause of death among adolescent girls aged 15–19 globally, at 9.72 deaths per 100,000. The highest adolescent rates of maternal death are in Africa (33.83 deaths per 100,000), followed by the Middle East (9.94 per 100,000) and Southeast Asia (8.97 per 100,000). In contrast, among girls in high-income countries, less than 1 death per 100,000 (0.32 per 100,000) was from maternal conditions in 2012.

The majority of the 1.3 million deaths among adolescents in 2012 were due to preventable causes. This is why it is important to monitor changing patterns of mortality among adolescents nationally, regionally, and globally. This data is used to suggest priorities for public health interventions. Yet, most reports of mortality combine data on older adolescents with that of adults (e.g., 15–29 years of age), and younger adolescents with toddlers and children (e.g., 1–14 years of age), making it difficult to identify the key causes of death in this age group and masking potential causes that are developmentally specific to adolescence.

Beyond Mortality: The Global Burden of Disease and Disability Among Adolescents

Although removing or reducing causes of premature death among adolescents is an important priority for public health, there are a number of health conditions that contribute to disability, suffering, and diminished health during these years, even when they do not cause death. Two measures are commonly used in public health monitoring related to morbidity, to allow comparisons across regions and across conditions: years lost to disability (YLDs) and disability-adjusted life-years (DALYs). YLDs are estimates based on how common the condition is and how debilitating it is in affecting the functions of daily living. This measure provides an estimate of the burden of ill health. DALYs combine both YLDs and causes of mortality for the population. As described in *Health for the World's Adolescents,* DALYs "are a measure of the years of healthy life lost due to ill health, disability or premature death. They estimate the gap between current health status and an ideal health status, with the entire population living to an advanced age free of disease and disability. For a specific health condition, DALYs are calculated as the sum of the years of life lost (YLL) due to

premature death plus disability (YLD) for people living with the health condition" (WHO 2014). DALYs are reported as years lost per 1000 of the population.

The top five causes of YLDs for adolescents globally have remained fairly consistent since 2000. They account for nearly half the years lost to disability among young people. They include mental health conditions (unipolar depressive disorders and anxiety), as well as chronic conditions (asthma, back pain, and neck pain), and malnourishment (iron deficiency anemia). Among older adolescents, alcohol use disorders replace asthma in the top five causes of YLDs; in fact, alcohol use disorders are the leading cause of YLDs among 15–19-year-old boys in nearly all regions except the Middle East, which includes high-income countries. It is lower among girls, but still within the top five causes of YLDs. There are other causes of YLDs that only affect particular global regions; for example, malaria is a leading cause of YLDs among younger adolescents in Africa, while hookworm is a similar cause of YLDs in Southeast Asia.

DALYs provide another common public health approach for identifying causes of poor health and disability, and for establishing priorities to guide population-level interventions. WHO reported a decline in DALYs between 2000 and 2012 for adolescents of about 8 %, but this is half the decline seen in other populations. In other words, the burden of disease, disability, and premature death among adolescents is not improving as much as it is for other groups. Low- and middle-income countries have higher rates of DALYs than high-income countries, with Africa reporting the highest burden of DALYs, due in part to the high rates of adolescent mortality in these countries.

Because DALYs combine both YLDs and causes of mortality, the top 10 causes of DALYs worldwide among adolescents aged 10–19 mirror the key issues seen in both YLDs and mortality rates: depression, road traffic injuries, iron deficiency anemia, HIV/AIDS, suicide and self-harm, back and neck pain, anxiety disorders, asthma, and lower respiratory infections. However, there are gender and age differences in the most common causes of DALYs across adolescence. For example, depression is associated with a larger number of DALYs lost for girls than for boys, and road injuries are higher for boys. Among older adolescent girls (15–19 years of age), maternal conditions, pregnancy, and abortion-related deaths and health issues are the second leading cause of DALYs lost , and iron deficiency anemia is number four, but road injuries do not make it into the top five causes. In contrast, road injuries are at the top of the list among older adolescent boys, interpersonal violence is the second leading cause of DALYs lost, suicide and self-harm are number three, and alcohol use disorders are number four, with depression as number five. Among younger adolescent boys and girls, iron deficiency anemia is a leading cause of DALYs. Asthma is also in the top five worldwide and in most of the regions.

There are also regional differences in top causes of DALYs, and the patterns in some regions look very different from the global patterns. For example, in Africa, three of the top five causes of DALYs for both older boys and girls are infectious diseases, including HIV/AIDS (number one for both genders), meningitis, and lower respiratory infections, with maternal conditions and depression for older adolescent girls and road injury and interpersonal violence for older adolescent boys rounding out the top five. In Southeast Asia, HIV/AIDS and meningitis are not in the top five causes of DALYS lost for girls, but instead diarrheal diseases and iron deficiency anemia are. For boys it is drowning plus back and neck pain. In low- and middle-income countries in Europe, migraines are a top five cause of DALYs for girls, while alcohol use disorders are in the top five for boys. In the Middle East, war is one of the leading causes of DALYs lost for both older and younger boys, and is in the top five for younger girls; also, this is the only region where armed conflict/war makes it into the top five causes of DALYs lost among adolescents.

The varied patterns of DALYs (for older and younger boys and for girls across different regions) are used to help suggest key areas to focus health promotion and prevention programs

in the different regions. A number of the causes of DALYs lost are also preventable health issues.

Monitoring Health-Enhancing and Health-Compromising Behaviors Among Adolescents

As shown in the patterns of mortality and DALYs described above, there are a number of behaviors that emerge or are consolidated during adolescence that contribute to healthy growth and development, and may prevent both communicable and non-communicable disease (NCD) now and in older adulthood. This would include behaviors such as adequate levels of regular physical activity, healthy diet, and injury or infection prevention strategies such as wearing bicycle helmets or using condom or other barriers during sexual activity. Other behaviors may begin during adolescence that are linked to higher risks for disease, disability, and premature death such as tobacco use, alcohol or other drug use, unprotected sex, and violence involvement. To promote healthy development among adolescents, public health practice includes a focus on fostering health-enhancing behaviors and preventing or reducing hazardous behaviors. By focusing on some of the key behaviors and conditions linked to mortality and morbidity, public health professionals can work to improve young people's health during their adolescent years. These programs also help prevent or delay the onset of chronic conditions during adulthood.

How do public health professionals know where to focus their policies and programs to promote adolescent health? Adolescent health leaders and international organizations like WHO have called for identifying a set of key indicators of adolescent health and risk, including behaviors that may contribute to health and health problems (Patton et al. 2012). Although there are no indicators that are consistently collected across all countries, regularly repeated surveys monitoring the health and risk behaviors of adolescents are an increasingly common approach for capturing this information. Many high-income countries administer these surveys to adolescents every few years in school settings; some of them even collaborate across multiple countries to administer comparable surveys; for example, the Health Behavior of School-Age Children (HBSC, www.hbsc.org) and the European School Survey Project on Alcohol and Other Drugs (ESPAD, www.espad.org). The HBSC captures data from 11-year-olds, 13-year-olds, and 15-year-olds, while the ESPAD focuses on those 15 years and older. A growing number of low- and middle-income countries are supported by international NGOs and governments to conduct school surveys as well, such as the Global School-Based Student Health Survey (GSHS, www.who.int/chp/gshs/en/), which surveys youth 13–17 years of age, and the Global Youth Tobacco Survey (GYTS, www.who.int/tobacco/surveillance/gyts/en/), which surveys youth 13–15 years of age. However, in those low-income countries where secondary school is not compulsory and marriage during adolescence is common, many young people may be in the work force rather than in school. These countries may also conduct household surveys, such as the Demographic and Health Surveys (DHS, www.measuredhs.com/), to gather information about adolescents along with other family members.

Several adolescent health behaviors and health issues are measured using school-based surveys such as the Global School-Based Student Health Survey (GSHS), GYTS, and Health Behavior of School-Age Children (HBSC). Some of these surveys have been repeated often enough, in dozens of countries, to allow monitoring of trends in health behaviors, although this has primarily been the case for high-income countries. A comprehensive discussion of all the various indicators, their patterns and trends globally, and variation across regions is beyond the scope of this chapter, but more detailed information can be found in the WHO *Health for the World's Adolescents* report's Chap. 4.

However, a few of the key indicators are mentioned below. Some are linked to the leading causes of mortality and morbidity among adolescents, and others are included because they are an emerging international priority for youth and adults.

Injuries and Violence Involvement

Although road traffic accidents are a leading cause of mortality and DALYs among adolescents worldwide, the data about driving behaviors are inconsistently captured, if at all. Different measures are used in different regions, and in other regions government monitoring is used. Thus, comparisons across nations are difficult to impossible. Among measures, both the GSHS and HBSC ask about interpersonal violence and injuries.

Data about involvement in physical fighting in the past year are available in the *Health for the World's Adolescents* report for more than 100 countries (WHO 2014). The patterns show that fighting is common, but with distinct gender differences. Boys more often report involvement in fighting than girls, and in more than half of the countries that asked about fighting, the majority of boys said they had been in at least one physical fight in the past year. In the countries with trend data from the HBSC, more than a third of the countries show declining rates among 13-year-old boys in recent years, but two countries—Ukraine and Greece—reported increasing prevalence of fighting among 13-year-old boys. Among 15-year-old boys, there were few countries with declining trends, and Greece reported a significant increasing rate of fighting.

Bullying is another important form of interpersonal violence among adolescents. It is linked to significant mental health problems for those who are targeted by bullying, as well as for those who both engage in bullying and are victimized by bullying (Luk et al. 2010; Winsper et al. 2012). In the GSHS and HBSC data (WHO 2014), the prevalence of recent bullying (experienced in the past 1 or 2 months) varied widely, both among countries within geographic regions and across income levels. For example, Italy, Armenia, Macedonia, and Tajikistan all reported rates below 10 %, while Egypt, Vanuatu, Samoa, Solomon Islands, Zambia, and Belgium reported rates above 60 % (only for boys in Belgium). Boys were more likely to have been bullied than girls in about half the countries, but rates were significantly higher for girls in a few countries such as Algeria, Zambia, and the Cook Islands. In the HBSC data, trends in bullying appear to be decreasing in most countries.

Mental Health Issues

Mental health issues, such as depression and anxiety, are leading contributors to DALYs lost among adolescents throughout the world. Suicide is among the top causes of mortality. Very few of the school-based surveys include a measure of depression or anxiety, and those that do use a variety of different measures, so it is not feasible to compare or report results. Suicidal ideation and prior suicide attempts are among the key predictors of suicide completion (Kokkevi et al. 2012).

Normally, there are only one or two questions commonly used on surveys that ask about suicide. Even more of a problem, only a limited number of youth health surveys have questions about suicidal thoughts or attempts. Indeed, none of the countries that participate in the GSHS in Southeast Asia asked about suicide attempts, despite deaths from suicide being the highest in this region. Only a third of the countries in the GSHS ask this question, and it is not a core question for the HBSC in Europe and North America. There are a few national school-based surveys in Europe (Hibell et al. 2009) and in the USA (Eaton et al. 2012) that ask about suicide attempts, as does at least one provincial survey in Canada (Smith et al. 2014). Among all these studies, the prevalence of past-year suicide attempts ranges widely; many high-income countries report rates of around 5–10 %, while several low- and middle-income countries report rates closer to 15 %. In countries, such as Samoa and the Solomon Islands, more than one in three

adolescents have attempted suicide in the past year. In Barbuda and Kiribati, more than one in three girls reported suicide attempts. In Europe and the Americas, adolescent girls were nearly twice as likely to report suicide attempts as boys. In Africa, the Eastern Mediterranean, and the Western Pacific regions, there were no gender differences in suicide attempts.

Sexual and Reproductive Health Behaviors

Sexual and reproductive health among adolescents remains a priority within WHO and within other UN agencies, because sexual behavior contributes to mortality and DALYs, especially in terms of maternal mortality among girls. Unprotected sexual behavior is also one of the primary modes of transmission of HIV and other sexually transmitted infections. About 80 % of countries that conduct the GSHS or HBSC include at least one or two questions about sexual behaviors.

The national prevalence of youth who have ever had sex varies widely between nations in every region, from 69 % of boys in Samoa and 71 % of girls in Greenland, to fewer than 1 % of boys and girls in Indonesia. There are no clear patterns of trends in sexual behavior among the countries in Europe and North America that participate in the HBSC.

As well, in most of these countries (86 %) and at least half or more of 15-year-old adolescents reported using condoms the last time they had sex. Some countries have extremely high use, such as Estonia, with 91 % of sexually active boys and 89 % of sexually active girls reporting they used a condom the last time they had sex. Other countries have extremely low use of condoms reported. Trends show either no change or slight improvements in condom use among adolescents in European and North American countries, with several countries that ask this question reporting an increased percentage of adolescents using condoms, especially girls.

The prevalence of sexually active adolescents tends to increase with age, so it is important to monitor sexual behaviors among older adolescents as well. Data for adolescents aged 15–19 years was available for 51 countries that are part of the Demographic and Household Surveys (DHS). Although the measure used differed somewhat from the school-based surveys, these surveys reported on condom use "at last higher risk sex," which is sex with a non-cohabiting or unmarried partner. Some countries reported very low condom use among adolescents, such as Madagascar (about 9 % of young men and 5 % of young women), but other countries reported fairly high rates, such as Guyana, where 85 % of young men and 59 % of young women reported condom use during their last high-risk sex. Overall, young men reported higher condom use rates than young women, other than for Tanzania and Ukraine, where the rates were about equal for both.

In 75 % of the countries in Africa with high prevalence of HIV, only a third or fewer younger adolescent young women reported using condoms. Rates among the three Asian countries that participate in the DHS are also low. Condom use during high-risk sex in the past year was reported by less than 10 % of younger adolescent women in the Philippines, 11 % of young men in Timor Leste and 20 % of young women and 31 % of young men in India.

In other regions, prevalence of condom use was somewhat higher; for example, among low- and middle-income countries in Europe that participated in the DHS, condom use prevalence among young women varied from 36 % in Kazakhstan to 73 % in Ukraine. In nine countries from Central and South America, young women in Nicaragua reported the lowest rates, at 10 %, but the rest of the countries reported rates between 30 and 60 %.

Health and Risk Behaviors Linked to Non-communicable Diseases

With the decline in infectious diseases among adolescents, the onset of behaviors during the adolescent years that contribute to NCDs during adolescence and into adulthood have received

greater prominence in public health responses. These NCDs include cancer, cardiovascular diseases, chronic respiratory diseases, and diabetes. WHO has identified a core set of indicators to monitor among populations at risks for these NCDs (http://www.who.int/nmh/ncd-tools/indicators-definition/en/). Several of these indicators are focused on adolescents and are monitored through the HBSC, GSHS, and the GYTS school-based surveys. Some of the NCDs are also monitored among older adolescents in low-income countries via the DHS.

The health and risk behaviors that are monitored as part of the core set of indicators include tobacco use, alcohol use, fruit and vegetable consumption, consumption of sugar-sweetened beverages, and physical activity. An additional risk behavior, cannabis use, is regularly monitored because of its relatively widespread use and its link to mental health and neurocognitive declines. The most recent data on prevalence of these behaviors for each country is captured in the WHO online report, *Health for the World's Adolescents* (2014). Patterns of behaviors across regions and trends over time are summarized below.

Initiating *tobacco use* during adolescence, for example, increases the risk of persistent nicotine addiction and regular smoking (Hu et al. 2006). Tobacco use remains one of the strongest contributors to NCDs and to early mortality, which is why it continues to be monitored using the GYTS.

Globally, there have been significant declines in tobacco use among adults, and this pattern has also been shown among adolescents in most high-income countries and some lower-income countries (Robinson et al. 2014). The rates of those who have ever tried tobacco dropped by more than half in some countries over the past decade, and regular use declined as well. There were still areas, however, where tobacco use was quite common. In 12 of the 158 countries that participated in the GYTS, as many as, one in three adolescents reported being current smokers. Boys were more likely to use tobacco than girls in a number of countries, but it was not a consistent pattern, and in a few countries, such as Latvia and Estonia, the percentage of adolescent girls who have tried tobacco appeared to be increasing rather than declining.

Alcohol use contributes to risks during adolescence for injury, including a lead role in road traffic accidents among youth. It has been linked to unprotected sexual behaviors and suicide attempts, but also plays a role in contributing to NCDs in adulthood such as diabetes, cardiovascular disease, strokes, and some cancers (Giesbrecht et al. 2011). The percentage of adolescents who report recent alcohol use (at least once in the past month) varies widely across countries, from nearly 66 % of boys and girls in the Seychelles, to only 1 % of boys and girls in Myanmar. In most countries that participated in the school-based surveys, a higher proportion of boys drank alcohol than girls. Alcohol use itself is not necessarily a health risk; it is high levels of alcohol intake, especially heavy episodic drinking, that contributes to the health risks. Thus, asking a question about ever having been drunk is one way to measure hazardous alcohol use. The percentage of youth who report drunkenness, however, varies widely across countries and regions. In trends among high-income countries in Europe and the Americas, most countries had declines in weekly drinking for both older and younger teens, in many countries by more than half among younger adolescents. However, a few countries reported increases and have been drunk twice or more in their life.

Cannabis use before age 18 is more likely to lead to persistent use, which is associated with mental health problems as well as an increase in the risk of injuries among adults (Hall and Degenhardt 2009). There were only 23 countries in the GSHS and 36 countries in the 2009 HBSC that asked about cannabis use. The percentage of adolescents in these surveys who reported they have ever tried cannabis varied widely, from 1 to 2 % in countries, such as Benin and Mongolia, to as many as one in every three 15-year-olds in Canada and Switzerland. Unlike gender differences in tobacco and alcohol use, in many countries boys and girls showed a similar prevalence of ever trying cannabis. As a trend, cannabis use does not appear to be increasing

among adolescents in most high-income countries; about half of the countries in Europe and the Americas with trend data reported declines in ever use of cannabis among students, although two countries, Latvia and Lithuania, reported increases. Among adolescents in the HBSC who have ever tried cannabis, there has been no change in the percentages who report using cannabis once or more in the past month.

Nutrition is an important contributor to health over the lifespan, and ensuring more fruits and vegetable consumption among adolescents is a goal to help improve micronutrients and reduce risks for obesity, diabetes, and some forms of cancer (WHO 2004). The 2014 report *Health for the World's Adolescents* documents the most recent data from the GSHS and HBSC about fruit and vegetable consumption. Younger adolescents in most countries who participated in the GSHS generally did not meet the recommended guidelines of five or more servings of fruits and vegetables; in only Vanuatu did more than half of the younger adolescents report eating five or more servings a day. In Europe and North America, the HBSC does not measure number of servings, but just whether adolescents ate fruits or vegetables every day in the past month, and only one country, Belgium, reported more than half of adolescents eat at least one serving of fruits and vegetables or just vegetables per day. Girls were slightly more likely than boys to have eaten fruits and vegetables every day in most countries. Despite the low levels of meeting the guidelines, there are some encouraging signs of improving trends. In two-thirds of the countries in Europe and North America, the percentage of youth who ate fruits daily has significantly increased since 2001, and nearly 75 % of countries showed increasing trends in daily vegetable consumption among adolescents.

Soft drinks, especially sugar-sweetened beverages, are popular with adolescents, but they contribute to overweight and obesity and increase the risk for type II diabetes (Malik et al. 2006, 2010). The GSHS does not ask about soft drink consumption, so the only multi-country data available are for Europe and North America. In these countries, about 1 in 4 adolescents drank at least one soft drink daily, although the rates range from a high of 49 % among boys in England, to only 3 % among girls in Finland. Trends are improving. At least two-thirds of the countries reported declines since 2001 in the percentage of adolescents who drank one or more soft drinks per day.

Moderate or vigorous physical activity has a key role in preventing overweight and obesity, diabetes, and cardiovascular disease (Ekelund et al. 2012), and promoting emotional health among adolescents (Smith et al. 2011). WHO guidelines recommend at least 60 min per day of moderate physical activity, or 30 min per day of vigorous physical activity for adolescents (WHO 2010). Most adolescents in the GSHS and HBSC countries who asked about physical activity did not reach the recommended daily level. Boys tended to be more active than girls, and adolescents in lower- and middle-income countries were more active than youth in high-income countries. Even so, in every country fewer than half of adolescents met the guidelines, and physical activity levels appear to decline with increasing age among teens (e.g., fewer 15-year-olds reported enough physical activity compared to 13-year-olds in their country).

The trends for this important health behavior in high-income countries, which have been monitoring physical activity over the past decade or longer, also raise some concern. Among countries that participated in the HBSC, nearly every country showed declines in the percentage of youth who met the physical activity guidelines. In every country, fewer than one in five of the 15-year-old girls reported achieving the recommended daily amount of moderate or vigorous physical activity, and in all but seven countries, fewer than 25 % of boys reported the recommended daily amounts.

Monitoring Healthy Growth: Underweight and Obesity

Underweight and obesity are health conditions, not behaviors, but they contribute to health issues in adolescence and into adulthood. Underweight is defined in the WHO guidelines as a body mass index (BMI) at or below two standard deviations from the mean BMI for age and sex (Onis et al. 2007). Underweight remains an important health risk for a significant portion of younger adolescents, both because of its contribution to mortality and its relationship with iron deficiency anemia, a leading contributor to DALYs lost among adolescents. There were 47 countries that measured height and weight among adolescents in the GSHS, and in at least 10 of these countries, 10 % or more of boys and girls were underweight. Most of the countries with this high prevalence of underweight were in the African or Southeast Asian regions.

Obesity is a risk factor for cardiovascular diseases and diabetes, and with increasing rates of obesity among adults observed worldwide, it has become a key condition for health systems to monitor and to address during adolescence (Patton et al. 2011). For adolescents, obesity is defined in the WHO growth charts as a BMI at or beyond two standard deviations from the mean BMI for age and sex (Onis et al. 2007). There were 56 countries in the GSHS in which adolescents' heights and weights were measured. Based on this data, there are some regional differences in the prevalence of obesity. African countries and Southeast Asian countries reported the lowest percentage of obesity among both younger and older adolescents, but there is wide variation within regions, as well as a growing issue of obesity in some countries that still have significant levels of underweight adolescents. In 14 of the countries that participated in the GSHS, more than 10 % of boys were obese, as were girls in nine countries. High rates of obesity were measured in the Western Pacific countries for boys in Niue and the Cook Islands (40 and 29 % respectively), while for girls it was also Cook Islands and Tonga (19 % for both). Similarly, high rates of obesity were reported among adolescents in the Middle Eastern countries. The HBSC assessed height and weight by self-report, which can be less accurate than actual measurement. Among all of the countries in the HBSC, only the USA reported 10 % or higher prevalence of obesity among boys, and 9 % among 15-year-old girls.

Health Inequities Within Countries: Monitoring the Health of Marginalized Youth

Although national surveys can monitor the health of the majority of the population, there may be subpopulations that are harder to reach who experience significant health disparities compared to their peers in the general population. This could include, for example, homeless and street-involved youth, immigrants and refugees, and youth from particular ethnic minority populations within a country who are marginalized. Indigenous youth in many countries have documented health disparities (Blair et al. 2005; Clark et al. 2011; Tsuruda et al. 2012; Ning and Wilson 2012). Other groups that have shown persistent health disparities in many countries around the world include lesbian, gay, bisexual, transgender, and queer (LGBTQ) adolescents (Saewyc 2011).

To the extent that adolescents in these groups may not be regularly attending school or living in family households where they can be surveyed, their health issues may remain hidden. Even when they are part of the surveyed population, if surveys do not routinely ask questions about their ethnocultural background, indigenous status, and sexual orientation, for example, then it is difficult to track their health disparities over time compared to the majority population, or to notice improvements or declines in health status within their group. Ensuring health for all adolescents requires identifying and monitoring the health of

groups that are marginalized within a society and may experience health disparities.

References

Blair, E. M., Zubrick, S. R., & Cox, A. H. (2005). The western Australian aboriginal child health survey: Findings to date on adolescents. *Medical Journal of Australia, 183*(8), 433.

Clark, T. C., Robinson, E., Crengle, S., Fleming, T., Ameratunga, S., Denny, S. J., …, Saewyc, E. (2011). Risk and protective factors for suicide attempt among indigenous Māori youth in New Zealand: The role of family connection. *Journal of Aboriginal Health, 7*(1), 16–31.

Clifton, D., & Hervish, A. (2013). *The world's youth: 2013 data sheet*. Washington, DC: Population Reference Bureau.

Eaton, D. K., Kann, L., Kinchen, S., Shanklin, S., Flint, K. H., Hawkins, J. …, Whittle, L. (2012). Youth risk behavior surveillance-United States, 2011. *Morbidity and Mortality Weekly Report. Surveillance Summaries*, *61*(4), 1–162.

Ekelund, U., Luan, J. A., Sherar, L. B., Esliger, D. W., Griew, P., Cooper, A., & International Children's Accelerometry Database (ICAD) Collaborators. (2012). Moderate to vigorous physical activity and sedentary time and cardiometabolic risk factors in children and adolescents. *JAMA, 307*(7). doi:10.1001/jama.2012.156

Giesbrecht, N., Cukler, N., & Steeves, D. (2011). Collateral damage from alcohol: Implications of second-hand effects of drinking for populations. *Addiction, 105*(10), 1225–1323.

Hall, W., & Degenhardt, L. (2009). Adverse health effects of non-medical cannabis use. *The Lancet, 374*, 1383–1391.

Hibell, B., Guttormsson, U., Ahlström, S., Balakireva, O., Bjarnason, T., Kokkevi, A., et al. (2009). *The 2007 ESPAD report. Substance use among students in 35 European countries.* The Swedish Council for Information on Alcohol and Other Drugs, Stockholm, Sweden.

Hu, M. C., Davies, M., & Kandel, D. B. (2006). Epidemiology and correlates of daily smoking and nicotine dependence among young adults in the United States. *American Journal of Public Health, 96*(2), 299–308.

Kokkevi, A., Rotsika, V., Arapaki, A., & Richardson, C. (2012). Adolescents' self-reported suicide attempts, self-harm thoughts and their correlates across 17 European countries. *Journal of Child Psychology and Psychiatry, 53*(4), 381–389.

Luk, J. W., Wang, J., & Simons-Morton, B. G. (2010). Bullying victimization and substance use among US adolescents: Mediation by depression. *Prevention Science, 11*, 355–359.

Malik, V. S., Popkin, B. M., Bray, G. A., Després, J. P., Willett, W. C., & Hu, F. B. (2010). Sugar-sweetened beverages and risk of metabolic syndrome and type 2 diabetes: A meta-analysis. *Diabetes Care, 33*(11), 2477–2483.

Malik, V. S., Schulze, M. B., & Hu, F. B. (2006). Intake of sugar-sweetened beverages and weight gain: A systematic review. *American Journal of Clinical Nutrition, 84*(2), 274–288.

Ning, A., & Wilson, K. (2012). A research review: Exploring the health of Canada's aboriginal youth. *International Journal of Circumpolar Health, 71*. doi:10.3402/ijch.v71i0.18497

Onis, M. D., Onyango, A. W., Borghi, E., Siyam, A., Nishida, C., & Siekmann, J. (2007). Development of a WHO growth reference for school-aged children and adolescents. *Bulletin of the World Health Organization, 85*(9), 660–667.

Patton, G. C. (2012). Health of the world's adolescents: A synthesis of internationally comparable data. *The Lancet, 379*, 1665–1675.

Patton, G. C., Coffey, C., Carlin, J. B., Sawyer, S. M., Williams, J., Olsson, C. A., et al. (2011). Overweight and obesity between adolescence and young adulthood: A 10-year prospective cohort study. *Journal of Adolescent Health, 48*(3), 275–280.

Patton, G. C., Coffey, C., Sawyer, S. M., Viner, R., …, Mathers, C. D. (2009). Global patterns of mortality in young people: A systematic analysis of population health data. *The Lancet, 374,* 881–892.

Robinson, M., Dwyer-Lindgren, L., Thomson, B., …, Murray, C. J. (2014). Smoking prevalence and cigarette consumption in 187 countries, 1980–2012. *Journal of the American Medical Association*, *311*(2), 183–192. doi:10.1001/jama.2013.284692

Saewyc, E. M. (2011). Research on adolescent sexual orientation: Development, health disparities, stigma and resilience. *Journal of Research on Adolescence, 21*(1), 256–272.

Smith, A., Poon, C., Stewart, D., Hoogeveen, C., Saewyc, E., & the McCreary Centre Society. (2011). *Making the right connections: Promoting positive mental health among BC youth*. Vancouver, BC: McCreary Centre Society. Retrieved from www.mcs.bc.ca

Smith, A., Stewart, D., Poon, C., Peled, M., & Saewyc, E. (2014). From Hastings to Haida Gwaii: Highlights of the 2013 British Columbia Adolescent Health Survey. Vancouver, Canada: McCreary Centre Society. Retrieved from www.mcs.bc.ca

Tsuruda, S., Hoogeveen, C., Smith, A., Poon, C., Saewyc, E., & the McCreary Centre Society. (2012). *Raven's children III: Aboriginal youth health in BC*. Vancouver, BC: McCreary Centre Society. Retrieved from www.mcs.bc.ca

United Nations. (2015). *The millennium development goals report 2015*. New York: Author. Retrieved from http://www.endpoverty2015.org/wpcontent/uploads/2015/07/MDG%202015.pdf

United Nations Population Fund. (2012). Bali global youth forum declaration. In *International Conference*

on Population and Development Beyond 2014. New York, NY: Author. Retrieved from http://icpdbeyond2014.org/uploads/browser/files/bali_global_youth_forum_declaration_final_edoc_v3-2.pdf

Viner, R., Coffey, C., Mathers, C., Bloem, P., Costello, A., Santelli, J., et al. (2011). 50-year mortality trends in children and young people: A study of 50 low-income, middle-income, and high-income countries. *The Lancet, 377,* 1162–1174.

Winsper, C., Lereya, T., Zanarini, M., & Wolke, D. (2012). Involvement in bullying and suicide-related behavior at 11 years: A prospective birth cohort study. *Journal of the American Academy of Child and Adolescent Psychiatry, 51*(3), 271–282.

World Health Assembly. (2011). *Youth health and risks*. Sixty-fourth World Health Assembly. Agenda Item 13.16. WHA64.28. Retrieved from http://apps.who.int/gb/ebwha/pdf_files/WHA64/A64_R28-en.pdf

World Health Organization. (2004). *Fruit and vegetables for health: Report of a joint FAO/WHO workshop*, 1–3 September, Kobe, Japan. www.who.int/dietphysicalactivity/publications/fruit_vegetables_report.pdf

World Health Organization. (2010). *Global recommendations on physical activity for health*. Geneva: Author. Retrieved from http://www.who.int/dietphysicalactivity/pa/en/

World Health Organization. (2014). *Health for the world's adolescents: A second chance in the second decade.* Geneva: Author. Retrieved from http://apps.who.int/adolescent/second-decade/

Deconstructing Adolescence

2

Annulla Linders

> In the view of postmodern constructionists, literature, scientific studies, and other written text are but narratives, nothing more than descriptions that "focus chatter about an unknowable external world; a type of psychobabble", which is used as confirmation of truth in the struggle over who dominates whom (Soulé 1996).

Introduction

Hardly a day goes by without a news story featuring teenagers being in trouble or causing trouble. They wreck cars, vandalize property, use and abuse drugs and alcohol, get themselves pregnant, spread STDs, drop out of high school, and pressure each other to do stupid and sometimes dangerous things. They are, in a sense, both a tribe apart (Hersch 1998) and an abandoned generation (Giroux 2003), both risk-takers (Bell and Bell 1993) and at risk (Capuzzi and Gross 2008), both rebellious (Lebrun 2011) and perilous (Newton 1995), and we—the grownups—simultaneously fear them and fear for them.

In this chapter, I expose another impediment to adolescent health. The impediment is our functional construct of adolescence as a period of development, and as a social category. I analyze adolescence as a social category to show how the category itself, along with all its occupants, has turned adolescence into a perpetual social problem. What this means, in practice, is that adolescents—the people who occupy the category—are subject to extensive monitoring and regulation, are the targets of numerous programs and initiatives, and are effectively prevented from leaving the category until they are of age. That is, in order for adolescence to be conceptualized as a social problem it must first be recognized as a distinct period of human development that is different in fundamental ways from both childhood and adulthood. It also means that the category is self-reinforcing both in the sense that it provides an interpretive lens through which to understand youth behavior and in that it propels social arrangements that continuously reconstruct the period.

There is a vast literature addressing both the unique characteristics of adolescents and the unique social arrangements that guide their lives. One of the most recurrent themes in this literature is related to the challenges involved in the transition from the comforts and dependency of childhood to the responsibilities and demands of adult life. This transition, scholars have shown, is marked by confusion, experimentation, mistakes, dangers, and conflict. Designated as a time of "storm and stress" more than a century ago (Hall 1904), the idea of adolescence as a troublesome period and adolescents as constitutionally but temporarily irresponsible is by now firmly rooted in social arrangements, including a compulsory

A. Linders (✉)
Sociology, University of Cincinnati, 1001 Crosley Tower, Cincinnati, OH 45221-0037, USA
e-mail: annulla.linders@uc.edu

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_2

educational system designed to simultaneously prepare teens for the future and warehouse them while they are waiting to enter adult life (Buchmann 1989). Additionally, a separate system of criminal justice was built on the assumption that children and teenagers are essentially incapable of adult culpability and hence must be constrained and punished in different ways (Krisberg 2005). Moreover, a maze of rules and regulations confront teenagers wherever they go, telling them what they must and must not do and where they can and cannot go; some of those regulations pull them back toward childhood (e.g., regulation of sexuality), whereas others push them toward adulthood (e.g., being tried as adults). This regulatory framework constitutes a vast landscape of constraints and opportunities that have cemented an image of adolescents as forever teetering on the brink of chaos *because* they are adolescents and also ensures that they have little choice but to reconfirm this image through their actions. In short, then, adolescence is a social problem because we have made it so.

Although conceptualized as a time period that applies to all teenagers and affects all teenagers in the same way, there are good reasons for arguing that the category itself is both raced and gendered in ways that influence how particular teenagers are viewed and experience their teenage years. Moreover, and from a global perspective, although the category is construed as universal from a socio-biological perspective, the realities of teen life across the globe suggest that the conception of adolescence as a distinct phase in the life course is deeply embedded in social and cultural practices of the global north. Nonetheless, the forces of globalization—political, cultural, economic, and social—have begun to put pressure on the nations of the global south to adopt the kinds of practices and regulations regarding teenagers that facilitated the construction of youth as a distinct social category in the global north. In this paper, however, and following much of the scholarship of youth life, I focus on developments in the global north, especially the USA.

Why Are Adolescents the Way They Are?

While there is at least some scholarly agreement about what distinguishing features are characteristic of adolescence, there is extensive disagreement concerning the origins of these features. Here, I first present a brief overview of the socio-biological theories that dominate scholarship in the area and then develop a critique of them with the help of theories that view adolescence as a socially constructed period.

Adolescence as a Natural Stage in the Life Course

Drawing on the works of Hall (1904) and Erikson (1968), developmental psychologists view adolescence as a natural stage in the life course, beginning at puberty and ending at maturity, characterized by physiological and psychological development. Inspired by evolutionary theories, early students of adolescence theorized that life course development could be understood as a form of recapitulation, where each stage in the development of an individual recapitulates the development of the species as a whole (Lesko 2001). Building on Freud, Erikson (1968) elaborated the notion of developmental psychosocial stages to include the entire life course, even though his theorizing focused primarily on adolescence. Later theorists have further developed adult stages, with a special emphasis on the midlife crisis (Levinson 1978). From a developmental perspective, in other words, the urge to develop is built into the body itself. The question of exactly where the developmental urge sits in the body has been subject to intense scholarly scrutiny, and tentative answers have ranged from hormones to DNA. Less tentative is the conclusion that it is chronological age that triggers the developmental stages. This does not mean that social factors have no role in developmental theories, only that they are viewed as facilitators or hindrances of an otherwise natural process. In

so far as development is tied to chronological age, in other words, deviations from the normal path are viewed as potentially problematic.

The primary developmental task or challenge associated with the adolescent period is the establishment of an identity. As all developmental tasks, this one too is characterized by crisis. The assumption is that the establishment of an adult identity is preceded by an intense period of confusion and experimentation that compels the adolescent to shed the vestiges of childhood and assemble an identity that will take him/her into adulthood (Lesko 2001). And, it is precisely the assumptions about this developmental stage that have given rise to both the social arrangements that organize teen life and the perceptions of teenagers that accompany these arrangements. The conflation of risk and development in socio-biological theories, in other words, serves to simultaneously naturalize adolescent confusion and justify the social control measures that organize teen life. If it is developmentally necessary for adolescents to engage in some risk-taking behaviors (Irwin 1993), then it follows that we ought to arrange social life in such a way that young people can work through their developmental crisis in as safe and protected a way as possible. In contrast, social constructionist theories maintain, as I discuss below, that the troubles of adolescence are essentially caused by the social arrangements designed to protect them from their own confusion and the adult world from the fallout of adolescent risk-taking. From this perspective, the problems ascribed to adolescents lose much of their assumed naturalness and instead demand that a new approach, which abandons the assumption that the trouble of adolescents is inherent in their development age–rather than a result of the social arrangements that organize their lives (Gaines 1998; Vadeboncoeur 2005).

Adolescence as a Social Construction

Sociologists and anthropologists, drawing on cross-cultural and historical theories of youth, for the most part reject the biological underpinnings of stage theories and instead view adolescence as a social stage (Coleman 1974), a social construction (Lesko 2001), or an invention (Baxter 2008; Berger 1965; Chinn 2009; Fasick 1994). What these and other scholars argue is that adolescence, far from being a natural stage in the life course, represents a social period during which those who occupy it are essentially sequestered from adult life and held in abeyance in institutionally designated places—primary among them the school system—until the adult world deems them ready to move on with their lives. Although there have obviously always been young people, the recognition of youth as a distinct species and the designation of adolescence as a separate stage in the life course are a fairly recent phenomenon (Buchmann 1989; Côté and Allahar 1996; Hine 1999), its emergence facilitated by a number of social, cultural, and institutional changes beginning in the late nineteenth and taking root in the twentieth century, including changes related to the institutions of family, work, science, and, especially, education. Perhaps the most important impact of compulsory education on social life in general, and on the emergence of adolescence as a social problem particularly, is the institutional separation of young people from much of the adult world. The school system is not only a social space carved out for young people, but also an age-graded set of material structures that channel the movements of adolescents and guide their activities in both positive (do this, go there) and negative (do not do this, do not go there) ways. In this sense, the system of education itself is part of the explanation for why adolescence has become a social problem (Crosnoe 2011).

From a sociological perspective, then, meanings associated with age are viewed as socially constructed and the accumulation of meanings around particular age categories is approached as a social process that varies extensively across time and place (Ariés 1962; Karp and Yoels 1982; Lesko 2001; Sommerville 1990). From this perspective, the emergence of age-specific and sequential meaning bundles is both a cause and a consequence of age-grading practices (Coleman 1974). And the very idea of a biologically driven

life course development is a particularly important part of the process whereby life stages have become naturalized. It is for this reason that some observers insist that we abandon the notion of adolescence, a term that designates socio-biological development, and instead adopt the term teenager-hood, which designates a socially constructed period (Danesi 1994).

Although a distinct period in and of itself, teenager-hood is also a transition period that captures, and is meant to bridge, "the distinction between mature, rational adults and immature, irrational children" (Heywood 2010, p. 359). In this sense, young people are somehow "unfinished" (Vadeboncoeur and Stevens 2005). As I discuss further below, this means that the lives of adolescents are circumscribed in such a way that it is difficult for them to avoid getting into trouble. Moreover, because they are more or less expected to mess up, when they do, their status as teenagers provides a readily available explanation; that is, the adult world assumes that teens mess up *because* they are teens. In this way, adolescence is a distinct lens through which teenagers are viewed, understood, and judged. And yet, even though it provides a distinct and fairly narrow view that impacts all teenagers, it is nonetheless a lens that is deeply entangled in other social statuses, including especially gender, race, and class (Cohen 1999). In other words, while all teens are affected by age-related expectations, constraints, and opportunities, understandings and consequences of their actions are inevitably filtered through the other social locations they inhabit.

No Longer Children, Not Yet Adults

Teens are distinguished from both children and adults in numerous ways, including legally, institutionally, and culturally. However, insofar as adolescence serves as a bridge of sorts between childhood and adulthood, the two heads of that bridge are neither firmly nor stably anchored in social life. Although chronological age is used across the institutional landscape as a marker of progress toward adulthood, taken as a whole the markers provide inconsistent cues. That is, teens encounter numerous mixed signals as they go about their daily lives and the period itself is stretching both downwards into childhood—the notion of tweens (Cook and Kaiser 2004) captures this development—and upwards into adulthood, which is captured by concepts such as "emergent" adulthood (Arnett and Taber 1994; Arnett 2000) and "arrested" adulthood (Calcutt 1998; Côté 2000).

The institutional landscape in the USA and elsewhere is filled with age-related laws and regulations concerning any number of social practices, including voting, working, driving, buying alcohol and cigarettes, having sex, getting married, schooling, access to particular spaces, being outside at particular times a day, being executed. Not only do such laws and regulations give inconsistent cues to teens concerning the progress they are making toward adulthood, but they can also vary from time to time and place to place. Take voting, for example; this is perhaps the clearest marker of the transition to adulthood in that the right to vote signals adult citizenship. In the USA, a Constitutional Amendment (the 26th) lowered the voting age from 21 to 18 in 1971. This change was driven in large part by the conflicts surrounding the war in Vietnam, where young men deemed too young to vote but old enough to die for their country perished by the thousands. A similar debate drove the Supreme Court's ruling in 2005 (*Roper v. Simmons*) that held that people who were minors (persons under 18) when they committed a crime were not eligible for the death penalty. In other social domains, however, people who are officially adults (18) are still prevented from doing what older adults can do (buying alcohol and tobacco, for example) and can also be legally discriminated against in various settings (required to pay a higher price for car insurance, for example). Regulations regarding sexual activity, similarly, have changed quite drastically since the nineteenth century, with the age of consent steadily moving upwards (from 10–13 years to 16–18 years). Not only does age of consent vary from state to state, but the conditions under which minor can have sex with each other, or

non-minors can have sex with minors, also vary, which means that a relationship that is legal in one state can be illegal in another. Patterns such as these both contribute to and are affected by the image of adolescence as a treacherous period characterized by confusion and contradictory expectations. A the core of this treachery is an insoluble tension between images of youths as, on the one hand, needing help and protection as they move through the period (teens are troubled) and, on the other hand, as causing so much trouble along the way that the adult world needs protection from them (teens as troublesome).

Contradictory Expectations: Troubled and Troublesome

Regardless of theoretical perspective, scholars from a range of disciplines agree that the transition between childhood and adulthood is particularly precarious and this is so because the psychological, social, and legal demands on children and adults are so vastly different. During the transition period between these two major life stages young people are supposed to shed the dependency of childhood and emerge as fully responsible adults at the other end. In some respects, the surrounding social arrangements facilitate the transition, but in other cases they complicate and confuse it.

The notion of "youth at risk" perfectly captures the precariousness of the transition from childhood to adulthood. Although some youths are clearly more "at risk" than others, the concept nonetheless rests on the assumption that all young people are potentially vulnerable to the pitfalls of adolescence (Dryfoos 2000; Lerner and Ohannessian 1999; Wolfe et al. 2006). As long as the focus remains on the young people themselves; however, the structural arrangements that are responsible for much of the confusion recede into the background (Davis 1999). That is, as long as young people are viewed as inherently prone to risky behavior, the simple observation that they do engage in risky behavior requires no explanation at all; rather, it is excessive and self-destructive risk-taking that becomes the target of both scholarly studies and policy interventions (Irwin 1993).

Even in the best of circumstances, youth as a social transition period is typically viewed as treacherous. There is by now extensive evidence that the organization of youth life facilitates the kind of risk-taking and self-destructive behavior that has spurned the notion of youth at risk (Lerner and Ohannessian 1999; Wolfe et al. 2006). Moreover, scholars who focus on the organization of youth life point to the many ways in which society itself generates risks for the young by hindering rather than facilitating the transition to adulthood (Dryfoos 2000) and/or not supporting young people enough (Mortimer and Larson 2002). More critical observers refer to an outright abandonment of the young (Giroux 2003) and point to the many ways in which the adult world uses the young as scapegoats for its own failures to solve the problems of society (Males 1996). Taken together, then, observers differ in terms of where they locate the risk—in precarious development or in precarious social arrangements—but they typically share the conclusion that youth is a particularly treacherous time.

Yet, there is also evidence to suggest that the particular perils we have come to identify with youth are more likely to affect the children of the white middle-class than poor children of color (Currie 2005; Kenny 2000). In this sense, the trouble of adolescence is like a malaise of modern privileged life. This does not mean, however, that less privileged teenagers are somehow exempt from the dilemmas of youth. On the contrary, they have fewer opportunities to take advantage of the freedoms, privileges, and exemptions that come with adolescence and hence are at greater risk of carrying the burdens acquired during adolescence into adulthood. From this perspective, then, the children of the disadvantaged are doubly at risk; they are more vulnerable to the dangers of youth but also less protected by their youth. Yet, no matter how serious the liabilities facing youth in the wealthy nations of the global north, they pale in comparison with the difficulties of growing up amidst poverty, environmental depletion, and violent

conflict. The recent efforts by global forces—economic, cultural, health, governmental—to extend the western notion of adolescence to all parts of the world, therefore, have brought particular challenges to youth of the global south. As of yet, however, we know relatively little about these developments (Jensen and Arnett 2012; Larson 2002).

Adolescence as a Social Problem

In a book published almost 20 years ago, Mike Males addressed a series of myths concerning the troublesomeness of adolescents and concluded that adults were waging a war on its young people (Males 1996). Focusing on one problem area at a time, Males used available statistics to demonstrate not only that adults were worse than kids in most categories of analysis—they drink more, use more drugs, and are more violent—but also that it is poverty, not genetic makeup, that explains variations in youth exposure to and engagement with risky and deviant behaviors. Over the past 20 years, youth involvement in criminal behavior has fairly drastically declined. According to data from the FBI Uniform Crime Reports, teenage arrests for violent crimes dropped more than 50 % from the early 1990s to the early 2010s. Overall, teenagers were less likely than the two youngest adult groups (18–24 and 25–34) to be arrested for violent crimes, a pattern that has held for the past half century (https://www.youthfacts.org/?attachment_id=224). Data on drug arrests, also from the FBI Uniform Crime Reports, show a similar pattern: There has been a sharp decline in teen arrests since the early 1990s, but not in adult arrests, and teenagers are arrested at a much lower rate than the two youngest adult age groups (18–24 and 25–34). (https://www.youthfacts.org/?attachment_id=228). The decline in youth crime, alongside crime for everyone, is evident in all areas, but the distinction between teenagers and adults is not always as clear as in the above examples. What is clear, however, is that it is in the youngest *adult* category (18–24) that crime rates are the highest, even though the rates in that age group too have declined markedly. This group of adults is now routinely referred to as "emerging adults" in the vast literature on adolescence and youth that is grounded in a developmental perspective (Arnett 2000). Objectively speaking, then, it would seem that adolescents (those under 18) are less of a problem today than they were 20 years ago. But such a conclusion does not fit the evidence concerning increased regulation and monitoring of young people; in a sense, "to be a child is to be under surveillance" (Steeves and Jones 2010, p. 187).

The analysis below is designed to illustrate these points and is organized around a series of recurrent themes in both the debate over and the literature on the problems of youth: the criminalization of children and youth, sex and pregnancy, drugs and alcohol, and the commercialization of youth identity. These themes capture in various ways how it is that young people have ended up as social problems. They describe the kinds of activities youth engage in and bring to the forefront the particular kind of adult anxiety that results in mixed signals for young people—these signals simultaneously push teenagers in the direction of adulthood and pull them back toward childhood. Taken together, they point to what Coté and Allahar (1996) refer to as the "liabilities of youth." And yet, as endemic as they are, these and other problems remain construed as fixable at the individual or group level; that is, all sorts of interventions to alleviate the troubles of youth target the immediate circumstances of their lives and involve giving teens the tools to leave those circumstances behind. As a result, the structural features that shape and organize the period we call adolescence recede into the background and remain largely unaffected by policy initiatives designed to help individual youths overcome obstacles in their way and get on the right path toward adulthood. Moreover, and more importantly for the purposes of this paper, this also means that the links between the social period itself and the problems it generates for those who occupy it are effectively concealed. In short, if the root cause of the many problems associated with adolescence is caused by the period itself, then the

ambition to eliminate the problems of youth without changing the contours of adolescent life is doomed to fail.

The Criminalization of Children and Youth

The organization of youth life in contemporary society rests on the assumption that young people are not ready for adult responsibilities. We keep them in school to train and prepare them for adult life; we try to protect them from danger by various age regulations pertaining to work, sex, drugs, etc., and we typically exempt them from full adult responsibility in their encounters with the legal system. In so doing, we not only construct the social circumstances that propel so many young people in the direction of crime, delinquency, and violence—even though adult perceptions of youth violence are greatly exaggerated (Males 1999; Zimring 1998)—but we also subject youth to extensive monitoring. And this monitoring keeps generating the data that inform evaluations of how well or poorly young people manage the transition to adulthood. However, as long as there is no generally agreed upon threshold for what constitutes a non-problematic pattern of youth transgressions, any data, even data showing that teens are less destructive than adults, can be brought to bear on the problem of youth. It is for this reason that concerns over youth delinquency play such an important part in the construction of adolescence as a social problem (Spencer 2011).

Most young people break the law at some point during their adolescent years, but only relatively few get entangled in the criminal justice system (Cullen and Wright 2002). More recently, however, scholars have noted a trend toward a more punitive and preventative approach to juvenile transgressions (Stevens and Morash 2015). To some observers, this new trend amounts to the criminalization of childhood (Hirschfield and Celinska 2011; Parker et al. 2014). What this means most obviously is that behaviors, which in the past were viewed as minor infractions are now treated as criminal conduct. More important for the purpose of this paper is to take note of the increased monitoring and surveillance that is part of the criminalization of youth (Irwin et al. 2013; Simmons 2009). More and more children have to go through metal detectors to get to school, are met by armed guards as they enter the school grounds, are subject to video surveillance wherever they go, and are faced with a growing number of rules and regulations concerning the kinds of clothes they can wear to school (prohibitions ranging from long black trench coats to bare midriffs), what kind of bags they can transport their books in (e.g., requirement that bags are see-through), what kind of hair styles they can sport, and so on. Although the surveillance of the young is especially pronounced in schools (Kupchik 2010; Monahan and Torres 2010), it also spills over into other institutional contexts and spaces (Fine et al. 2003; Fisk 2014; Rich 2012; Steeves and Jones 2010). More generally, the relentless monitoring of youth life in contemporary times both confirms and contributes to the notion of adolescence as a social problem. In this sense, the monitoring itself produces the very problems that it keeps generating evidence of (Kamp 2005; Foucault 1977).

Nonetheless, although affecting all young people at some level, the consequences of these processes for teenagers are vastly different depending on social location—poor, black and brown children are at much higher risks of getting entangled in the criminal justice system which in turn hampers their chances of living satisfying and productive adult lives (Simmons 2009). As William Chambliss (1973) demonstrated more than 40 years ago in his famous essay, the Saints and the Roughnecks, it is *perceptions* of youth delinquents, not the quality of the delinquency, that determine adult responses. Such perceptions, research has demonstrated, are deeply affected by not only age but also the various other social statuses people occupy, primary among them class, gender, and race (Beckett et al. 2006; Farmer 2010). This means that similar activities are understood differently depending on who engages in them. And research has consistently shown that brown and

black youth, both inside and outside school, are much more likely to be perceived as dangerous and hence subject to more monitoring and policing, more surveillance, more arrests, harsher punishments, and any number of other justice-related disparities (Davenport et al. 2011; Pettit and Western 2004; Simmons 2009; Wakefield and Uggen 2010).

Despite the fact that the educational system in many ways serves as the antidote to the criminal justice system—education is the way out of crime—the analysis in this section has pointed to the entanglement of the two institutions. Not only do they rely on similar surveillance technology and increasingly operate on the same principles (e.g., zero tolerance), but they also collude in the production of educational failures that feeds the prison industry (Simmons 2009).

In short, it is difficult to arrive at a conclusion other than that the system that produces failures as predictably as it produces successes is designed to do just this (Kozol 1967, 1991). According to the National Center for Education Statistics (2014), the overall US high school graduation rate in 2012 surpassed 80 %, but the rates varied extensively across social groups, with Asians/Pacific Islanders at the top (93 %), followed by whites (85 %), Latinos (76 %) and African Americans (68 %). These numbers capture one of the most entrenched dilemmas associated with the educational system: It keeps generating an underclass of high school dropouts (Fordham 1996).

Given the structural features of the educational system, in other words, it quite effectively reproduces larger patterns of inequality and, in so doing, ensures the continued presence of sufficient numbers of poorly educated people to, on the one hand, fill the growing number of precarious jobs and, on the other hand, ensure a steady stream of bodies to sustain the prison-industrial complex (Davis 2003; Wilson 2014). In this way, the criminalization of childhood has effectively shored up adolescence as a social problem even as teen criminality has declined, and it has done so in a way that subjects all adolescents to measures of social control but only get a fairly small portion of teens overall into serious trouble.

Too Much (Unsafe and Unmarried) Sex

Adult anxiety over teenage sexuality is of long standing. As with other aspects of the adolescent problem, the issue is filled with tensions and contradictions. At the same time as teenage sexuality is discouraged, even criminalized, young people, especially girls, are commercially sexualized. At the same time as fewer and fewer children and young people are exposed to comprehensive sex education, they are increasingly compelled in the direction of sexual experimentation by the culture they partake in. The result is a landscape filled with mixed signals, opportunities, and pitfalls that teens for the most part have to navigate on their own (Thompson 1996). The adult world has essentially abdicated its responsibility by insisting that the best solution to the problems of teenage sexuality is that young people refrain from sex altogether even as it bombards them with sexual messages and makes it difficult for them to avoid some of the pitfalls associated with sex.

The sexual component of the social problem of adolescence comprises a bundle of different practices and experiences related to sex, including poor contraceptive practices, pregnancy, teenage parenting, sexually transmitted diseases, and sexual violence. It is not so, however, that teenagers have more sex than adults or are engaged in more risky sex than adults (Males 1996); rather, their sexuality receive more public attention, more scrutiny, and engender more anxiety. At the heart of the matter is the simple fact that teenagers are sexual beings that both engage in sex themselves and provoke sexual desire in others.

Of the sex-related problems, teenage pregnancy occupies as special position as a social problem in its own right (Murcott 1980). According to the Office of Adolescent Health, the teenage birth rate in the USA has steadily

declined for the past two decades, from more than 60 (in 1991) to under 30 (in 2013) births for every 1000 adolescent girls (U.S. Department of Health & Human Services 2015). Despite this marked decline, the US teen birth rate is still significantly higher than in all other nations in the global north. There is extensive variation across different social groups, however, with the rate in 2010 ranging from about 24 for white girls, to just over 50 for black girls, and more than 55 for Hispanic girls (Kost and Henshaw 2014). Such variations point to the many ways in which the circumstances of teen life impact both the choices teens have and the decisions they make regarding sex and pregnancy (Garcia 2012; Thompson 1996). Yet, as a social problem, teenage pregnancy ensnares all teens in adult concerns over their sexual lives.

What is it about teenagers' getting pregnant and giving birth that warrants a social problem designation? Research has shown that the problem has less to do with pregnancy and more to do with the fact that so many teenagers are unmarried/single when they give birth (Luker 1996; Davis 1989; Vinovskis 1988). And unmarried teen parents are considered problematic for any number of reasons, ranging from moral concerns around teen sexuality to claims that single under-educated young women are dooming both themselves and their children to a life of poverty (Edin and Kefalas 2005; Linders and Bogard 2014). Because it is only women who can get pregnant, they are the primary targets for social interventions, with the result that girls' sexuality is controlled much more stringently than boys' (Nathanson 1991). Taken together, both scholarship and policy making share the basic assumption that teenage sexuality is a source of concern and hence an appropriate target for adult intervention and monitoring. When it comes to actual adolescent sexual activity, however, it appears less affected by adult efforts at managing it than one might think, at least in some respects—in both Europe and North America the average age at which young people start sexual activity has remained fairly stable—at around 17 years—for the past half century (Dillon and Cherry 2014).

The point I want to make here is not to deny that sexuality is a treacherous field for teenagers, but instead to emphasize the ways in which the problems of teenage sexuality are linked at a fundamental level to the very notion of adolescence itself. In short, it is precisely because of the assumptions and institutional arrangements that have given rise to a separate social location for teenagers that *teenage* sexuality as a distinct social problem apart from adult sexuality has taken shape. What this means, in essence, is that although aspects of teenage sexuality can be tweaked with policy making, the problem of teenage sexuality itself is insoluble.

Drugs and Alcohol

Alongside sexuality, consumption of drugs and alcohol is one of the greatest concerns that adults have for youths. Just like with sexuality, the rate at which young people consume drugs and alcohol, even though much lower than adult rates (Males 1996), stands as unequivocal evidence of the failure of prohibition (Danesi 2003). Nonetheless, adolescent drug and alcohol use is carefully monitored and school-aged children are subject to any number of anti-drug initiatives and messages. In addition to the risks associated directly with the abuse of drugs and alcohol, adolescent drug and alcohol use is also linked to a number of other concerns; in this sense drugs and alcohol are proxies of other problematic teen behavior, such as sex, violence, and school failure (Wolfe et al. 2006).

As with other aspects of the adolescent problem, however, adult concerns have less to do with the magnitude of actual use/abuse than with the fact that the risk is ever-present. After all, the use of drugs among teenagers has declined steadily over the past decade and an increasing number of adolescents do not use any drugs at all. According to the National Institute of Drug Abuse (NIDA), adolescent alcohol and drug use is on the decline. From 2009 to 2014, the proportion of high school students who used alcohol decline significantly in each age category by about 5–6 % points (NIDA 2015). Use of illegal

drugs, similarly, has declined from its peak in the late 1990s, but more recently the use of some drugs, especially marijuana, has stabilized (Ibid). Taken together, though, the vast majority of high school students do not report using drugs on a regular basis. So, from an objective position, the problem seems overdrawn. And yet, it remains a major preoccupation of adult caretakers. For example, Ohio has just adopted a new law that requires schools in the state to "teach children about the dangers of prescription painkillers, a leading gateway drug to heroin abuse" (Recovery Society 2015).

I am not suggesting that drugs are not dangerous or that we should stop worrying about teenagers who get caught up in a cycle of dangerous drug use. There can be no doubt that drugs can cause serious damage, not only to individual teens and their families, but also to entire communities devastated by drugs like heroin. Rather, it is to observe how both the underlying conditions of the problem—the contours of youth drug use—and the conceptions of the problem—as a particular youth problem—are caught up in the very organization of adolescent life. Despite the assumption that youth is a period consumed by the preparations for adult life, it is in many ways a period of abeyance, a waiting period during which young people are locked out from adulthood and corralled into age-segregated environments. In short, we have placed a "generation on hold" (Côté and Allahar 1996). It is not surprising therefore that one of the responses by youth is to seek excitements and distractions in drugs and alcohol (Currie 2005). And when they do, it is also not surprising that adult observers filter adolescent use of drugs and alcohol through the conception of youth as a period of confusion marked by bad choices (Griffin 1993). In this sense, adolescent abuse of drugs and alcohol come to confirm the conception of youth that justify keeping young people sequestered rather than encouraging questions about how the very organization of youth life not only might facilitate irresponsible youth behavior but also keep generating adult concerns for the well-being of the young. Moreover, the conceptualization of drug use as a particular risk for youth discourages analyses of the *similarities* between youth and adult behaviors.

Identity for Sale: Subcultures and the Commodification of Teenagers

When Marcel Danesi (2003) titled his book about today's youth, *My Son is an Alien*, he captured a widespread adult anxiety around teenagers and the life they lead; they dress oddly, they listen to incomprehensible music, they have strange friends, they develop a bad attitude, they spend an inordinate amount of time in front of their computers/tablets/phones, they acquire new (bad) habits and (questionable) tastes, and they no longer tell their parents where they go or what they do. It is like they wake up one day and start acting like completely different persons than the ones their parents/siblings/neighbors/relatives/teachers thought they knew. Insofar as these trends take on an organized character among teenagers, they sometimes give rise to more widespread moral panics about youth life (Cohen 1993; Springhall 1998; Thiel-Stern 2014). The problem here does not primarily originate in the kinds of physical dangers that accompany some of the other adult concerns around youth—associated with drugs and violence, for example—but instead is linked to what adults perceive as the fragility and susceptibility of adolescent identity. Primary targets of these concerns are peer groups, media and advertising, popular culture, and various other purveyors of youth identity (Quart 2003; Sternheimer 2003). From an adult perspective, it can seem as if young people are pressured into taking on new identities by the nonstop onslaught of popular culture (cf. Moje and van Helden 2005; Oliker and Krolikowski 2001), which now, in the context of internet and social media, never let up its potential influence (Thiel-Stern 2014).

There are numerous reasons why popular culture directed at youth causes adult concerns, but primary among them are worries that the development of identity somehow gets thwarted by the manipulation of the pop culture industry that has grown up around teenagers (cf. Chin 2001). Although teenagers by and large are poor

compared to adults, whatever disposable resources they have are usually much more discretionary than those possessed by adults (who have fixed bills and recurrent financial obligations). One consequence of this is that teenagers have become a serious target of marketers who produce an endless number of goods and services with the purchasing power of teens in mind. Marketers not only draw on youth culture to sell their products but also infiltrate youth life to stir up demand, by giving popular kids clothes and other products to wear and display, for example (Quart 2003). They also find ingenious ways of penetrating the social media environment with product endorsements and thinly veiled marketing pitches. From a parental perspective, this can result in seemingly incomprehensible and forever fleeting demands for particular products. But the problem I am getting at here is deeper than the mere materialism of youth life—which still pales in comparison with adult life—in that it reveals deep seated adult anxiety over the very instability of youth life which can translate into possibilities of major challenges to the status quo (Giroux 2003).

The social structure of school and other institutions dominated by adolescents is not quite following the social structure of adult life. In this sense, the spaces dominated by teens allow for—encourage—the development of unique youth cultures (Milner 2004; Haenfler 2010; Larkin 1979). These cultures—or subcultures—are unique not simply in terms of content but also, and more importantly, in the ways in which they stretch and cross, and sometimes violate, the social boundaries that characterize and guide adult life. These boundary crossings—across economic, racial, religious, cultural, and residential lines—are in themselves cause for worry among adults and, especially when coupled with more or less dangerous activities (e.g., drugs, alcohol), provide insights into adult anxieties over teen life. Moreover, although teen institutions, especially education, are deeply entangled in the social processes that reproduce patterns of advantage and disadvantage, it is still so that teenagers are not quite yet as implicated in the larger systems of rewards and penalties that affect adult life. This means most obviously that young people are in a position to establish their own status systems and to decide on what basis to confer and withhold respect. It also means that young people because they are less committed to and/or less entangled in adult life are considerably more volatile from a sociopolitical perspective. And that can be very frightening to adults (Giroux 2003). The main point I am making here, though, is that this very volatility can be productively understood as a consequence of the organization of youth life without recourse to theories of psychosocial development.

Conclusion

The aim of this chapter has been to, first, demonstrate that adolescence has emerged as a social problem in contemporary life and, second, to identify some of the key components of that problem. My argument overall is that the problematic aspects of adolescence are not fixable with programs, interventions, and tweaks to individual lives. Rather, they are built into the very DNA of teenage life. Hence, the only way to solve the problem of adolescence is to get rid of it as we know it.

This is obviously not a feasible policy option. The period we call youth is deeply engrained in the fabric of social life and therefore cannot easily be dissolved or even majorly elaborated. Nonetheless, it is possible to ease the transition between childhood and adulthood, both individually and collectively. To do so effectively requires that we abandon the fiction that young people, en masse, are incapable of taking responsibility for their own lives. There is quite a bit of evidence to back up the claim that teenagers not only can but also want to take a more active part in social life; that is, young people have a much better understanding of the conditions of their lives than adults usually give them credit for (Chin 2001; Loeb 1995; Sternheimer 2003; Vaedeboncoeur and Stevens 2005). This is extremely important if the goal is to improve adolescent health. This analysis suggests, at the very least, that young people must be consulted

in a meaningful way about how their lives are organized. At a more fundamental level, however, we must come to terms with and confront the many ways in which the structuring of adolescence both inspire and stifle challenges to the healthcare sector and status quo. This means, in the end, that the solution to improving adolescence health does not start with adolescents but instead with adults. They have the power and resources to reorganize adolescent life, but perhaps not the political will.

References

Ariès, P. (1962). *Centuries of childhood: A social history of family life*. New York, NY: Vintage Books.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469–480.

Arnett, J. J., & Taber, S. (1994). Adolescence terminable and interminable: When does adolescence end? *Journal of Youth and Adolescence, 23*(5), 517–537.

Baxter, K. (2008). *The modern age: Turn-of-the-century American culture and the invention of adolescence*. Tuscaloosa, AL: The University of Alabama Press.

Beckett, K., Nyrop, K., & Pfingst, L. (2006). Race, drugs, and policing: Understanding disparities in drug delivery arrests. *Criminology, 44*(1), 105–137.

Bell, N. J., & Bell, R. W. (Eds.). (1993). *Adolescent risk taking*. Newbury Park, CA: Sage Publications.

Berger, B. M. (1965). *Teen-agers are an American invention* (pp. 12–13). New York, NY: Times Magazine.

Buchmann, M. (1989). *The script of life in modern society*. Chicago, IL: The University of Chicago Press.

Calcutt, A. (1998). *Arrested development: Pop culture and the erosion of adulthood*. London, UK: Cassell.

Capuzzi, D., & Gross, D. R. (Eds.). (2008). *Youth at risk: A prevention resource for counselors, teachers, and parents*. Alexandria, VA: American Counseling Association.

Chambliss, W. J. (1973). The saints and the roughnecks. *Society, 11*(1), 24–31.

Chin, E. (2001). *Purchasing power: Black kids and American consumer culture*. Minneapolis, MN: University of Minnesota Press.

Chinn, S. (2009). *Inventing modern adolescence: The children of immigrants in turn-of-the-century America*. New Brunswick, NJ: Rutgers University Press.

Cohen, P. (1999). *Rethinking the youth question: Education, labour and cultural studies*. Durham, NC: Duke University Press.

Cohen, S. (1993). *Folk devils and moral panics*: *The creation of the mods and rockers*. Oxford, UK: Basil Blackwell (Original work published 1972).

Coleman, J. (1974). *Youth: Transition to adulthood*. Report of the Panel on Youth of the President's Science Advisory Committee. Chicago, IL: The University of Chicago Press.

Cook, D. T., & Kaiser, S. B. (2004). Betwixt and be tween: Age ambiguity and the sexualization, of the female consuming subject. *Journal of Consumer Culture, 4*(2), 203–227.

Côté, J. E. (2000). *Arrested adulthood: The changing nature of maturity and identity*. New York, NY: New York University Press.

Côté, J. E., & Allahar, A. L. (1996). *Generation on hold: Coming of age in the late twentieth century*. New York, NY: New York University Press.

Crosnoe, R. (2011). *Fitting in, standing out: Navigating the social challenges of high school to get an education*. New York, NY: Cambridge University Press.

Cullen, F. T., & Wright, J. P. (2002). Criminal justice in the lives of American adolescents: Choosing the future. In T. M. Jeylan & R. W. Larson (Eds.), *The changing adolescent experience: Societal trends and the transition to adulthood* (pp. 88–128). New York, NY: Cambridge University Press.

Currie, E. (2005). *The road to whatever: Middle-class culture and the crisis of adolescence*. New York, NY: Metropolitan Books.

Danesi, M. (1994). *Cool: The signs and meanings of adolescence*. Toronto: University of Toronto Press.

Danesi, M. (2003). *My son is an alien: A cultural portrait of today's youth*. Lanham, MD: Rowman & Littlefield Publishers.

Davenport, C., Soule, S. A., & Armstrong, D. A. (2011). Protesting while black? The differential policing of American activism, 1960–1990. *American Sociological Review, 76*(1), 152–178.

Davis, A. Y. (2003). *Are prisons obsolete?*. New York, NY: Seven Stories Press.

Davis, N. J. (1999). *Youth crisis: Growing up in the high-risk society*. Westport, CT: Praeger.

Davis, R. A. (1989). Teenage pregnancy: A theoretical analysis of a social problem. *Adolescence, 24*(93), 19–28.

Dillon, M. E., & Cherry, A. L. (2014). An international perspective on adolescent pregnancy. In A. L. Cherry & M. E. Dillon (Eds.), *International handbook of adolescent pregnancy* (pp. 1–38).

Dryfoos, J. G. (2000). *Safe passage: Making it through adolescence in a risky society*. New York, NY: Oxford University Press.

Edin, K., & Kefalas, M. (2005). *Promises i can keep: Why poor women put motherhood before marriage*. Berkeley, CA: University of California Press.

Erikson, E. H. (1968). *Identity: Youth and crisis*. New York, NY: W. W. Norton & Company.

Farmer, S. (2010). Criminality of black youth in inner-city schools: 'Moral panic', moral imagination, and moral formation. *Race Ethnicity and Education, 13*(3), 367–381.

Fasick, F. A. (1994). On the invention of adolescence. *Journal of Early Adolescence, 14*(1), 6–23.

Fine, M., Freudenberg, N., Payne, Y., Perkins, T., Smith, K., & Wanzer, K. (2003). 'Anything can happen with police around': Urban youth evaluate strategies of surveillance in public places. *Journal of Social Issues, 59*(1), 141–158.

Fisk, N. (2014). 'When no one is hearing them swear'—Youth safety and the pedagogy of surveillance. *Surveillance and Society, 12*(4), 566–580.

Fordham, C. (1996). *Blacked out: Dilemmas of race, identity, and success at capital high*. Chicago IL: The University of Chicago Press.

Foucault, M. (1977). *Discipline and punish: The birth of the prison*. New York, NY: Vintage Books.

Gaines, D. (1998). *Teenage wasteland: Suburbia's dead end kids*. Chicago, IL: The University of Chicago Press.

Garcia, L. (2012). *Respect yourself, protect yourself: Latina girls and sexual identity*. New York, NY: New York University Press.

Giroux, H. A. (2003). *The abandoned generation: Democracy beyond the culture of fear*. New York, NY: Palgrave Macmillan.

Griffin, C. (1993). *Representations of youth: The study of youth and adolescence in Britain and America*. Cambridge, UK: Polity Press.

Haenfler, R. (2010). *Goths, gamers, and grrrls: Deviance and youth subcultures*. New York, NY: Oxford University Press.

Hall, S. G. (1904). *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education*. New York, NY: D. Appleton and Company.

Hersch, P. (1998). *A tribe apart: A journey into the heart of American adolescence*. New York, NY: Ballantine Books.

Heywood, C. (2010). Centuries of childhood: An anniversary—And an epitaph? *Journal of the History of Childhood and Youth, 3*(3), 343–365.

Hine, T. (1999). *The rise and fall of the American teenager*. New York, NY: Avon Books Inc.

Hirschfield, P. J., & Celinska, K. (2011). Beyond fear: Sociological perspectives of the criminalization of school discipline. *Sociology Compass, 5*(1), 1–12.

Irwin, C. E. (1993). Adolescence and risk taking: How are they related? In N. J. Bell & R. W. Bell (Eds.), *Adolescent risk taking*. Newbury Park, CA: Sage Publications.

Irwin, K., Davidson, J., & Hall-Sanchez, A. (2013). The race to punish in American schools: Class and race predictors of punitive school-crime control. *Critical Criminology, 21*(1), 47–71.

Jensen, L. A., & Arnett, J. J. (2012). Going global: New pathways for adolescents and emerging adults in a changing world. *Journal of Social Issues, 68*(3), 473–492.

Kamp, A. (2005). On track to what? *Youth Studies Australia, 24*(2), 39–44.

Karp, D. A., & Yoels, W. C. (1982). *Experiencing the life cycle: A social psychology of aging*. Springfield, IL: C. C. Thomas.

Kenny, L. D. (2000). *Daughters of suburbia: Growing up white, middle class, and female*. New Brunswick, NJ: Rutgers University Press.

Kost, K., & Henshaw, S. (2014). *U.S. teenage pregnancies, births and abortions, 2011: National and state trends by age, race and ethnicity*. New York, NY: Guttmacher Institute.

Kozol, J. (1967). *Death at an early age: The destruction of the hearts and minds of Negro children in the Boston public schools*. Boston, MA: Houghton Mifflin.

Kozol, J. (1991). *Savage inequalities: Children in America's schools*. New York, NY: Crown Publishers.

Krisberg, B. (2005). *Juvenile justice: Redeeming our children*. Thousand Oaks, CA: Sage.

Kupchik, A. (2010). *Homeroom security: School discipline in an age of fear*. New York, NY: New York University Press.

Larkin, R. W. (1979). *Suburban youth in cultural crisis*. New York, NY: Oxford University Press.

Larson, R. W. (2002). Globalization, societal change, and new technologies: What they mean for the future of adolescence. *Journal for Research on Adolescence, 12*(1), 1–30.

Lebrun, M. (2011). *Rebels in society: The perils of adolescence*. Lanham, MD: Rowman & Littlefield.

Lerner, R. M., & Ohannessian, C. M. (Eds.). (1999). *Risks and problem behaviors in adolescence*. New York, NY: Garland Publishing Inc.

Lesko, N. (2001). *Act your age! A cultural construction of adolescence*. New York, NY: Routledge Falmer.

Levinson, D. J. (1978). *The season's of a man's life*. New York, NY: Knopf.

Linders, A., & Bogard, C. (2014). Teenage pregnancy as a social problem: A comparison of Sweden and the United States. In A. L. Cherry & M. E. Dillon (Eds.), *International handbook of adolescent pregnancy: Medical, psychosocial, and public health responses* (pp. 147–157). New York, NY: Springer.

Loeb, P. R. (1995). *Generation at the crossroads: Apathy and action on the American campus*. New Brunswick, NJ: Rutgers University Press.

Luker, K. (1996). *Dubious conceptions: The politics of teenage pregnancy*. Cambridge: Harvard University Press.

Males, M. A. (1996). *The scapegoat generation: America's war on adolescents*. Monroe, ME: Common Courage Press.

Males, M. A. (1999). *Framing youth: 10 myths about the next generation*. Monroe, ME: Common Courage Press.

Milner, M. (2004). *Freaks, geeks, and cool kids: American teenagers, schools, and the culture of consumption*. New York, NY: Routledge.

Moje, E. B., & van Helden, C. (2005). Doing popular culture: Troubling discourses about youth. In J. A. Vadeboncoeur & L. P. Stevens (Eds.), *Re/constructing the adolescent: Signs, symbols, and body* (pp. 211–247). New York, NY: Peter Lang.

Monahan, T., & Torres, R. D. (Eds.). (2010). *Schools under surveillance: Cultures of control in public education*. New Brunswick, NJ: Rutgers University Press.

Mortimer, J. T., & Larson, R. W. (Eds.). (2002). *The changing adolescent experience: Societal trends and the transition to adulthood*. New York, NY: Cambridge University Press.

Murcott, A. (1980). The social construction of teenage pregnancy: A problem in the ideologies of childhood and reproduction. *Sociology of Health and Illness, 2*(1), 1–23.

Nathanson, C. A. (1991). *Dangerous passage: The social control of sexuality in women's adolescence*. Philadelphia, PA: Temple University Press.

National Center for Education Statistics. (2014). *Public high school graduation rates*. Washington D.C.: Author. Retrieved from http://nces.ed.gov/programs/coe/indicator_coi.asp

Newton, M. (1995). *Adolescence: Guiding youth through the perilous ordeal*. New York, NY: Norton.

NIDA. (2015). *Drug facts: High school and youth trends.* Washington D.C.: National Institute of Drug Abuse. Retrieved from http://www.drugabuse.gov/publications/drugfacts/high-school-youth-trends

Oliker, M. A., & Krolikowski, W. P. (Eds.). (2001). *Images of youth: Popular culture as educational ideology*. New York, NY: Peter Lang.

Parker, M. M., Glenn, J. W., & Turner, A. (2014). Criminalizing childhood: The social development of juvenile crime in a rural North Carolina school. *Social Development Issues, 36*(2), 35–52.

Pettit, B., & Western, B. (2004). Mass imprisonment and the life course: Race and class inequality in U.S. incarceration. *American Sociological Review, 69*(2), 151–169.

Quart, A. (2003). *Branded: The buying and selling of teenagers*. Cambridge, MA: Perseus Publishing.

Recovery Society. (2015, January 5). *New law requires Ohio schools to teach about dangers of prescriptions drugs.* Columbus, OH: Author. Retrieved from http://recoverysociety.org/new-law-requires-ohio-schools-teach-prescription-drugs-dangers/

Rich, E. (2012). Beyond school boundaries: New health imperatives, families, and schools. *Discourse Studies in the Cultural Politics of Education, 33*(5), 635–654.

Simmons, L. (2009). End of the line: Tracing racial inequality from school to prison. *Race/Ethnicity, 2*(2), 215–241.

Sommerville, C. J. (1990). *The rise and fall of childhood*. New York, NY: Vintage Books.

Soulé, M. E. (1996). *Reinventing nature?: Responses to close postmodern deconstruction*. Washington D.C.: Island Press.

Spencer, J. W. (2011). *The paradox of youth violence*. Boulder, CO: Lynne Rienner Publishers.

Springhall, J. (1998). *Youth, popular culture and moral panics: Penny gaffs to gangsta-rap, 1830-1996*. New York, NY, St.: Martin's Press.

Steeves, V., & Jones, O. (2010). Surveillance, children and childhood. *Surveillance and Society, 7*(3/4), 187–191.

Sternheimer, K. (2003). *It's not the media: The truth about pop culture's influence on children*. Boulder, CO: Westview Press.

Stevens, T., & Morash, M. (2015). Racial/ethnic disparities in boys' probability of arrest and court actions in 1980 and 2000: The disproportionate impact of getting tough on crime. *Youth Violence and Juvenile Justice, 13*(1), 77–95.

Thiel-Stern, S. (2014). *From the dance hall to facebook: Teen girls, mass media, and moral panic in the United States, 1905–2010*. Amherst, MA: University of Massachusetts Press.

Thompson, S. (1996). *Going all the way: Teenage girls' tales of sex, romance, and pregnancy*. New York, NY: Hill and Wang.

U.S. Department of Health & Human Services. (2015). *Office of adolescent health. Trends in teen pregnancy and childbearing*. Washington D.C.: Author. Retrieved from http://www.hhs.gov/ash/oah/adolescent-health-topics/reproductive-health/teen-pregnancy/trends.html#_ftn2

Vadeboncoeur J. A. (2005). Naturalised, restricted, packaged, and sold: Reifying the fictions of adolescent and adolescence. In J. A. Vadeboncoeur & L. P. Stevens (Eds.), *Re/constructing the adolescent: Signs, symbols, and body* (pp. 1–24). New York, NY: Peter Lang.

Vadeboncoeur, J. A., & Stevens, L. P. (Eds.). (2005). *Re/constructing the adolescent: Signs, symbols, and body* (pp. 1–24). New York, NY: Peter Lang.

Vinovskis, M. A. (1988). *An epidemic of adolescent pregnancy? Some historical and policy considerations*. New York, NY: Oxford University Press.

Wakefield, S., & Uggen, C. (2010). Incarceration and stratification. *Annual Review of Sociology, 76*, 387–406.

Wilson, H. (2014). Turning off the school-to-prison pipeline. *Reclaiming Children and Youth, 23*(1), 49–53.

Wolfe, D. A., Jaffe, P. G., & Crooks, C. V. (2006). *Adolescent risk behaviors: Why teens experiment and strategies to keep them safe*. New Haven, CT: Yale University Press.

Zimring, F. E. (1998). *American youth violence*. New York, NY: Oxford University Press.

Adolescent Health in Cuba

3

Mercedes Esquivel Lauzurique

The Republic of Cuba The Republic of Cuba is an archipelago of 1600 islands, islets, and cays nestled in the Caribbean Sea. Its territory is organized into fifteen provinces and a special municipality, and its capital is Havana. It has an area of 109,886 Km^2.

The total population is about 11,224,190 inhabitants (2014), with a population density of 101 inhabitants per Km^2. Some 75 % of the population reside in urban areas and 25 % in rural areas. The nearest countries are the Bahamas, Haiti, Jamaica, Mexico, and USA.

Cuba ranked 44th on the Human Development Index (HDI = 0.81) prepared by the United Nations in 2014, ranking among the top four nations in Latin America and the Caribbean together with Chile (41), Argentina (49), and Uruguay (50). These four countries have the most favorable data on human equality, gender equality, gender development, and general poverty in this region (Rebossio 2014a, b). The Netherlands ranks number 1 and the USA is ranked number 5. The HDI is an indicator of human development by country, prepared by the United Nations Development Program (UNDP) based on a statistical social indicator, which consists of three parameters: long and healthy life, education, and standard of living. All citizens of Cuba have free and universal access to all health services and education, as well as full employment and a strong system of social security and assistance.

Introduction

Adolescence is a key phase of human development. It is a period when rapid biological and psychological changes occur and affect every aspect of this stage of life. According to the World Health Organization (WHO), it corresponds to the period of life from 10 to 19 years of age and divided, in turn, as early adolescence (between 10 and 14 years of age) and late adolescence (between 15 and 19 years of age) (OPS 2014; OMS 2014a; WHO 2014; UNICEF 2011).

Generally, it is considered that adolescents are relatively healthy segment of the population; however, we must not forget that investing in the health of young people is essential to protect investments in children and to ensure the health

M.E. Lauzurique (✉)
Departamento de Crecimiento Y Desarrollo Humano, Facultad de Ciencias Médicas Julio Trigo López, Universidad de Ciencias Médicas de La Habana, La Habana, Cuba
e-mail: mesqui@infomed.sld.cu

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_3

of the future adult population. Added to this, most of the harmful habits that manifest as health problems in adulthood are acquired during adolescence, adding an avoidable financial burden on health systems (OPS 2010, 2014).

The health status of a population can be defined as "synthetic expression of the behavior of health-disease process in the community, in a particular historical moment and through the degree of equilibrium established among human beings and nature in terms of physical, mental, and social health" (Curbelo 2005). To determine a nation's or community's health status, periodic evaluations should use globally accepted indicators including demographic information on the population by age, fertility, morbidity, and mortality. Data on characteristics of growth and development, and data on people who are disabled also reflect the community's health. Thus, these health components that allow the study of the behavior of the health-disease process in a population or population group can be summarized as shown in Fig. 3.1.

The health of adolescents, in particular, is of obvious importance to the national interest. It is only possible to produce lasting changes in the lives of children, young boys and girls, and insuring investments made in the first decade of life if greater attention is focused on the second decade of life. Wellness and active participation of adolescents in their own health care are decisive from a life cycle perspective. Health, in this context, can help break the intergenerational transmission of poverty, exclusion, and discrimination (UNICEF 2011).

The adolescent population is also an important group because of their vulnerability and the intense biological, physical, psychological, and sociological changes that occur in less than a decade. Changes will determine, to a large extent, the characteristics of the adult population that will shape the country. Therefore, it is of particular interest to know the levels of the various indicators of health status.

The purpose of this chapter is to describe and analyze the state of health of the adolescent population of Cuba. As primary sources of information, we used the following:

- Mortality Database of Cuba, available in the Statistical Yearbook of the Ministry of Public Health (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015a).
- Population estimates issued by the National Office of Statistics and Information of Cuba (ONEI 2012, 2014, 2015).
- Information from Multiple Cluster Surveys (MICS) UNICEF/Ministry of Public Health. Cuba 2010/2011 and 2014 (Dirección

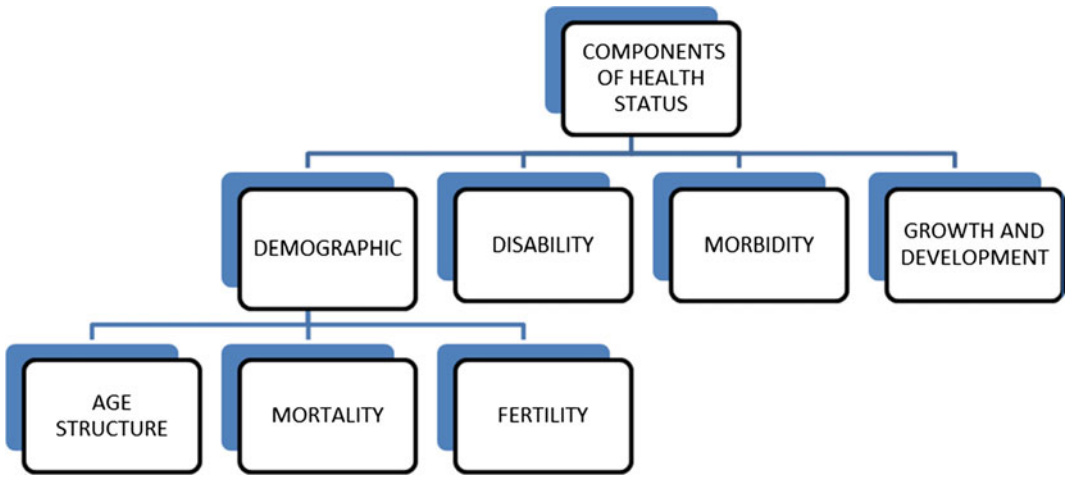


Fig. 3.1 Main components of the health status of the population. *Source* Adapted from Curbelo (2005)

Nacional de Registros Médicos y Estadísticas de Salud. Cuba. 2012, 2015a).
- III National Risk Factor Survey 2010/2011. Havana, 2014 (Bonet and Varona 2014).
- IV Database of the National Research Group of Human Growth and Development. Faculty of Medicine Julio Trigo López. University of Medical Sciences of Havana (Esquivel and González 2009, 2013; Department of Human Growth and Development 2006).

Comprehensive Health Care for Cuban Adolescents

The principles set out in the Declaration of Alma Ata of 1978 and the Ottawa Charter for Health Promotion reaffirm that health is a fundamental right of all human beings. It is a human right irrespective of race, religion, political belief, economic, or social status. Moreover, inequities in a population's health between countries and within countries are unfair and unacceptable. For its part, the United Nations Conference on Sustainable Development in 2012, in the Final Document, "The Future We Want" Rio + 20, acknowledged that governments are responsible for the health of their population (OPS/OMS 2014a). The Cuban state has worked for decades to comply with these guidelines. As a result, important goals have been achieved (Campbell and Bialek 2015), among these are:

- Cuba is among the top 20 countries in the progress toward achieving the Millennium Development Goals of the UN.
- Save the Children places Cuba as the best country in Latin America to be a mother.
- Cuba has the lowest rate of HIV in the Americas.
- The doctor–patient relationship in Cuba is among the highest in the world; 61 % of doctors are women.
- 100 % of pregnant women have more than four prenatal visits.
- The infant mortality rate in Cuba in 2014 was 4.2 and that of children under five years of age was 5.7 per thousand live births.
- Life expectancy in Cuba is 78 years.

National Health System

With the creation in the 1960s of the Ministry of Public Health and the National Health System, health care provided the Cuban people, and in particular to the adolescent population, has been radically altered from previous healthcare practice as the government guarantees free medical attention and complete access to the health services. Combining a scientific and practical approach, Cuban health care is unique, comprehensive, decentralized, and free of charge and provides preventive counseling as a general method of maintaining a healthy population. It is characterized by the intersection of community participation in the activities of the organization for public health and develops internationalism as a general principle of the Cuban society (Castro et al. 2010). In 2014, Cuba had 85,563 doctors for a rate of 76.6 per 10,000 inhabitants. Of this total, 12,842 family physicians provided 100 % of the primary level of care. The rate of Cuban nurses was 81.3 per 10,000 inhabitants. In the same year, there were 14.9 dentists per 10,000 population (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015b).

National Program for Comprehensive Health Care for Adolescents

In 2000, the National Program for Comprehensive Care for Adolescent Health of the Ministry of Public Health increased the pediatric age to 18 years of age and developed services in hospitals and primary care specifically for adolescents. Later, in 2002, the Section of Comprehensive Adolescent Health of the National Pediatrics

Group was strengthened with the creation in 2004 of the National Working Group on Childcare. The National working group expanded comprehensive health care for children and adolescence in order to cover the health and development needs of this population (Departamento Materno-Infantil y Planificación Familiar 2011; Esquivel et al. 2014).

As part of this program, Cuba has worked on the creation and development of reference centers and training for comprehensive care for this age group. Activities in different provinces have been supported by UNICEF and PAHO/WHO. A Manual of Clinical Practice for Comprehensive Care for Adolescent Health was published in 1999 (Cruz et al. 1999). The Section of Adolescence is a member of the Committee on Adolescence of the American Association of Pediatrics (ALAPE).

Indicators of Adolescent Health in Cuba

The following indicators are utilized to monitor Cuban adolescent health at the national and local levels: demographic variables, morbidity, growth and development, disability, and sexual and reproductive health.

Demographic Data

Changes in demographic variables, which may influence the relative health burden of different types of diseases, are used in planning services and programs for the health sector. Demographic information identifies the size of populations exposed to different health risks and provides data on some characteristics of these groups. This facilitates the establishment of measurable objectives, selecting the most appropriate tools and evaluating the results of programs and medical resources in general (Curbelo 2005).

While, the health-related demographic variable mortality is important, fertility is no less important, because it can be used in determining the age structure of the population; all of these elements make up demographic aspects related to health.

Population Structure by Age

Knowledge of the population structure by age group is very important for the formulation of health policies and the design of more responsive health programs. This is possible because different ages are associated with different risks and incidence of accidents, disease, and death (Curbelo 2005). The Cuban population, in 2014, totaled 11,224,190 inhabitants according to the National Bureau of Statistics and Information (ONEI 2015). Of these, 5,595,379 (49.85 %) were men and 5,628,811 (50.15 %) were women. This population is characterized by its advanced demographic transition, which is aging and stagnant population growth, two important demographic challenges. Cubans, 60 years of age and older, make up 19 % of the population. Life expectancy at birth is high but fertility rates are low, which has resulted in stagnate population growth since 1978 (Gran et al. 2013).

In 2014, the level of population replacement was low, with a birthrate of 11.3 births per thousand inhabitants. The general fertility rate was 43.2 live births per 1000 women 15–49 years of age. There was also a decreased fertility rates among younger women of childbearing age. The total fertility rate was 1.68 and the gross reproduction rate of 0.81. The sex ratio was 994 men for every 1000 women, for a discreet feminization of the population since 2012. The percentage of children born in hospitals or health institutions was 99.9 %.

According to the "Life expectancy 2011–2013" data released by the National Bureau of Statistics and Information (ONEI 2014), life expectancy at birth of the Cuban population reached 78.45 years at the end of the triennium (2011–2013). This life expectancy places Cuba among the 25 most advantaged countries in the world on this demographic indicator and represents a gain of 0.48 with respect to life expectancy in 2005–2007, when was

77.97 years. All provinces of Cuba experienced increases in life expectancy for both genders. This study shows that Cuban women have a life expectancy of 80.45 years, while life expectancy for men was 76.50 years. This life expectancy for men and women is much higher than those estimated in 2012 for the world population, which was 72.7 years for females and 68.1 years for men (OMS 2014a).

In 2014, the total number of adolescents in Cuba was estimated at 1,381,135, representing 12.3 % of the total population. By age group, adolescents between 10 and 14 years of age made up 49.3 % of the adolescent population. Those between 15 and 19 years of age made up 50.7 % of the adolescent population. By gender, 51.5 % of the adolescents are male, while 48.5 % are female (ONEI 2015). Adolescents represent a lower percentage of the population than reported for Latin America and the world (see Fig. 3.2); due to the low birthrate and aging population, adolescents make up a smaller percentage of the population today than they did decades ago (23.8 % in 1980 and 17.5 % in 1990).

Mortality

Adolescents, as a specific age group, have lower mortality rates when compared to the general population. In Cuba, in 2014, the mortality rate among adolescents was 2 per 1,000 for those 10–14 years of age, and 3 per 1000 for those 15–19 years of age. This mortality rate is much lower than that found in 2012 in the region of the Americas, which was of 7.75 per 1000 (OPS/OMS 2014a). The mortality ratio for all males and females was 1.3, similar to that reported worldwide. Of the 96,328 deaths in the Cuba in 2014, 386 occurred in this age range, representing only 0.4 % of total deaths in the country. As shown in Fig. 3.3, these figures have been declining steadily over the past decades.

Since the 1970s, the five leading causes of death in this population are similar although they have varied a little in terms of order (see Table 3.1). Accidents are the leading cause of death. In 2014 accidents accounted for 7.4 deaths per 100,000 inhabitants. This number reflects a sharply declining trend compared to previous years. The mortality rate for accidents was much higher among males (11.6 vs. 3.1 in females). Transportation accidents and motor vehicles were the most common cause of death, followed by drowning and accidental submersion.

After accidents, malignant tumors have been the second leading cause of death for this group since 2000, with a rate in 2014 of 4.2 per 100,000 inhabitants. This was followed by intentional self-inflicted injuries, which ranked second until the 1990s. Currently, intentional self-inflicted injuries rank third with a rate of 2.3 per 100,000 inhabitants. Assault has a current rate of 2.2 per 100,000 population and ranks fourth. Congenital anomalies, deformities, and chromosomal abnormalities rank fifth with a rate of 1.4 per 100,000 inhabitants in 2014.

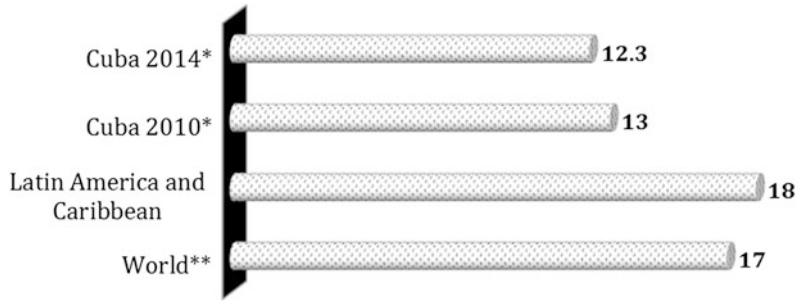


Fig. 3.2 Percentage of adolescents in Cuba, Latin America and Caribbean, and the world. *Source* *ONEI (2015). **UNICEF (2014)

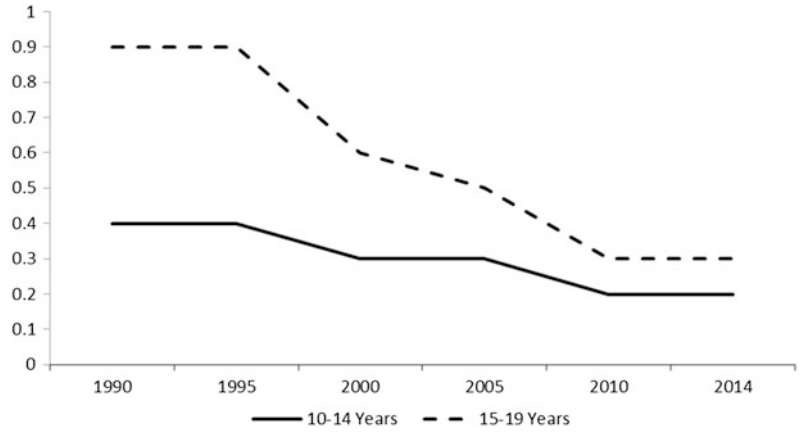


Fig. 3.3 Overall mortality among adolescents by year and age group. Cuba, 1990–2014. *Rate per 1000 inhabitants. *Source* Dirección Nacional de Registros Médicos y Estadísticas de Salud (2015a)

Table 3.1 Leading causes of death in adolescents by year (Cuba 1970–2014[a])

Cause	1970	1980	1990	2000	2010	2014
Accidents	25.3	23.8	26.4	15.8	7.7	7.4
Malignancies	6.8	6.1	6.0	5.3	4.6	4.2
Intentional self-inflicted injuries	8.0	17.0	9.6	3.7	2.9	2.3
Assault	3.1	2.4	4.8	2.1	2.0	2.2
Congenital malformations, deformities, and chromosomal abnormalities	2.5	2.0	3.6	2.3	1.3	1.4

[a]Rate per 100,000 population
Source Dirección Nacional de Registros Médicos y Estadísticas de Salud (2015a)

The three leading causes of death among adolescents worldwide are traffic injuries, HIV/AIDS, and suicide (OPS/OMS 2014b). In Cuba, injuries caused by traffic accidents and suicide are also among the leading causes of death but not HIV; as will be shown below, HIV/AIDS has a low prevalence in the country (Portal 2014).

Fertility

Fertility is the demographic variable linked to the reproduction of the population that expresses the relationship between live births occurring during a certain period of time and the number of females of childbearing age during that same period. In Cuba, the fertility rate has been very low for many years. It has remained below population replacement level for more than thirty years (CEPAL 2008).

The decline in fertility has been one of the most significant sociodemographic developments in recent years, both because of its implications in the short or medium term as a condition that has changed the age structure of the population. The consequences of the decline in fertility are of great importance to health planning. The decrease in the average number of children born to women during their reproductive years will cause a significant change in the demand for health services.

The trend in fertility plays a key role in maternal and child morbidity and mortality. In general, the reproductive health of women is partly determined by the way the health sector develops the maternal and child programs, which include family planning. During the period 2008–2011, there was a slight upward trend in fertility in Cuba. This was followed by a decline in births for all females of childbearing age, particularly among adolescents, where the

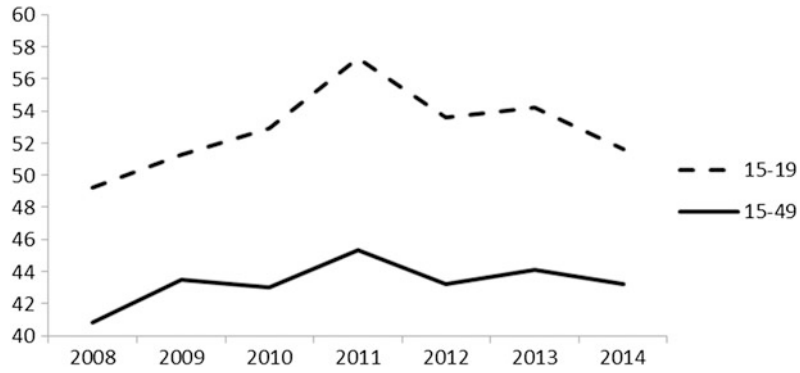


Fig. 3.4 Fertility rate among adolescent females 15–19 years of age—Cuba 2008–2014. *Rate per 1000 women. *Source* Dirección Nacional de Registros Médicos y Estadísticas de Salud (2015a)

Table 3.2 Average number of children per woman, selected countries of Latin America and Cuba: 1961, 1980, 1990, 2000, 2010

Countries	Average number of children per woman				
	1961	1980	1990	2000	2010
R. Dominican	7.49	4.42	3.47	2.89	2.58
Costa Rica	7.30	3.62	3.18	2.41	1.85
Peru	6.87	5.01	3.83	2.93	2.50
Colombia	6.80	3.99	3.10	2.64	2.10
El Salvador	6.75	5.14	3.95	2.93	2.25
Ecuador	6.72	5.06	3.67	2.95	2.48
Brazil	6.19	4.07	2.81	2.36	1.83
Chile	5.54	2.68	2.62	2.09	1.86
Cuba	4.36	1.89	1.75	1.63	1.69

Source Center for Latin American Studies ECLAC (Gran et al. 2013)

birthrate fell from 57.3 per 1000 in 2011 to 51.6 by 2014 (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015b). Figure 3.4 shows births per 1000 for Cuban women and for 15–19-year-old adolescent females. The birthrate for 15–19-year-old adolescent females is about 25 % higher than that for 15–49-year-old Cuban women. Currently, the rate of childbearing among 15–19-year-old Cuban adolescent females is lower than that reported for Latin America, which is 65 births per 1000 adolescent females aged 15–19, but slightly higher than that reported for the world (49 births per 1000 adolescent females aged 15–19 years) (OMS 2014a).

As the average number of children per woman continues to trend down in this region of the world, Cuba is not an exception. Cuba has one of the lowest birthrates among countries in Latin America (see Table 3.2).

Morbidity

Regarding morbidity, the leading causes for teenagers seeking a medical consultation are episodes of acute respiratory infections followed by acute diarrheal diseases. These are health conditions that have little impact on the mortality of adolescents. In 2014, 67,644 medical consultations for acute diarrheal diseases and 1,231,354 medical consultations for acute respiratory diseases were provided to adolescents and young people between 10 and 24 years of age. The rate for acute diarrheal diseases was 34.1 per 1000 population between 10 and 14 years of age and 28.7 per 1000 population between 15 and 24 years of age, while the rate for acute respiratory diseases was 785.5 in the group of 10–14 years of age and 447.8 in the group of young people between 15 and 24 years of age

(Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015b).

Tuberculosis is not a health problem in Cuba, even though in the course of the last decade, a slight increase in incidence was detected. The rates among adolescents are low and are below the national average. In the group of adolescents, under 15 years of age, the incidence of tuberculosis increased discreetly, with little notice, the rate increased from 0.3 per 100,000 in this age group in 1990 to 0.8 per 100,000 in 2014.

In 2014, the prevalence rate for hypertension among adolescents 10–14 years old was 1.9 per 1000. For adolescents 15–18 years old, the prevalence was higher at 25.1 per 1000. *Diabetes* among adolescents 10–14 years old was 1.5 per 1000, and it was 5.4 per 1000 for adolescents 15–18 years old. The prevalence rate of *asthma* among adolescents is relatively high. Among those adolescents 10–14 years old, the rate was 147.4 per 1000. Among those 15–18 years old, the rate was the highest for any age group in Cuba, 188.3 per 1000 (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015b).

The incidence of cancer among adolescents varies between younger and older adolescents. In 2014, those between 10 and 14 years of age had 108 per 1 million in this age group; while in the 15–19-year-old group, the incident rate was 146.9 per 1 million in this age group. Leukemia, lymphoma, and brain tumors are the most prevalent cancers in the 10–14 age group, whereas adolescents aged 15–19 most frequently present with lymphomas, carcinomas and other malignant epithelial neoplasms, bone tumors, and leukemia in that order (Directorate of Medical Records and Health Statistics 2015a).

Sexually transmitted infections (STIs) have declined since the year 2000. There has been a corresponding decline in child birth among all women. Pregnancy among girls under 14 years of age is not a problem in Cuba. HIV/AIDS among young people aged 15–24 has stabilized at a low rate. The estimated prevalence in this group is only 0.05 % (Portal 2014).

Although adolescent pregnancy and adolescent sexually transmitted infection are at low levels in Cuba, adolescent sexual activity has increased. In recent decades, just as has happened in other countries, adolescents 10–14 years of age, at least some of them, have been involved in a sexual relationship and have done so without the knowledge and understanding of the consequences of irresponsible sexual behavior.

Cuba has a National Strategic Plan for the Prevention and Control of STIs and HIV/AIDS, which has its origins in earlier strategic plans. These strategic plans are updated every five years. As the plan develops, data will be gathered from 2014 to 2018 with the goal of identifying gaps in preventative health services. Thus, since the beginning of the 1980s, when the Task Force was established, it has coordinated and organized action and prevention services to prevent and control sexually transmitted infections and especially HIV/AIDS. While basic sexual education was incorporated into primary care, a corresponding Intersectional Response Plan for Education, Prevention and Control of STIs and HIV/AIDS was developed to allow different agencies and organizations to implement concrete and specific plans for action with emphasis on education and prevention (Ministry of Public Health 2013).

These programs embody the basic principles of the Cuban strategy for the prevention and control of STIs and HIV/AIDS (i.e., intersectional participation, an interdisciplinary approach, active participation of government institutions, NGOs involvement, and the involvement of civil society at the grassroots level).

Growth and Development

Implementing periodic national anthropometric studies of the Cuban people has been an ongoing practice of the National Health System since the beginning of the 1970s. This practice is based on the recognition, by various international organizations, that anthropometric measurements are very useful for assessing the health status of the populations.

Anthropometric measurements allow researchers to evaluate health trends and

concerns in various populations. For instance, anthropometry studies have been used to assess and monitor the nutritional status of children. These measurements can be used to determine the prevalence of inadequate nutrition and whether there is a need for nutritional support. It can also be used to track progress in reaching a number of health targets and broader goals related to social equity. Given adequate nutrition and basic health care during prenatal, childhood, and during adolescence, the majority of children will experience normal growth and development (Esquivel 2013). Anthropometric measurements are used in Cuba to evaluate and monitor the health trends of children.

Physical Development

In Cuba, two national studies of growth and development of children under the age of 20 were conducted in 1972 and 1982. Furthermore, several additional studies have been carried out at the provincial level. In the city of Havana, which is the capital (and where approximately a fifth of the total population resides), five investigations have been conducted using the same anthropometric measures in 1972, 1982, 1993, 1998, and 2005. The purpose of these studies was to collect reliable information that could be compared over time. The design required specifically trained personnel to collect anthropometric measures from a representative sample by age. The measures were collected using high-precision equipment, which was rigorously calibrated. This design provided data that were comparable to data from previous studies (Department of Human Growth and Development 2006; Esquivel and González 2009; Esquivel 2013).

Among the anthropometric indicators that have been used to describe the growth of children and adolescents are the height, weight and the body mass index (BMI). In 2005, using a representative sample of adolescents, the study revealed that both sexes were, on average, 2.7 cm taller at each age group than their peers in the initial investigation of 1972. This suggests that by 2005 children were taller and reached, in greater extent, their genetic potential for longitudinal growth. The increase was higher in late adolescence (2.9 and 2.8 cm for males and females, respectively) than in early adolescence (2.5–2.6 cm). This increase in height over time has been detected in numerous investigations. The cause for the increase in the height of adolescents has been linked to improved living conditions, which makes these measures a valuable indicator of national economic and social development.

In addition, we also have growth data that go back to 1919. A Belgian anthropologist, Georges Rouma, conducted a study of school children between 7 and 13 years of age in Havana. Between 1919 and 2005, these studies show that there was an average increase in the children's height for each of the age groups of 1.2 cm per decade, for both sexes, over the last 85 years.

The average weight was also higher among adolescents in 2005 than in 1972. In absolute terms, male participants weighed, on average, 1.9 kg more than their counterpart in 1972, but in female adolescents, this figure was only 0.8 kg. During early adolescence, the average difference was 1.5 kg for boys and 0.6 kg for girls. During late adolescence, the difference was 2.4 kg and 1 kg, respectively. The smaller differences in weight among girls between 1972 and 2005 may be the result of sociocultural influences that value slenderness in girls more so than in boys.

The BMI in male adolescents were similar in both studies, while the female teens was lower (-0.4 kg/m^2 on average). In early adolescence, average difference was -0.1 and -0.3 kg/m^2. For later adolescence, the average difference was -0.02 and -0.5 kg/m^2 for boys and girls.

There is a clear trend to higher body fat values in the study of 2005 with respect to previous studies of both sexes. In males, this represented an average increase of the area of the middle third of the left arm of 1.8 cm^2 fat at each age and 2.2 cm^2 in females. In early adolescence, the numbers were 1.9 and 2.0 cm^2 in males and females and 1.7 and 2.4 cm^2 in later adolescence. This is significant because body fat values have important implications for the health of a population. In fact, this phenomenon (Esquivel and González 2010)

is reflected in the morbidity of this population which shows marked increases in the prevalence of patients treated for chronic non-communicable diseases such as it noted above.

The age of menarche in Havana, which in part requires adequate weight (using the status quo method), was 12.64 years in 1972 and 12.5 years in the study of 2005.

Nutritional Status

The nutritional status of Cuban adolescents has been evaluated in a number of studies. They include highlights of the studies on growth and development at the national and provincial level, and the Third National Risk Factor Survey 2010/2011. In these research studies, it has been shown the low rate of malnutrition and the increasing prevalence of overweight and obesity in this age group. In the case of the National Risk Factor Survey (see Table 3.3), information includes the group of 15–19 years and 20–24 years, that is, late adolescence and the period known as youth (Bonet and Varona 2014).

Additionally, according to the Third National Survey of Risk Factors (2013), although there has been an improvement compared to previous surveys, there is still a significant percentage of the population dealing with nutritional issues. One such issue is eating habits that are harmful to one's health. Insufficient fruit and vegetable consumption and the excessive use of saturated fats result in aggregate health problems. Another health issue is the lack of regular physical activity. Based on the findings from the International Physical Activity Questionnaire (IPAQ) only 76.9 % of young people between 15 and 24 were rated as active, 5.7 % were classified as irregularly active, and 17.3 % were classified as sedentary (Bonet and Varona 2014).

The most common measure of malnutrition is *chronic energy deficiency*. This measure is defined as 3 grades based on BMI: Grade I (mild) is a BMI between 17.5 and 18.4, Grade II (moderate) is a BMI between 16.0 and 17.4, and Grade III (severe) is a BMI 16.0 or lower. A BMI of 18.5 is considered normal. Table 3.4 shows *chronic energy deficiency* and the percent of Cuban adolescents who are overweight.

Disability

According to the International Classification of Functioning, Disability and Health—adopted as a conceptual framework for the World Report on Disability prepared by the World Health Organization and the World Bank in 2011—disability is a generic term for impairments, which includes deficiencies, limitations of activity, and participation restrictions. Disability is the interaction between individuals with a health condition and personal and environmental factors (OMS 2011).

Generally, it is estimated that worldwide between 110 million (2.2 %) and 190 million (3.8 %) people 15 years of age and older are living with a significant disability. In Cuba, several sources, such as data from the National Census 2012 of the National Statistics Office and the Psychosocial and Clinical-Genetic Study of people with disabilities in Cuba, estimate the

Table 3.3 Nutritional status of adolescents from different provinces

Nutritional status[a]	Havana, 2005 (%)		Guantanamo, 2002 (%)	
	10–14	15–19	10–14	15–19
Malnutrition	3.0	2.1	3.3	1.0
Thin	6.5	7.6	9.9	9.1
Normal	72.6	76.9	79.7	82.8
Overweight	11.3	8.0	5.3	5.2
Obese	6.6	5.4	1.8	1.9

[a]*Source* Provincial Growth and Development Studies. Havana, Guantánamo 2005 and 2002

Table 3.4 Nutritional status of adolescents and youth, Cuba 2010/2011[a]

Nutritional status	Cuba, 2010/2011 15–24 years of age (%)
Grade I (mild) chronic energy deficiency	1.8
Grade II (moderate) chronic energy deficiency	3.3
Grade III (severe) chronic energy deficiency	12.8
Acceptable	63.1
Overweight	14.9
Obese	3.1
Extremely obese	1.1
Total	100

[a]*Source* Third National Risk Factor Survey, 2013

prevalence of adolescents between 10 and 19 years with a disability between 2.4 and 3 % (ONEI 2012; Cobas 2011). This latest study showed that the most common forms of disability are intellectual, physical-motor, and visual impairment.

Sexual and Reproductive Health

Most people become sexually active during adolescence. Contraceptive use at this age is usually low and this contributes to health risks from sexually transmitted infections (including HIV), as well as abortions. Adolescent pregnancy can also affect the health of newborns. Some aspects of adolescent sexual and reproductive health behavior that have serious consequences are the issues of early sexual initiation, early marriage, the onset of contraceptive use, and comprehensive knowledge about STIs and HIV/AIDS.

Early Sexual Behavior and Childbearing

Sexual activity and childbearing at an early age involve significant risks, both for the teen mother and her newborn. Relevant indicators of early childbearing (see Table 3.5) among Cuban adolescents have been obtained from the Multiple Indicator Cluster Surveys (MICS) implemented in Cuba in 2010 and 2014 under the program developed by the United Nations Fund for Children (UNICEF) to provide internationally comparable, statistically rigorous data on the situation of children and women. These surveys show that the percentage of girls under 15 years of age with a live birth has remained the same for decades. The birthrate is 0.2 %, a very low rate. According to UNICEF, in developing countries 3 % of girls under 15 have given birth and 19 % became pregnant before age 18 years (Williamson 2013). In the most recent survey, these indicators continue to suggest positive behavior changes among Cuban adolescents (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2012, 2015a).

Early Marriage

One of indicators of adolescent health that is commonly used is the number of adolescents married or in union before the age of 15. In Cuba, between 2010 and 2014 the percentage of girls who were married before the age of 15 did not significantly change. There was a decline, however, in the percentage of all adolescent girls who were married or in a marital union. Additionally, as shown in Table 3.6, the number of married adolescent males is much lower compared to females (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2012, 2015a). When the percentage of Cuban

Table 3.5 Reproductive process in adolescents 15–19 years of age (Cuba 2010 and 2014)

Reproductive Process	2010 (%)	2014 (%)
Girls who had a live birth	10.8	6.7
Girls who are pregnant—their first child	3.4	2.3
Girls are sexually active	14.1	8.9
Girls who had a live birth before age 15	0.2	0.2

Source Dirección Nacional de Registros Médicos y Estadísticas de Salud (2012, 2015)

Table 3.6 Early marriage among adolescents 15–19 years of age (Cuba 2010, 2014)

Early Marriage	2010 (%)	2014 (%)	
	Girls	Girls	Boys
Adolescents married before age 15	4.2	4.1	1.7
Adolescents married or in union	19.8	15.8	6.7

Source Dirección Nacional de Registros Médicos y Estadísticas de Salud (2012, 2015)

Table 3.7 Percentage of married women or some types of marital union before age 15 and 18 years in Cuba, Latin America and the Caribbean, and the world

Early marriage	Cuba, 2014[a] (%)	Latin America and Caribbean[b] (%)	World[b] (%)
Women aged 20–24 married or in some types of marital union before age 15	4.7	7	11
Women aged 20–24 married or in some types of marital union before age 18	26	29	34

[a]*Source* Dirección Nacional de Registros Médicos y Estadísticas de Salud (2015)
[b]*Source* UNICEF (2014)

adolescents girls, who are married or in a marital union, are compared to adolescent girls in Latin America, the Caribbean, and developing countries globally, Cuban adolescents girls are marrying later in life than their peers, which presages a healthy adolescent population (see Table 3.7) (UNICEF 2014).

Features of the First Union and the Onset of Sexual Relations

The average age at first marriage or union in Cuba, according to the National Fertility Survey conducted in 2009 by the National Bureau of Statistics, was 19.4 years for women and 22.2 years for men. This suggests a pattern of early marriage. The onset of sexual intercourse, however, starts earlier. The average age is 16 for men and 17 for women. In other words, the onset of sexual intercourse occurs about four years before the first marriage for men and two years earlier in women. These patterns of first marriage and sexual initiation have varied over time. Even so, the tendency is for adolescents to marry young and initiate sexual behavior at an even younger age (ONEI 2009).

This information is of considerable importance because it confirms the observation that sexual initiation occurs generally before the first marriage, probably with casual partners or during a short-term relationship. These behaviors are a major public health concern because of the severe consequences. To preserve the sexual and reproductive health of teenagers by reducing the risks of STIs, sexual education campaigns and programs are utilized.

Use of Contraceptive

The early onset of sexual activity exposes adolescents to the risks of unwanted pregnancy and abortion to interrupt the pregnancy. Too often in the context of the first sexual intercourse, contraceptive use is not always part of the plan. According to the 2009 Fertility Survey, 26 % of girls aged 15–24 did not use any method at first intercourse. In 2014, 40.1 % of girls aged 15–19 married or in union were not using any contraceptive method. Among those who did use contraception, the pills were the most popular and used by 22.9 %, male condoms were used by 19.4 %, and intrauterine device was used by

15.2 % of the teenage girls who participated in the survey (ONEI 2009; Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015a).

Comprehensive Knowledge of HIV/AIDS

While in 2010, 53.7 % of girls aged 15–19 had a comprehensive knowledge of HIV transmission, in 2014 this percentage increased to 59.2 %. The percentage of men with a comprehensive knowledge of HIV transmission in 2014 was 47.9 % (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2012, 2015a).

Protective and Risk Factors

The indicators of adolescent health analyzed in the foregoing sections share similar risk and protective factors that are interrelated and associated with a set of social determinants. These factors include living conditions, educational level, tobacco/snuff and alcohol consumption, and living with parents.

Living Conditions

Just over 75 % of Cuban adolescents reside in urban areas. When urban youth were compared to rural youth by age group and gender, there were no significant differences between the groups of 10–14 and 15–19 years of age. In addition, there were no significant differences between urban and rural youth by sex. Overall, in 2014, 94 % of the Cuban population used improved drinking water sources and 95 % made use of improved sanitation, figures well above those reported for the world and also higher than in this region of the Americas in regard to sanitation (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015a; OMS 2014a).

Educational Level

Cubans have a high level of schooling because children are required by law to attend school through the 9th grade. Education is free and the country has the facilities and qualified human resources to provide the different levels of education. Figure 3.5 shows that by age 18, more than 60 % of Cuban adolescents have acquired post-secondary education. Also noteworthy is the higher percentage of girls who acquire post-secondary education as compared to boys (ONEI 2012).

Tobacco/Snuff and Alcohol Use

About 76 % of adolescent boys and 91.5 % of girls have ever smoked cigarettes or used other snuff products. In addition, only 42.7 % of boys and 58.9 % of girls had drunk alcohol according to the results of the MICS Cuba, 2014 (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2015a). These figures are very low relative to reports from other regions of the Americas (OPS 2010).

Living with Parents

Teenagers living with their parents have great relevance for the adolescent's social integration

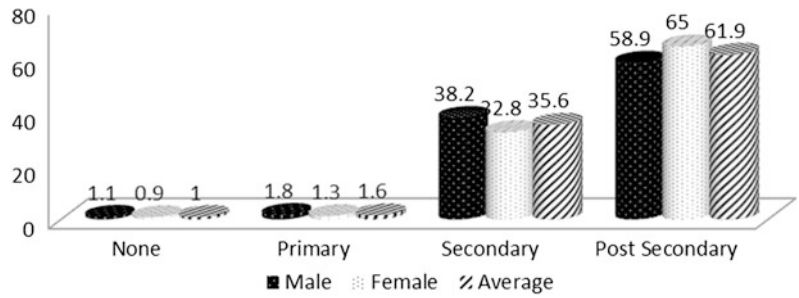


Fig. 3.5 Completed level of education at age 18 by sex. Cuba, 2012. *Source* ONEI (2012)

Table 3.8 Percentage of adolescents living with parents by age group (Cuba 2010/2011 and 2014)

Coexistence	Age group			
	10–14		15–17	
	2010	2014	2010	2014
Living with both parents	54.0	47.7	42.0	46.9
Living with mother	36.0	43.1	41.9	41.8
Living with father	2.7	2.3	2.3	2.5
Not living with any biological parent	7.0	5.8	10.9	7.6
Could not be determined	0.1	1.3	2.9	1.1

Source National Medical and Health Statistics, 2012, 2015 records

and emotional balance. In Cuba, the frequency of adolescents living with both parents, only the mother, or father, or a none relative is shown in Table 3.8. In general, over 45 % of Cuban adolescents live with both parents. Slightly over 40 % live only with their mother. Less than 10 % live with neither of their biological parents. The percentage of teens living only with their father is minimal, a little over 2 % (Dirección Nacional de Registros Médicos y Estadísticas de Salud 2012, 2015a).

In the cases of children who are orphaned, abandoned, or have no family support, the Cuban State provides social assistance for households, homes for minors without parental protection, and mixed children's programs that provide education, food, health care, and subsequently helps them integrate into society when they reach adulthood. There are laws that have been established by several legal bodies, among which is the Family Code. This code states that the main objective is to create optimal conditions for normal psychosocial development and full social integration of children and adolescents living in these children's homes (Bosh 2014; Figueredo 2015).

Conclusions

Surveys focused on the health of Cuban adolescents are very positive. Compared to their peers living in other countries, in this region of the Americas, Cuban adolescents show low rates of mortality, morbidity, and disability; a positive secular trend of physical development; low consumption of snuff and alcohol; and reduction of the fertility rate, as well as of indicators related to early reproductive process and early marriage. However, it is necessary to continue working on reducing teen pregnancy, the prevalence of overweight and adiposity and chronic diseases, and in developing campaigns to preserve sexual and reproductive health of this population. This purpose is feasible thanks to the universal and free access of the adolescents in Cuba to all health services and education and to the features of the National Health System.

References

Bonet, M., & Varona P. (2014). III National survey of risk factors and preventive activities for non-communicable diseases. Cuba 2010/2011. Havana, Cuba: Medical Sciences Publishing.

Bosh, L. (2014). *Hogares de niños y niñas sin amparo filial [Household children without parental protection]*. Retrieved from http://www.soycuba.cu/noticia/hogares-de-ninos-sin-amparo-familiar-los-18-marcan-la-diferencia

Campbell P., & Bialek R. (2015). A matter of perspective: Seeing Cuban and United States health systems through a cultural lens. *American Journal of Public Health, 105*(8), 1509–1511. doi:10.2105/AJPH.2015.302692

Castro, B. L., Cuéllar, R., Ibargollen, L., Esquivel, M., Machado, M. C., & Martínez, V. (2010). *Cuban experience in child health care*. La Habana, Cuba: Editora Política.

CEPAL. (2008). La fecundidad en América Latina: Un descenso acelerado y heterogéneo con profundas transformaciones demográficas y sociales. Observatorio demográfico Nº 5: Fecundidad. p. 11-18. Retrieved from http://www.cepal.org/publicaciones/xml/8/36498/lafecundidadod05.pdf

Cobas, M. (2011). La investigación-acción en la atención de las personas con discapacidad en las Repúblicas de

Cuba y Bolivariana de Venezuela. Tesis doctoral. Escuela Nacional de Salud Pública. La Habana, Cuba. Retrieved from http://tesis.repo.sld.cu/142/

Cruz, F., Pineda, S., Martínez, M., & Aliño, M. (1999). *Manual de Prácticas Clínicas para la Atención integral a la Salud del Adolescente*. La Habana, Cuba: MINSAP.

Curbelo, T. (2005a). *Fundamentos de Salud Pública*. La Habana, Cuba: Editorial Ciencias Médicas.

Curbelo, T., & de Salud Pública G. F. (2005). Epidemiología de las enfermedades no transmisibles y otros daños. *Editorial Ciencias Médicas pág*, 496–500.

Departamento de Crecimiento y Desarrollo Humano. (2006). *Análisis de los cambios ocurridos en el desarrollo físico y estado nutricional de los niños y jóvenes habaneros entre 1972 y 2005. Informe Final de Investigación.* Departamento de Crecimiento y Desarrollo Humano. La Habana, Cuba. Universidad de Ciencias Médicas de La Habana.

Departamento Materno-Infantil y Planificación Familiar. (2011). Programa Nacional de Salud para la Atención Integral en la Adolescencia. Cuba 2012–2017. La Habana, Cuba. Ministerio de Salud Pública.

Dirección Nacional de Registros Médicos y Estadísticas de Salud. (2012). *Cuba. Encuesta de Indicadores Múltiples por Conglomerados 2010/2011*. Informe Final. La Habana, Cuba. Ministerio de Salud Pública.

Dirección Nacional de Registros Médicos y Estadísticas de Salud. (2015a). *Cuba. Encuesta de Indicadores Múltiples por Conglomerados 2014*. Informe Final. La Habana, Cuba. Ministerio de Salud Pública.

Dirección Nacional de Registros Médicos y Estadísticas de Salud. (2015b). *Anuario estadístico 2014.* La Habana, Cuba. Ministerio de Salud Pública.

Esquivel, M. (2013). Departamento de crecimiento y desarrollo humano: más de cuatro décadas monitoreando el crecimiento de los niños cubanos. *Revista Habanera de Ciencias Médicas, 12*(1), 1–4.

Esquivel, M., Álvarez, G., Izquierdo, M. E., Martínez, D., & Tamayo, V. (2014). Well Child Care: A Comprehensive Strategy for Cuban Children and Adolescents. *MEDICC Review, 16*(1), 7–11.

Esquivel, M., & González, C. (2009). Los estudios de crecimiento y desarrollo en Cuba. *Revista Cubana of Pediatria*, *81*(Sup), 74–84.

Esquivel, M., & González, C. (2010). Excess weight and adiposity in children and adolescents in Havana, Cuba: Prevalence and trends, 1972 to 2005. *MEDICC Review, 12*(2), 13–18. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/20486409

Figueredo, O. (2015). *La Adopción de niños sin Amparo Filial, una mirada crítica desde un enfoque transdisciplinario*. Retrieved from http://www.monografias.com/trabajos101/adopcion-ninos-amparo-filial-mirada-critica-enfoque-transdisciplinario/adopcion-ninos-amparo-filial-mirada-critica-enfoque-transdisciplinario.shtml#ixzz3gq5VGQ9y

Gran, M. A., Torres, R. M., López, L. M., & Pérez, M. E. (2013). Fecundidad, anticoncepción, aborto y mortalidad materna en Cuba Fertility, contraception, abortion and maternal mortality in Cuba. *Rev Cubana Salud Pública, 39*(5), 822–835.

MINSAP. (2013). *Plan Estratégico Nacional para la prevención y el control de las ITS y el VIH/SIDA/2014-2018*. La Habana, Cuba: Ministerio de Salud Pública.

OMS. (2011). *Informe Mundial sobre la Discapacidad*. Ginebra, Suiza: Organización Mundial de la Salud.

OMS. (2014a). *Estadísticas Sanitarias Mundiales 2014*. Ginebra, Suiza. Organización Mundial de la Salud.

OMS. (2014b). *Salud para los adolescentes del mundo. Una segunda oportunidad en la segunda década [Adolescent health in the world. A second chance in the second decade]*. Retrieved from http://apps.who.int/adolescent/seconddecade/files/WHO_FWC_MCA_14.05_spa.pdf

ONEI. (2009). *Encuesta Nacional de Fecundidad. Informe de Resultados*. Retrieved from http://www.one.cu/enf.htm

ONEI. (2012). *Censo de Población y Viviendas 2012 [Population and Housing Census 2012].* Informe Nacional. Resultados Definitivos de Indicadores Seleccionados en Cuba, Provincias y Municipios. Retrieved from http://www.one.cu/informenacional2012.htm

ONEI. (2014). *La Esperanza De Vida. 2011–2013*. Retrieved from http://www.one.cu/esperanzadevida2011_2013.htm

ONEI. (2015). *Anuario Estadístico de Cuba 2014. Población [Statistical yearbook 2014 population Cuba].* Oficina Nacional de Estadísticas e Información. Retrieved from http://www.one.cu/aec2014/03%20Poblacion.pdf

OPS. (2010). *Estrategia y plan de acción regional sobre los adolescentes y los jóvenes 2010-2018*. Washington, DC: Estados Unidos de América. Organización Panamericana de la Salud.

OPS. (2014). *Temas de salud. Salud de los Adolescentes*. Retrieved from http://www.paho.org/hq/index.php?option=com_topics&view=article&id=223&Itemid=40879&lang=es

OPS/OMS. (2014a). *Plan de Acción sobre la Salud en todas las Políticas. 53.^{0} Consejo Directivo. 66.^{a} Sesión del Comité Regional de la OMS para Las Américas [Action Plan on Health in all Policies. 53.0 Board. 66th Session of the Regional Committee of WHO for the Americas]*. Washington D.C.: Estados Unidos de América. Organización Panamericana de la Salud. Retrieved from https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=PROVISIONAL+AGENDA+OF+THE+53rd+DIRECTING+COUNCIL+OF+PAHO%2C+66th+SESSION+OF+THE+REGIONAL+COMMITTEE+OF+WHO+FOR+THE+AMERICAS+pdf.

OPS/OMS. (2014b). *La OPS/OMS llama a que se preste mayor atención a la salud de los adolescentes para evitar muertes y mejorar su salud*. Retrieved from

http://www.paho.org/HQ/index.php?option=com_content&view=article&id=9579&Itemid=1926&lang=es. Fecha de acceso: Julio 30, 2015.

Rebossio, A. (2014a, July 25). *Chile and Cuba, with the largest Latin American development, according to the UN*. Retrieved from http://blogs.elpais.com/eco-americano/2014/07/chile-y-cuba-con-el-mayor-desarrollo-latinoamericano-seg%C3%BAn-la-onu.html

Portal, J. A., et al. (2014). *Informe nacional sobre los progresos realizados en la aplicación del UNGASS [National report on progress in implementing the UNGASS]*. La Habana, Cuba: Ministerio de Salud Pública.

Rebossio, A. (2014b). *Cuba entre los países con más alto nivel de desarrollo humano. En: El Economista de Cuba. EDICION ONLINE*. Publicación Digital de la Asociación Nacional de Economistas y Contadores de Cuba. Retrieved from http://www.eleconomista.cubaweb.cu/2014/nro476/desarrollo-humano.html

UNICEF. (2011). *Estado mundial de la Infancia 2011. La adolescencia: Una época de oportunidades*. New York, Estados Unidos de América. Fondo de Naciones Unidas para la Infancia.

UNICEF. (2014). *El estado mundial de la Infancia 2014 en cifras*. New York, Estados Unidos de América: Fondo de Naciones Unidas para la Infancia.

Williamson, N. (2013). *Maternidad en la niñez. Estado de la población mundial 2013*. Fondo de Naciones Unidas para la Infancia. New York, Estados Unidos de América.

WHO. (2014). *Global status report on alcohol and health, 2014*.

Adolescent Health, Development, and the Public Health Response in Japan

4

Miyuki Nagamatsu, Yukiko Hamada and Takeshi Sato

Introduction

Between 2001 and 2014, various adolescent health and health education initiatives were carried out in Japan as part of a national campaign by the Ministry of Health, Labour and Welfare called "Healthy Parents and Children 21." The present report gives an outline of adolescent health in Japan within the scope of this campaign and its final evaluation performed in 2014 (Ministry of Health, Labour and Welfare 2013a).

In Japan, adolescent problems became more severe during the 1990s with an increase in abortions, sexually transmitted infections (STIs), and drug abuse, as well as other issues including truancy and psychological problems such as social withdrawal. Although sex education is listed in the Course of Study published by the Ministry of Education, Culture, Sports, Science and Technology, the course described therein only covers certain aspects of sex such as reproduction and STIs, which means there is no "sex education" course that comprehensively addresses sexuality. Consensus between parents and the school must be achieved before sex education classes are designed and taught. However, people hold a variety of views regarding the specific sex education topics that should be taught to different age-groups. As a result, implementation of these initiatives varies greatly among schools.

This is particularly true regarding topics such as sexual intercourse and contraception, which are often avoided in a school setting; hence, not all adolescents are able to access the information and education they need about sexual matters. Nevertheless, children live in an environment where they can easily access harmful media sexual content through channels on the Internet. Unfortunately, many adolescents engage in unprotected sex without receiving proper sexual education at school or at home. These adolescents are influenced by explicit material from the sex industry that stimulates their sex drive.

In Healthy Parents and Children 21, goals were set and strategies were developed to overcome these adolescent health problems. Specific initiatives included strengthening the consultative capacity of school health promotion systems

M. Nagamatsu
Department of Maternal and Child Nursing, Faculty of Medicine, Saga University, 5-1-1, Nabeshima, Saga-City 849-8501, Japan
e-mail: m-nagamatsu@jrckicn.ac.jp

M. Nagamatsu
Japanese Red Cross Kyushu International College of Nursing, 1-1 Asty, Munakata-City 811-4157, Fukuoka-Prefecture, Japan

Y. Hamada
Department of Maternal Nursing, Faculty of Junshin Gakuen University, Hukuoka-City 815-8510, Japan
e-mail: hamada.y@junshin-u.ac.jp

T. Sato (✉)
Health Care Center, Saga University, 1-Honjo, Saga-City 840-8502, Saga, Japan
e-mail: satot@cc.saga-u.ac.jp

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_4

and schools; designing sex education programs with the assistance of experts; strengthening collaboration among school health organizations, health and welfare organizations, and related organizations; improving children's understanding of the media (media savviness); and implementing peer education programs that allow children to learn information from others of their own generation. Some local governments and schools have also launched sex education programs led by university students (Hamada et al. 2006).

As a result of these initiatives, the abortion rate among girls aged 10–19 dropped from 12.1 per 1000 population in 2000 to 7.1 in 2011. This decrease in abortions is probably attributable/associated with more widespread use of oral contraceptives, use of emergency contraceptives, delaying sexual activity, a decrease in unplanned pregnancies, and an increase in teenage births (Japanese Association for Sex Education 2013). It has been reported that financial difficulties and interference with school are the main reasons why girls aged 10–19 have abortions, with 40 % of girls who had an abortion indicating that they could not have a child even if they wanted to (Hata 2003). This finding indicates that the support system for young mothers is inadequate in Japan. In addition to preventing unwanted pregnancies, it is important for communities, schools, and government agencies to work together to support pregnant young women and help them to develop a more positive attitude toward pregnancy, childbirth, and child-rearing.

Japanese law mandates that the prevalence of four STIs, which are chlamydial genital infection, genital herpes, genital warts, and gonorrhea, must be reported through sentinel surveillance. The prevalence of these STIs decreased from 2003 to 2012 in the 10–19 age-groups. This decrease is believed to be due to public outreach initiatives for the prevention of STIs conducted by government agencies and related groups, improved health education in schools, and young people delaying the initiation of sexual activity (Japanese Association for Sex Education 2013). These findings, however, are essentially based on sentinel surveillance data from medical institutions and may only represent the "tip of the iceberg," considering that there are probably many untested individuals with asymptomatic STIs. In fact, the reported prevalence of STIs began to increase again in 2013, an increase that should not be taken lightly. It has been shown that vaccination before the first sexual contact is highly effective for preventing cervical cancer caused by infection with human papillomavirus (HPV), which is contracted through sexual activity. While promoting vaccination is worthwhile, it is also necessary to instill in children the desire to prevent cervical cancer and STIs before they become sexually active and to provide immersive education that delivers useful scientific information. In addition, more substantial research is needed to determine whether delaying the initiation of sexual activity is ultimately beneficial for adolescent sexual health.

Eating disorders are common among adolescent girls. They do not have a single cause and are triggered by a complex interplay among various factors, such as difficulty in completing adolescent developmental tasks, individual- and family-related factors, gender norms, and promotion of a desire to be thin by the media. One of these eating disorders is anorexia nervosa (AN), which is called adolescent-onset AN if it occurs during adolescence. Although the incidence of AN has declined over the past 10 years, the age of onset has also been decreasing, and over 3 % of elementary school students have an obesity index of −20 % or less (obesity index = body weight − standard weight for height/standard weight for height × 100) (Ministry of Education, Culture, Sports, Science and Technology 2012a). Furthermore, there has been a rapid increase in girls who do not have an eating disorder but are extremely thin (known as "unhealthily thin"). This predominant desire of adolescent girls to be thin is a problem that not only has a negative influence on normal physiological functions but also affects mental health. A substantial increase in support is required.

Smoking and drinking rates are steadily decreasing among 10- to 19-year-olds, and an increasing percentage of schools provide classes about the prevention of drug abuse. There has

been, however, a recent increase in incidents involving dangerous drugs that are easily obtainable, and it is entirely possible that these drugs could spread to adolescents. As research has shown, girls who drink, smoke, or abuse drugs in early adolescence have a higher risk of teenage pregnancy (Baba et al. 2014). Substance abuse also poses a risk to the reproductive health of adolescent girls.

The term "dating violence" refers to violence perpetrated by a romantic partner, and studies have shown that some 10- to 19-year-olds have a violent romantic partner. Perpetrators of dating violence are more often men than women. This has been suggested to be due to the entrenched patriarchal structure of Japanese society as well as gender norms, and these issues can arise in adolescent relationships. Cell phones and social networking services have become widely adopted by young people as communication tools, which means they are most likely to experience violence through these media. Because it would be difficult to develop a support system for unmarried couples, it would be best to increase the awareness of dating violence among young people and conduct research on its prevention.

Suicide is the chief cause of death among Japanese aged 15–39, accounting for over 20 % of all deaths per 100,000 population, and is currently a serious problem (Ministry of Health, Labour and Welfare 2012). Although reducing the suicide rate among 10- to 19-year-olds was a priority goal of Healthy Parents and Children 21, it has actually continued to increase among all age-groups and this has been especially noted for 15- to 19-year-olds. The most common reasons for suicide are academic problems such as limited career paths and underachievement. As suicide is triggered by complex factors that vary from person to person, further expansion of preventive efforts and continuing research will be necessary to develop effective strategies for this major problem.

Integrated health promotion initiatives that involve parents, educational institutions, experts in mental health and education, and government agencies will be required to resolve these issues and promote adolescent health.

The Adolescent Body and Health Problems During Adolescence

Eating Disorders

In recent years, the decreasing age of onset of eating disorders has become a problem in Japan. Malnutrition caused by eating disorders may reduce fertility or increase the risk of osteoporosis (Ishibashi 2013). While eating disorders are broadly classified as anorexia nervosa (AN) or bulimia nervosa (BN) in DSM-IV-TR (diagnostic criteria of the American Psychiatric Association), it is common for people with eating problems to alternate between these two conditions (Shibayama and Yoshiuchi 2013).

The diagnostic criteria for AN are a body weight ≤ 85 % of the standard weight, excessive fear of being overweight (resistance to gaining weight despite being thin), a distorted body image and obsession with personal appearance, and amenorrhea persisting for three months or longer. A 2002 study involving sentinel surveillance of both junior high schools and high schools in 10 regions across Japan showed that the incidence of AN among junior high school and high school girls was 2.3 %, with 13.2 % being classified as "unhealthily thin" (obesity index of −15 % or rapid weight loss with deviation from the normal growth chart), putting them in the high-risk group for AN (Watanabe et al. 2002). In addition, a 2013 final evaluation report by the (Ministry of Health, Labour and Welfare 2013a) showed a decrease in the incidence of AN among junior high school and high school girls to 1.5 %, but the percentage of girls classified as "unhealthily thin" conversely showed a rapid increase to 20.5 %. Since it has been reported that about one-third of people with anorexia do not visit hospital (Suzuki et al. 2013), changes in the prevalence of AN must be monitored carefully in the future.

Height and weight gain during junior high school and high school peaked during the 1998–2006 period and has leveled off since then. Although children still tend to grow faster than their parents, there is no longer a notable difference between generations (Ministry of

Education, Culture, Sports, Science and Technology 2013).

Adaptation to physical maturation during adolescence is an essential developmental task in the process of forming identity. It has been reported that the process of adaptation can be negatively impacted by various factors such as a negative attitude of parents toward physical changes in their children, the influence of the media promoting thinness, lack of media savviness, weakening of modern-day relationships, and delayed emotional maturity. It has also been noted that the age of onset of AN has been decreasing from high school to junior high school to the older years of elementary school, which means that the disease impairs growth and becomes more difficult to treat (Horikawa 2013). According to the National Health and Nutrition Survey, 21.5 % (i.e., 1 in 5) of Japanese women in their 20s are underweight with a BMI of less than 18.5 (Ministry of Health, Labour and Welfare 2013b). This has led to concern that they lack sufficient nutrition to maintain their health or to become pregnant and successfully give birth. If the desire to be excessively thin and abnormal dieting that result in AN are also causing the rapid increase in "unhealthily thin" young women, it would seem necessary to set up educational support systems that promote adaptation to healthy physical maturation during adolescence, the period during which consciousness of body image is strongest.

It has been shown that dieting in adolescence is influenced by a person's body image and body satisfaction (Suka et al. 2006). In addition, it has been found that girls have a more negative attitude toward physical changes during adolescence than boys, with the incidence of eating disorders being 10–20 times higher among adolescent girls. The increase in low-birthweight neonates resulting from the desire of pregnant women to remain thin has also become a problem in recent years, and it is possible that the excessive pursuit of thinness by adolescent girls will lead to more health problems during pregnancy and childbirth in the future. To avoid such problems, health education should be provided to adolescent girls to offset their negative body image and correct their diet, while media content that promotes excessive thinness should be regulated.

AN is a refractory disease that has a high mortality rate and frequently recurs. One reason for this is that people with AN generally do not receive early treatment because they refuse to seek help until everyone around them recognizes that they are abnormally thin. This may be partly because both people with AN and others around them such as their parents have trouble recognizing that AN is a serious disease and awareness of this condition is insufficient. In 10- to 19-year-olds, AN causes physical and psychological developmental disorders related to weight loss during the adolescent growth spurt and affects multiple organs, which means that prevention and early detection are critical (Kudo 2014).

Treatment of eating disorders consists of three parts, which are physical treatments including weight gain and correction of the diet, psychological treatment including behavioral therapy and counseling of the patient and family members, and pharmacotherapy for depression. Psychological symptoms include an obsession with dieting and weight and severe depression that makes the patient prone to various undesirable behaviors such as social withdrawal, self-harm, and attempted suicide, despite having a compulsive drive toward perfection in other areas of life such as academic or sporting achievements. Malnutrition or overeating associated with eating disorders can cause a variety of symptoms; hence, management by a team involving doctors, psychologists, nutritionists, and social workers is considered to be ideal (Ikuno 2001).

It is most important to detect AN at an early stage. As a method of screening for AN, Tanaka (2005) has proposed that students who are considered to be "unhealthily thin" should be interviewed and examined by a school nurse, after which those found to have symptoms of AN (bradycardia with a heart rate of less than 60/min and amenorrhea for at least 3 months) should be referred for medical assessment. Screening at schools and local health organizations and a comprehensive treatment system involving cooperation between gynecologists and pediatricians are necessary to support adolescents with AN.

Menstrual Disorders

The average age of menarche in Japan is 12, with about 98 % of girls reaching menarche before the age of 14. It is important for adolescent girls to understand their menstrual cycle, which serves as a barometer of health from menarche to menopause, and to learn how to handle menstruation. Adolescence is also a common time for health problems associated with menstruation to occur. As such, problems can lead to issues such as infertility or osteoporosis in the future; early and appropriate intervention is necessary.

Normal menstruation is defined as a menstrual cycle of 25–38 days, with 3–7 days of bleeding, blood loss of 20–140 ml, and no interference with daily activities by symptoms, while a menstrual disorder can be considered to exist if menstruation does not meet these criteria. Menstrual disorders are classified as disorders related to the timing of menarche, the menstrual cycle, the duration of menstruation, the volume of menstrual flow, and the menstrual symptoms (Yoshida and Sakakida 2014). In women, body fat is involved in estrogen metabolism and plays an important role in the expression and maintenance of normal sexual function. Therefore, the incidence of menstrual disorders tends to be higher in women with less body fat. As mentioned in the previous section, 1 in 5 Japanese women aged from 20 to 29 years is "unhealthily thin" and thus prone to develop menstrual disorders.

Amenorrhea

Amenorrhea is a disorder of the menstrual cycle that is classified as primary or secondary disorder. Primary amenorrhea is defined as failure of menarche to occur by age 18. Primary amenorrhea is uncommon, and care must be taken when diagnosing this condition and informing patients because the causes include chromosomal abnormalities and hereditary diseases associated with infertility. Secondary amenorrhea refers to cessation of menses for 3 months or longer in a female who has experienced menarche. The causes include stress, excessive exercise, and polycystic ovary syndrome, but weight loss due to dieting is reported to be the chief cause among adolescents accounting for 44 % (Miyagawa et al. 1999). Among females presenting with amenorrhea induced by weight loss, some will be found to have AN. Management of amenorrhea should be approached from both a physical and psychological perspective, with hormone therapy being given by gynecologists and psychotherapists or psychiatrists also collaborating to provide patient care. Before adolescent girls develop AN, it is important for them to understand the dangers of amenorrhea and excessive dieting and to be supported in adopting healthy behavior.

Menstrual Symptoms

The term "menstrual symptoms" refers to symptoms that occur before and/or during menstruation. When these symptoms are severe enough to interfere with daily activities, those occurring before menstruation are called premenstrual syndrome (PMS) and those occurring during menstruation are called dysmenorrhea. PMS is defined as physical or psychological symptoms that occur for 3–10 days during the luteal phase and either become weaker or disappear when menstruation begins, while dysmenorrhea refers to a pathological condition that accompanies menstruation (Ishimaru 2003).

Many women mistakenly believe that menstrual symptoms are not something that can be treated and should just be endured. As young women are often hesitant to visit a gynecologist and may not take analgesics for fear of addiction, many remain untreated even when their symptoms interfere with daily activities.

Dysmenorrhea

Dysmenorrhea can be classified as secondary dysmenorrhea, which is attributable to organic dysfunction, and primary dysmenorrhea, which is not. Most dysmenorrhea during adolescence is primary dysmenorrhea, and 1/4 to 1/3 of girls

aged 10–19 develops dysmenorrhea. It commonly occurs two to three years after menarche when ovulation commences. The most common symptom is menstrual "cramps" that manifest as lower abdominal pain or low back pain. A variety of other symptoms can be associated with dysmenorrhea, including nausea, headache, breast pain/tenderness, weakness, drowsiness, irritability, and depression, and these symptoms can be severe enough to affect the quality of life. The main cause of primary dysmenorrhea is believed to be excessive contraction of the myometrium due to hypersecretion of prostaglandins. In particular in girls aged 15 or younger, the role of negative psychological factors such as anxiety or stress about menstruation can be important in relation to lower abdominal pain (Adachi 2007, 2009). Standard pharmacological treatment consists of analgesics combined with low-dose estrogen and a progestin. Other approaches that should be combined with such drug treatment are techniques for relieving tension in the lower back and lower abdomen, such as stretching exercises to improve pelvic blood flow, as well as counseling to overcome negative perceptions of menstruation (Adachi 2011).

Premenstrual Syndrome (PMS)

From 70 to 90 % of Japanese women experience premenstrual symptoms at some level. Among them, 5.3 % have moderate-to-severe PMS that interferes with daily activities and 1.2 % have premenstrual dysphoric disorder (PMDD), a condition in which prominent psychiatric symptoms are associated with menstruation (Tasaka 2011). A survey of high school students by Takeda and Yaegashi (2010) showed that the prevalence of premenstrual symptoms is high among adolescent girls, with 11.8 % having moderate-to-severe PMS and 2.6 % having PMDD. Irritability, hot flushes, lower abdominal bloating, lower abdominal pain, low back pain, dull headache, poorly controlled temper, headache, and breast pain are considered to be common symptoms. PMS is associated with psychiatric symptoms and breast symptoms more often than is dysmenorrhea. It is believed that these other symptoms are not caused by menstruation itself, but rather are induced by hormonal changes associated with the ovulatory cycle (Japan Society of Obstetrics and Gynecology 2008).

Treatment depends on the severity of symptoms and can include counseling, lifestyle guidance, and pharmacotherapy. First, the patient receives counseling to promote awareness of her condition and self-monitoring of daily activities. Guidance about healthy lifestyle habits, sufficient sleep, regular exercise, and a good diet is also recommended. The pharmacotherapy regimen depends on the patient's symptoms and their severity, but it has been reported that patients often do not receive appropriate care because the Japan Society of Obstetrics and Gynecology has not devised clear criteria for determining the severity of PMS. It has been reported that 10 % of girls in high school are suffering from post-traumatic stress disorder (PTSD). Additionally, severe PMS was found to correlate with the Great East Japan Earthquake in 2011 (Takeda et al. 2013). These findings indicate that mental stress has a strong influence on PMS symptoms, again suggesting that PMS needs to be treated from a mental as well as physical perspective.

Support for Self-care During Menstruation

In the Course of Study outlined by the Ministry of Education, Culture, Sports, Science and Technology, it is recommended that students should be taught about menarche in the fourth year of elementary school to prepare them for menstruation. There are, however, few opportunities for adolescent girls to learn specific self-care strategies related to menstruation after they reach menarche. Such self-care strategies include being able to determine whether menstruation is normal or not and discussing this with others, being able to use and dispose of sanitary products, and being able to alleviate discomfort and pain. A study by Kimura and Saito (2011) showed that 41.9 % of junior high

schools and high schools offer education about menstruation. Izumisawa et al. (2008) noted that there are not enough opportunities for adolescent girls to discuss menstruation with healthcare professionals. Studies have shown that endometriosis causes many cases of dysmenorrhea in adolescence, although it was once believed to be rare. Therefore, systems that allow medical professionals such as nurses and gynecologists to collaborate in supporting students in the school health setting should be developed to prevent infertility. Additionally, manufacturers of sanitary products have recently begun to provide menstrual cycle tracking tools and information about the menstrual cycle as online services, and these services could potentially be utilized in health education classes.

Contraception and Abortion

Japanese tend to believe that unborn children have rights and that it is important to respect life, but they recognize that abortion is a necessary evil that cannot be avoided in some situations. The Japanese Maternal Protection Law permits abortion before 22 weeks of gestation, if the mother's health is at considerable risk or if the pregnancy is due to violence or coercion. According to the Report on Public Health Administration and Services by the Ministry of Health, Labour and Welfare, the number of abortions has been decreasing since 2000, from about 340,000 in that year to about 200,000 in 2012. There were about 20,000 abortions among women younger than 20, and this figure has remained stable over the past few years (Ministry of Health, Labour and Welfare 2013c) (see Fig. 4.1).

The 7th National Survey on Sexual Behavior (Japanese Association for Sex Education 2013), which is a large-scale national survey of junior high school, high school, and university students, has described the characteristics of sexual behavior among young people in Japan over recent years. The percentage of young people who had commenced dating, kissing, and sexual intercourse increased until 2005, indicating that sexual activity was commencing at a younger age and that Japanese youth were accumulating more sexual experience. However, the percentage of individuals who are sexually active began to decrease among all age-groups of young people in the 2010s (see Fig. 4.2). It has been suggested that this is because sex education regarding unwanted pregnancy and STIs has encouraged young persons in Japan to be more cautious about sex, but others have indicated that it

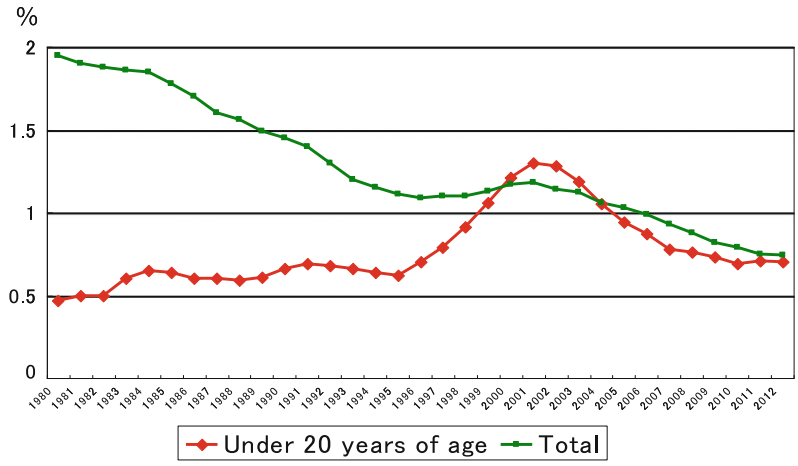


Fig. 4.1 Rate of induced abortion (1980–2012). Report on Artificial Abortions and Sterilization Operations Statistics before 2001 year (calendar year) and report on Public Health Administration and Services after 2002 (fiscal year) on Ministry of Health, Labour and Welfare

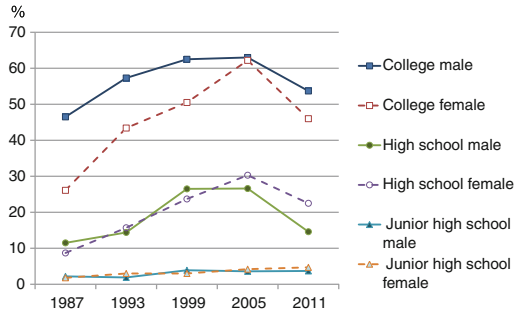


Fig. 4.2 Numbers of teenager with sexual intercourse. From the Japanese Association for Sex Education (2013)

reflects a decrease of interest in sex among young people. An increasing number of girls have negative perceptions of sex, believing it is "dirty" or "not fun." This may suggest that children are not learning about the three fundamental reasons why humans have sex ("reproduction," "enjoyment," and "connection"), because Japanese sex education only emphasizes the risks of sex and children otherwise only obtain inaccurate information spread by the media. It has also been found that 44.6 % of married Japanese are in a sexless marriage, which is defined as the absence of sexual activity for one month or longer (Japan Family Planning Association 2015). This is a serious problem with respect to sexual health along with the loss of interest in sex among Japanese youth.

Furthermore, the use of contraception increased by about 20 % between 1999 and 2011, at which time 70–80 % of high school students and university students reported that they always used contraception. Condoms have traditionally been the most common form of contraception in Japan. Over 90 % of high school students and university students chose condoms among contraception. Less than 3 % of female university students were taking low-dose birth control pills in 2005, but the percentage increased to over 10 % by 2011. It is believed that the increase may have been related to these medications being covered by health insurance for alleviating the symptoms of dysmenorrhea. Nevertheless, this is still not a common form of contraception due to concerns about side effects. Awareness of the emergency contraceptive pill (approved in 2011) has been steadily increasing, and it was reported that 6.2 % of women used emergency contraception in the past year (Japan Family Planning Association 2015). It is thought that increased use of contraceptives and the trend toward sexual passivity may have resulted in the decrease in the abortion rate.

One finding that warrants concern is that nearly 20 % of high school and university students are using the withdrawal method, which is unreliable. In the case of high school girls, it has been shown that even girls who have accurate sexual knowledge do not always choose a reliable method of contraception. Abortions performed at seven weeks of gestation or earlier account for almost half of all abortions and represent a higher percentage than abortions performed at any other period. Interestingly, young people under age 20 have abortions considerably later in pregnancy than any other age-group, with 10.3 % of abortions in this group being performed at 12 weeks of gestation or later. The reason for this may be that teenage girls do not seek medical assistance until later because they do not realize they are pregnant or feel that they cannot talk to anyone about the pregnancy. The risk to the mother's health naturally increases when abortion is performed later in pregnancy.

Furthermore, it has been found that among women aged 16–49 years who have had an abortion, 25.9 % have had multiple abortions. This indicates that in addition to prevent unwanted pregnancies during adolescence, early pregnancy testing is needed and substantial contraceptive education and counseling services should be provided to ensure that girls do not have repeated abortions.

Teenage Pregnancy

The number of children born to mothers under age 20 decreased from 2008 to 2012. However, it increased slightly from 12,770 in 2012 to 12,964 in 2013 (Ministry of Health, Labour and Welfare 2014). Whereas unwanted pregnancy during adolescence has long been recognized as a problem and is discussed during sex education

classes, support for teenagers raising children is still lacking. There is no social security for children born out of wedlock in Japan, and many unmarried teenage mothers face social and financial problems. Characteristics of teenage pregnancy include the following: (1) girls are forced to continue an unwanted pregnancy because they do not seek medical assistance until it is too late; (2) girls tend to manage their health poorly because they lack information as a result of not attending prenatal checkups or childbirth education classes; and (3) girls and their partners face many social problems such as needing to complete school, being unmarried, and difficulties raising the child. Despite such problems, (4) an increasing number of teenagers are actively choosing to have and raise the child (Suzuki 2009). On the basis of these features of teenage pregnancy, people who support teenage mothers should recognize that each mother has her own unique needs and support systems that put faith in the power of young mothers should be developed rather than perceiving teenage pregnancy and childbirth in a negative light.

STIs

Although the incidence of STIs reported by the Ministry of Health, Labour and Welfare (2013d) had been decreasing since 2002, the incidence of STIs increased again in 2013 (see Figs. 4.3 and 4.4). The increase in the incidence of genital chlamydial infection and syphilis was particularly high. The incidence of genital herpes and genital warts was gradually increasing before and is also continuing to rise. Due to the existence of asymptomatic cases and the difficulty of treating infections contracted through oral sex, this situation cannot be viewed lightly.

Sex Differences in the Prevalence of STIs

According to surveillance reports published by the Ministry of Health, Labour and Welfare in 2013, the most common STIs in women are genital chlamydia, genital herpes, genital warts, and gonorrhea in that order. While syphilis, gonorrhea, and genital warts were more common among men, chlamydia and herpes were more prevalent among women. Due to anatomical differences in the female and male genitalia, it is easier for women to develop ascending infection of the peritoneal cavity via the mucous membranes of the vagina or cervix. Therefore, delayed treatment may lead to serious issues such as pelvic inflammatory disease (PID) and infertility. Although a high prevalence of STIs has traditionally been considered a bigger issue for women than men, the prevalence of chlamydia, genital warts, and syphilis greatly increased in men during 2013.

Increase in Asymptomatic Carriers

Chlamydia is a typical STI that is asymptomatic. It has been reported that 50–60 % of men and 70–80 % of women infected with chlamydia are either asymptomatic or only have mild symptoms. A study on the prevalence of chlamydia among sexually active high school students by Imai revealed that 6.7 % of sexually active boys and 13.1 % of sexually active girls had chlamydia, with the rate nearly doubling to 25.8 % for girls with two or more sexual partners (Imai 2013). If chlamydia progresses undetected, it can cause serious issues such as PID, perhepatitis, infertility, and ectopic pregnancy. Furthermore, maternal infection during pregnancy can lead to premature rupture of membranes, as well as cause pneumonia and conjunctivitis in newborn infants at a high rate of 30–40 %. Therefore, failure to treat chlamydia during adolescence can cause major health problems for women and can affect their reproductive function.

HIV/AIDS infection is also spreading because the disease is asymptomatic during its long latent period. According to the AIDS Surveillance Committee of the Ministry of Health, Labour and Welfare, the number of people newly infected with HIV and the number of AIDS patients in Japan are both still increasing steadily. In 2013, there were 1106 people with new HIV infection

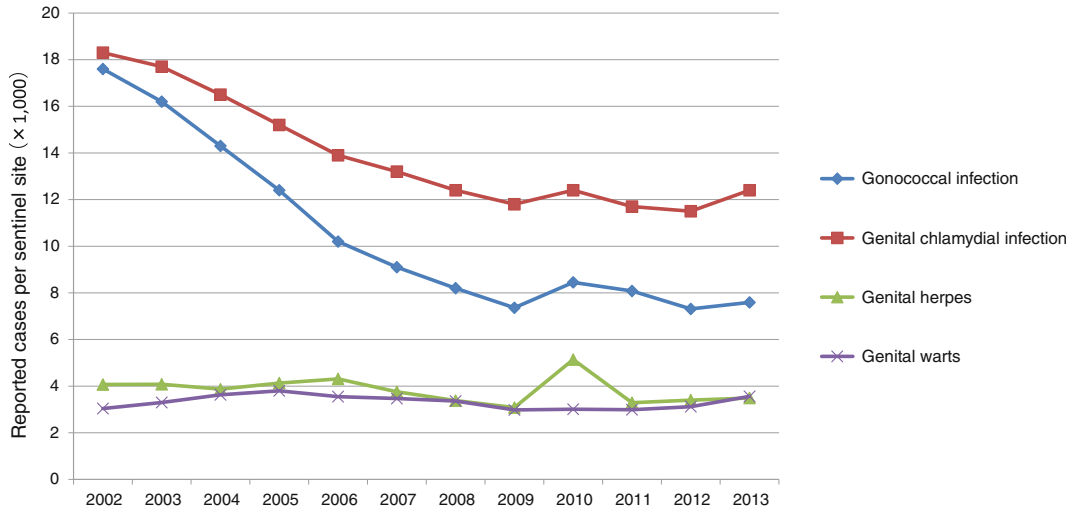


Fig. 4.3 Annual changes of reported STI cases per sentinel site (men). Adapted from "Infectious Disease Report" by the Ministry of Health, Labour and Welfare (approximate figures as of April 2014)

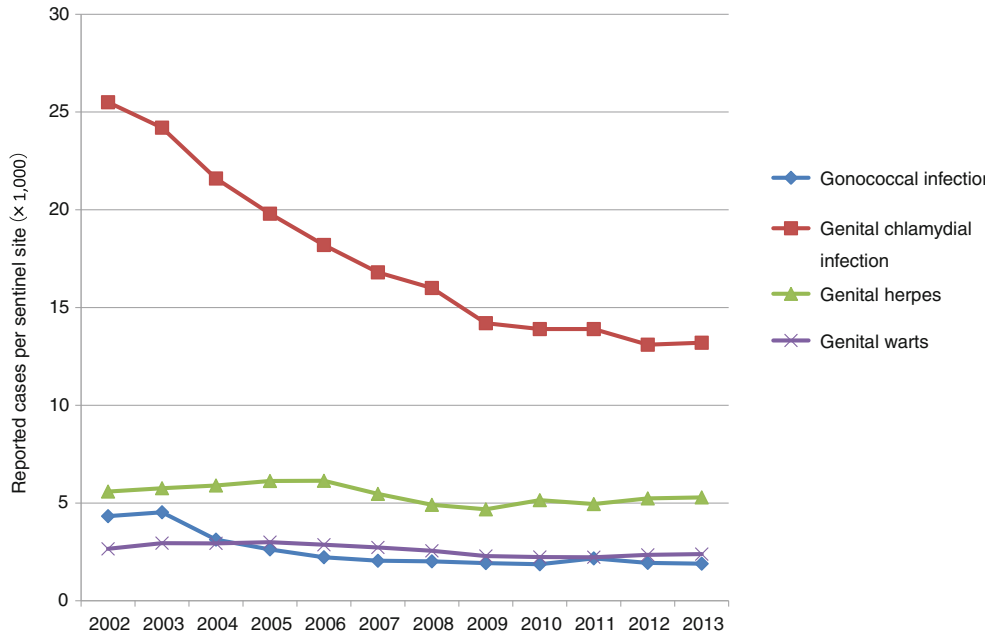


Fig. 4.4 Annual changes of reported STI cases per sentinel site (women). From Infectious Disease Report by the Ministry of Health, Labour and Welfare (approximate figures as of April 2014)

and 484 new AIDS patients (the highest number on record), making a total of 1590 new cases of HIV/AIDS. This is the second highest number of annual cases ever reported. The vast majority of people with HIV/AIDS are male. Moreover, infection was not detected until AIDS had developed in about 1 out of 3 reported cases, and the number of tests for HIV and HIV consultations has been decreasing since 2008 (Ministry of Health, Labour and Welfare AIDS Surveillance

Committee 2013). This trend is not seen in any other developed country apart from Japan. The AIDS prevention lessons that were actively carried out at schools across Japan in the 1990s are still listed in the Course of Study published by the Ministry of Education, Culture, Sports, Science and Technology. Nevertheless, very few schools offer comprehensive AIDS education that covers topics ranging from information about AIDS and prevention of HIV infection to living with AIDS, and AIDS education seems to be considered less and less important because people perceive it as a disease of the past. Decreased concern about AIDS and reduced adoption of preventive behavior among young persons indicate that this age-group, which is most likely to encounter AIDS, is not receiving effective education about HIV/AIDS. Japanese people will be concerned about expansion for HIV/AIDS in future.

Oral infections arising from oral sex are more likely to be asymptomatic than genital infections, and infected individuals are often not aware that STIs can be transmitted in this way. Thus, detection and treatment of these infections are delayed, and carriers may spread the infections further. Notably, 20–30 % of men with gonorrhea have both gonorrheal pharyngitis and chlamydia because the gonococcus rapidly acquires drug resistance.

Another problematic trend in recent years has been the increase in syphilis. Infection with syphilis through homosexual contact has been rapidly increasing among males aged 10–49 in particular. Co-infection with both syphilis and HIV, as well as infection of women through heterosexual contact, is also increasing, raising the concern that more children will be born with congenital syphilis in the future (see Fig. 4.5).

Challenges for STI Prevention

As STIs can affect fertility, spreading awareness of STI prevention among adolescents is an important task. However, variations in the content of health education programs mean that not all students have the opportunity to obtain information about STIs or to learn specific preventive measures. Furthermore, the environment of obstetrics and gynecology clinics is not conducive to adolescent girls attending for preventive purposes because such clinics mainly treat pregnant women and gynecological diseases. It is also common for young women to hesitate about seeking medical advice due to concern that others will think the visit is related to an unwanted pregnancy, which is another factor that further delays treatment of STIs.

Cervical Cancer

Every year in Japan, approximately 10,000 women develop cervical cancer and approximately 2600 women die from this cancer (Matsuda et al. 2013). Cervical cancer develops when a female is infected with HPV through sexual activity. HPV is such a common virus that 80 % of sexually active people will be infected with it at least once, and it is important to prevent infection through vaccination as well as to detect and treat this cancer early through regular screening. While young people are becoming sexually active at a younger age, they tend to be less likely to participate in screening than before, and thus, the cervical cancer-screening rate has stagnated at 20–30 %. As a result, the prevalence of cervical cancer has been increasing among women during their peak reproductive period (20–39 years of age), making it a major women's health problem.

It is hoped that the HPV vaccine, which is given to uninfected individuals who are not yet sexually active (i.e., adolescents), will be able to prevent at least 70 % of cervical cancer. Active efforts to promote vaccination began in Japan when the vaccine was approved in 2011. It has been reported, however, that adolescents in the target age-group for the vaccine and their mothers lack knowledge about cervical cancer because education about the prevention of this cancer is being provided at too late a stage. Hamada and associates (2015) found that the mother's attitude influences the HPV vaccination rate of their

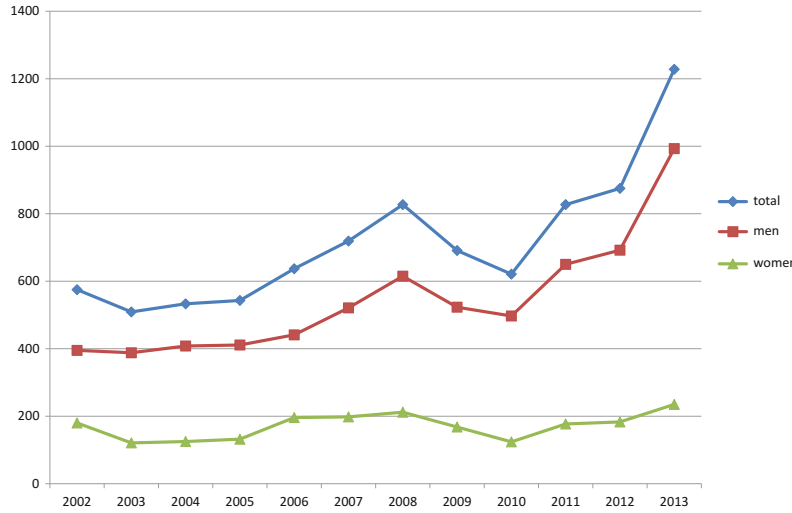


Fig. 4.5 Reported syphilis cases. From Infectious Disease Report by the Ministry of Health, Labour and Welfare (approximate figures as of April 2014)

daughters, indicating that it is necessary to educate both mothers and their daughters about cervical cancer prevention. According to this study, the main factors influencing whether or not girls received HPV vaccine were the mother's sense of obligation to have their children vaccinated, the vaccine being provided at no cost (see Fig. 4.6). As 40 % of mothers did not even know that cervical cancer was a disease, most mothers first talked about cervical cancer with their daughters after the vaccine was offered at no cost. This suggests that to promote cervical cancer prevention among women in the future, it is important to establish systems to provide information and consultation services for parents so that they can educate their children about health at home, while also providing adolescents with substantial education about cancer prevention.

In 2013, serious side effects associated with the HPV vaccine became a problem in Japan and active recommendation of vaccination was suspended. These reported side effects included post-inoculation pain at the inoculation site, headache, systemic pain, paralysis, involuntary movements, and symptoms such as syncope. Upon closer examination of cases of serious pain/dysmotility revealed that the incidence was approximately 3.2 per 100,000 doses of HPV vaccine (Matsumoto et al. 2015). With regard to overseas reports of side effects, the system is different, and direct comparisons cannot be made

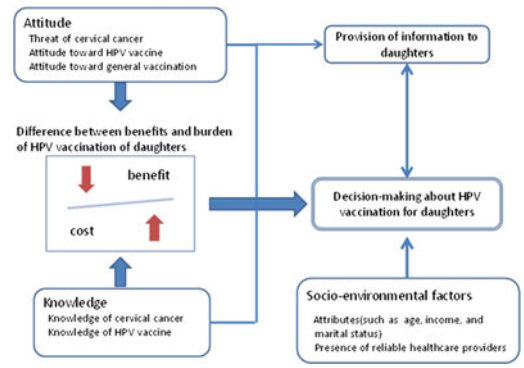


Fig. 4.6 Factor influencing maternal acceptance of human papillomavirus vaccination for their school-aged daughters: conceptual diagram (Hamada et al. 2015)

with the situation in Japan. The frequency of side effects reported in Japan, however, does not seem to be particularly high. Complex regional pain syndrome (CRPS) is a cause of widespread pain, while acute disseminated encephalomyelitis (ADEM) and Guillan–Barre syndrome (GBS) may be diseases causing dysmotility. The possibility of various symptoms arising as a result of the psychosomatic response to pain and anxiety associated with vaccination has also been suggested. Nevertheless, a causal relationship between these serious side effects and the HPV vaccine has not been scientifically verified. At present, follow-up studies of vaccinated persons who experienced health damage, relief

measures/compensation for such persons, and improvement of specialized medical institutions, and other studies, are being rapidly implemented (Ministry of Health, Labour and Welfare 2014b). Since active encouragement of vaccination was discontinued in Japan, decisions about prophylactic HPV vaccination have been entrusted to individual judgment. As a result, the HPV vaccination rate dropped from 72 to 8 % in 2014. *In particular under these circumstances, adolescents must be supported so that they can understand the risks of cervical cancer and specific methods of preventing it and can adopt preventive behavior in the future.*

Mental Health Problems During Adolescence

Adolescence is a period of major biological, psychological, and social changes, during which people must overcome various developmental challenges such as establishing self-identity and handling problems related to sex. Adolescents tend to show psychological instability as they start to become independent from their parents, and their development can be affected by various influences in the environment and relationships with others. This can exacerbate various forms of psychological distress, such as anxiety, depression, difficulty in controlling behavior and emotions, and increased aggressiveness or impulsivity.

According to a 2014 report by Japan's Ministry of Education, Culture, Sports, Science and Technology, a total of 119,617 elementary and junior high school students were truant and the truancy rate was 1.17 % compared with 112,689 and 1.09 % in the previous school year. In addition, 55,657 high school students were truant and the truancy rate was 1.67 % compared with 57,664 and 1.72 % in the previous school year. Furthermore, 59,742 high school students dropped out and the dropout rate was 1.7 %. Additionally, there were 240 reported suicides among elementary school, junior high school, and high school students.

Even though adolescents in Japan have been living in more diverse ways in recent years, their lives have become more difficult due to the increasing prevalence of various stress-inducing factors such as disruption of circadian rhythms, chronic fatigue, increased diversity of values, difficulties with goal-setting, an inadequate sense of achievement, and lack of confidence (Kameoka 2014). Stress resulting from an experience that is too overwhelming for a person to process with his or her own coping mechanisms (i.e., a traumatic experience) is called traumatic stress. Many adolescents in modern-day Japan have had traumatic experiences due to events such as the Tohoku earthquake, accidents, crimes, child abuse, or sexual abuse. Traumatic experiences have a variety of effects on a child's physical condition, emotions, perceptions, and behavior. During adolescence in particular, strong emotions such as anxiety, fear, anger, or depression are sometimes expressed through social withdrawal, self-harm or harming others, sexually deviant behavior, and/or drug abuse (Kameoka 2014).

Influence of Family and Friends on Adolescent

Many studies conducted in Japan have shown that problematic behavior among adolescent children not only arises from the children themselves, but is also influenced by their families (Doki et al. 2012). If a parent is under high levels of stress due to inability to build positive interpersonal relationships at work, the effects of this extend to the relationships with their children and can initiate problem behavior in the children (Doki et al. 2012). Notably, recent Japanese studies have shown that a child's relationships with their parents and other people influence sexual activity during early adolescence, which leads to problem behavior in adolescents. Delaying the first experience of sexual intercourse was related to parental monitoring in the case of female high school students (Nagamatsu et al. 2008). Thus, parental monitoring is an important variable to consider when examining risk factors for sexual activity among adolescents. Yoshino and associates (2005) reported that adolescents from families classified into the

extreme-balanced group showed a higher rate of antisocial behavior than adolescents from families classified into the well-balanced group on the Family Adaptability and Cohesion Evaluation Scales (FACES) of Olson and associates (1985). In Japan, female high school students engaging in sexual intercourse was reported to be influenced by the parent–child relationship and also by the relationship between the parents. In addition, engaging in sexual intercourse by both sexes was related to meal habits, smoking, drinking, the existence of a boyfriend or girlfriend, and the existence of friends with sexual experience (Inoue et al. 2005). Moreover, both sexual experience and acceptance of sexual intercourse among male and female adolescents were related to the presence of friends with sexual experience and to less strict family monitoring. The extreme-balanced type of family was associated with sexual experience for males, while the presence of dating partners of the same age was related to acceptance of sexual intercourse by males (Nagamatsu et al. 2012a). Lack of teachers who could provide counseling and the presence of older dating partners were related to sexual experience and acceptance of sexual intercourse by females (Nagamatsu et al. 2012a). Another study conducted in Japan showed that adolescents with liberal attitudes had more dating partners and friends with sexual experience than those with conservative attitudes, and that the liberal adolescents gave lower ratings than the conservative adolescents for talking to their parents about life and AIDS, as well as for teachers listening to their opinions (Nagamatsu et al. 2013). These studies suggest that it is important to promote sex education and individualized counseling that considers the gender of adolescents and takes into account their family background, school teachers, friends, and partners.

Interpersonal Interactions Online

A study of cell phone ownership by children aged 10–17 conducted by the Cabinet Office in FY 2013 showed that 51.9 % of all junior high school students own a cell phone (Cabinet Office 2014). Since recent advances in information technology led to widespread use of multifunctional cell phones with Internet browsing capabilities, such phones have become a familiar communication tool for adolescents and social networks have rapidly expanded to include children who are unaware of the risks of using these services and various problems have arisen because these children frequently send messages online (Inoue 2014; Ozaki et al. 2012). Pitfalls that children face include Internet addiction, bullying, criminal activity, and wasting time (Nakayama et al. 2014). It has been shown that children who become addicted to the Internet enter a vicious cycle in which they become prone to truancy and use the Internet excessively in their free time (Nakayama et al. 2014).

Problematic Internet Use in Two Countries

It has been reported that Japanese students are more likely to demonstrate problematic Internet use (PIU) than Chinese students (Yang et al. 2013). Compared with Chinese students, Japanese students reported a more negative self-image, less parental oversight, more problems with excessive control, and higher depression scores. The PIU group had a higher depression score than the normal Internet use group. The PIU group had a majority of male students, and the members of this group tended to have a more negative self-image, saw their mothers as less caring, and considered their mothers and fathers to be more over-controlling. PIU is strongly associated with depression, a negative self-image, and poor parental relations. Mediation analysis revealed that the national differences of PIU between Japanese and Chinese were related to depression and the perceived level of mother's care. This cross-national study indicated that both depression and a low perceived level of mother's care were significant risk factors associated with the difference of PIU between Japanese and Chinese (Yang et al. 2013).

Substance Use and Abuse Among Adolescents: Smoking, Drinking, and Drug Use

A national survey of smoking and drinking in Japan found that 7.7 % of male junior high school students, 12.9 % of male high school students, 5.5 % of female junior high school students, and 7.5 % of female high school students had smoked cigarettes and that the smoking rate has decreased over time (1996, 2000, 2004, 2008, 2010, and 2012) (Ozaki et al. 2012). Regarding the frequency of drinking alcohol, the study found that 7.2 % of male junior high school students, 12.4 % of male high school students, 26.0 % of female junior high school students, and 44.8 % of female high school students had drunk alcohol at least once during the 30 days before the survey. The drinking rate has also generally decreased over time (1996, 2000, 2004, 2008, 2010, and 2012) (Ozaki et al. 2012). However, Japanese society is lenient with regard to underage drinking, and the attitude of adults that drinking is fine in moderation makes it difficult to prevent alcohol abuse by minors. Advertisements for sweet-tasting and fashionable cocktails that resemble juices are another reason why drinking has not decreased among female students.

In Japan, the sale and use of stimulants, marijuana, 3,4-methylenedioxymethamphetamine, cocaine, heroin, psychotropic drugs, paint thinner, and other mind-altering substances designated by the Pharmaceutical Affairs Law that are addictive, abused, or have the potential for abuse are prohibited or restricted by law. Recently, there have been cases where users of so-called legal herbs, aromas, or incenses sold in stores or online have suffered health problems such as vomiting, convulsions, dyspnea, and disturbance of consciousness, with even some fatalities (Cabinet Office 2015a). While these drugs are sold as "legal" or "quasi-legal," some contain components that are more addictive or toxic than many controlled substances, and their use has caused adverse events and incidents. It is also suspected that individuals who abuse these drugs may be more likely to abuse other drugs such as stimulants or marijuana (Cabinet Office 2015a). The number of people arrested for marijuana-related crimes has been decreasing since 2008. It was 1692 in 2012 and accounted for 12.2 % of all drug-related arrests. Nearly half of all people arrested for marijuana-related crimes were younger than 30, indicating that young people still mainly abuse this drug. Marijuana abuse alters memory, learning, and perception, with long-term abuse causing amotivational syndrome characterized by lack of motivation to do anything and marijuana psychosis characterized by delusions and hallucinations (Cabinet Office 2015a).

Overview of Policies for Adolescents

It has been found that most individuals with a history of smoking, drinking, and drug abuse tend to start drinking alcohol and then progress to smoking and drug abuse in that order (Kure Yamasaki and Kawata 1998). Therefore, it can be said that the prevention of alcohol abuse is also important for the prevention of smoking and drug abuse. For that reason, the Ministry of Health, Labour and Welfare included early detection and proper intervention for excessive drinking, prevention of underage drinking, and public education about alcohol and health as goals for the third national health promotion initiative in the Health Japan 21 program that commenced in 2000. Additionally, the Ministry of Education, Culture, Sports, Science and Technology (2012b) includes lessons designed to prevent underage drinking, smoking, and drug abuse as a part of health education aimed at preventing drug abuse in Japanese elementary, middle, and high schools.

Programs Specifically Designed to Meet Adolescent Health Needs

Some local governments (e.g., Kanagawa Prefecture) are implementing a program of lessons aimed at preventing drug abuse that is taught in all of the elementary schools, junior high schools, and high schools once a year with the

assistance of police officers, former narcotics agents, and nurses (Kanagawa Prefectural Government 2015). These lessons cover "prevention of diseases related to smoking, drinking, and drugs" for sixth-year elementary school students, "healthy lifestyle and prevention of diseases related to smoking, drinking, and drugs" for third-year junior high school students, and "maintenance and improvement of health and prevention of diseases related to smoking, drinking, and drugs" for newly enrolled high school students. In addition, information about preventing the abuse of new quasi-legal substances ("quasi-legal herbs") is posted on the prefectural Web site (Kanagawa Prefectural Government 2015).

Violence and Injury

Bullying: A Serious Public Health Issue

According to a 2014 report by the Ministry of Education, Culture, Sports, Science and Technology, there were 118,805 known cases of bullying in elementary schools (117,384 in the previous school year), 55,248 in junior high schools (63,634 in the previous school year), 11,039 in high schools (16,274 in the previous school year), and 768 in special needs schools (817 in the previous school year). These amounted to a total of 185,860 cases of bullying (198,109 in the previous school year), with a rate of 13.4 per 1000 students. In addition, there were 10,896 cases of violent behavior in elementary schools (8296 in the previous school year), 40,246 in junior high schools (38,218 in the previous school year), and 8203 in high schools (9322 in the previous school year). These amounted to a total of 59,345 cases of violent behavior (55,836 in the previous school year), with a rate of 4.3 per 1000 students. Compared with the previous school year, the number of known cases of bullying and violent behavior showed a slight increase, indicating that these are still serious problems at school. In recent years, adolescents have been using text and picture messaging for communication, which has led to "cyberbullying," a new form of bullying that involves computers or cell phones. There were 8787 cases of cyberbullying in 2014 (7855 in the previous school year), and they accounted for 4.7 % of the known cases of bullying (4.0 % in the previous school year) (Ministry of Education, Culture, Sports, Science and Technology 2014). However, it is difficult to detect cyberbullying, making it problematic to determine the actual prevalence. There has been little research on cyberbullying in Japan, but a study of junior high school students from certain prefectures by Tirade (2014) showed that 47 % of students had never participated in bullying, 44 % had participated in conventional bullying, and 8.7 % had participated in cyberbullying. Common forms of cyberbullying included posting insults online, sending messages telling others to ignore someone or stop being their friend, and calling others "gross" or "annoying" or telling them to "die" in online comments, with cyberbullying being an extension of relationship-based bullying (Tirade 2014). Students who participated in cyberbullying had worse relationships with their parents, trusted their parents less, and had lower awareness of moral boundaries than students who did not participate in cyberbullying (Terado 2014). This suggests that when a child's relationships with people close to them show deterioration, they turn to online communication to find somewhere to belong.

Dating Violence

Dating violence has become one of the most serious and fastest-growing social and health concerns. Younger age is a consistent predictor for experiencing dating violence, and physical and sexual violence by a dating partner is prevalent among high school girls, which means that adolescents are particularly vulnerable to dating violence. Many researchers have examined the detrimental effects of dating violence on adolescents. Silverman et al. (2004) concluded that experiencing dating violence was significantly associated with poor health behavior by adolescents, such as substance use, unhealthy

weight, and suicidality. In Japan, 24.9 % of adult female subjects and 13.6 % of adult male subjects reported being the victims of dating violence (Cabinet Office 2012). Matsuda (2008) reported that 17.8 % of male and 16.7 % of female Japanese college students admitted using violence against their dating partners. Furthermore, Nakata (2007) found that 14 % of college females and 10 % of high school females participating in the study had experienced dating violence, with 30 % of the participants reporting experience of unwanted sexual activity. Considering that there has been a dramatic increase in early dating and early sexual activity among Japanese adolescents (Ohnishi et al. 2011), as well as considering the detrimental consequences of dating violence on well-being of adolescents, the prevention of dating violence is a major and urgent challenge for Japanese society. Accordingly, it is important that young Japanese adolescents become knowledgeable about dating violence so that they can better recognize the warning signs and seek proper help from their formal and informal support systems.

Twenty reports on adolescent dating violence published in the USA and Canada, between 2000 and 2010, identified 53 risk factors and 6 protective factors (Vagi et al. 2013). The protective factors were relationship factors, including a positive relationship with the adolescent's mother and attachment to school, and other factors such as cognitive function, empathy, school grade point average, and verbal IQ (Vagi et al. 2013). Despite the increasing prevalence of adolescent dating violence, there have been few investigations into the knowledge of dating violence by Japanese adolescents or their ability to recognize the signs of dating violence (Hara et al. 2012).

One of the difficulties when investigating attitudes toward dating violence is how to define the issues. For instance, some researchers consider that dating violence includes psychological and emotional violent behavior during dating relationships (Halpern et al. 2001), while others use a more restrictive definition that only considers physical violence. In the recent literature, contemporary definitions of dating violence have included physical, sexual, and psychological violence (e.g., Lavoie et al. 2002). It seems reasonable to include all three forms of violence given that all three can be significantly detrimental to the development of adolescents.

One Japanese study showed that effective handling of contraception by female college students is associated with a higher level of decision making about contraception, a more equal relationship with their partner, and greater self-efficacy at making future contraceptive decisions. In addition, a higher estimate of the partner's egalitarian gender role attitude is associated with greater ability of women to make decisions about contraception (Nagamatsu et al. 2014). Another study performed in Japan indicated that recognizing intimate partner violence is related to high awareness of the importance of an equal caring relationship and a conservative attitude toward sexual intercourse while in high school (Nagamatsu and Hara 2015a).

Figure 4.7 shows a Japanese model for the prevention of dating violence among young adolescents derived from these studies. The conceptual framework was modified from the Information–Motivation–Behavioral Skills Model of Fisher and colleagues for promoting HIV prevention (Fisher et al. 1999). The concept is that if adolescents receive information and improve their motivation and behavioral skills, they can adopt behavior that prevents dating violence. This diagram is based on hypotheses of the previous studies (Nagamatsu and Hara 2015b), which have been modified by subsequent research. "Information" includes knowledge of dating violence and the timing of education, "motivation" includes the attitude toward an equal relationship and a conservative attitude toward sexual relations, and "behavioral skills" include the ability to recognize dating violence and dating violence resolution skills. Finally, "behavior" is actions leading to the prevention of dating violence.

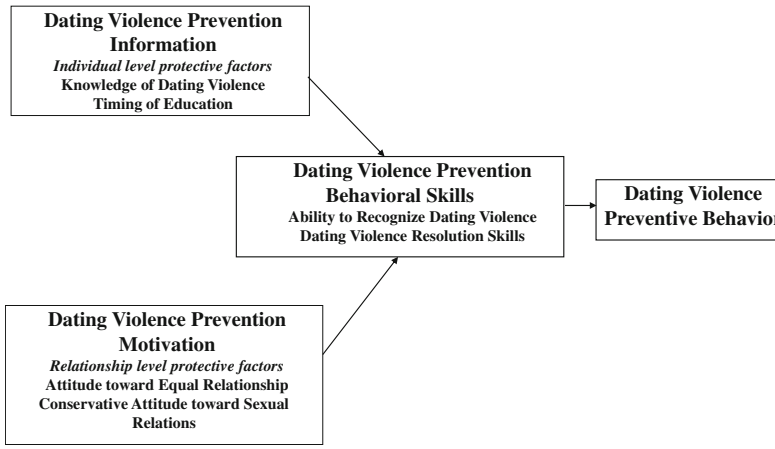


Fig. 4.7 Model of dating violence prevention for young adolescents (Nagamatsu and Hara 2015a)

Sexual Violence and Sex Crimes

In Japan, sexual violence is defined as violent behavior such as rape, indecent acts, and sexual harassment. Article 177 of the Penal Code states that "a person who, through assault or intimidation, forcibly commits sexual intercourse with a female of not less than 13 years of age commits the crime of rape and shall be punished by imprisonment with work for a definite term of not less than three years." Additionally, Article 178 states, "a person who, through assault or intimidation, forcibly commits an indecent act upon a male or female of not less than thirteen years of age shall be punished by imprisonment with work for not less than 6 months but not more than 10 years." According to the FY 2014 white paper on crime, 2.2 women per 100,000 population were victims of rape in 2013, while 0.3 men and 11.4 women per 100,000 population were victims of indecent assault (Ministry of Justice 2014). According to a national survey conducted every 6 years by the Japanese Association for Sex Education (2013), 0.4 and 1.9 % of male and female junior high school students, 0.5 and 4.4 % of male and female high school students, and 2.1 and 5.8 % of male and female college students, respectively, were victims of sexual coercion.

Among all cases of violence or attempted violence carried out with the aim of initiating unwanted sexual contact, including coercion through acts such as offering payment for dates or demanding nude photographs through e-mail or message boards, the number of known cases of rape and indecent assault, the number of arrests, and the number of people arrested have all increased from 2012 to 2013 (National Police Agency 2014). The incidence of crimes such as public indecency and kidnaping involving female victims under 20 years of age is also increasing (National Police Agency 2014). A study by Terada showed that 18.6 % of female third-year junior high school students have met someone they first contacted online (Terado 2014). However, according to a study by the Research and Training Institute of the Ministry of Justice, only 13.3 % of women actually report being the victim of a sex crime (Ministry of Justice 2014). The Survey on Gender-based Violence, a national survey conducted by the Cabinet Office every three years among men and women aged 20 years or older, showed that 7.7 % of women had been forced to have sex against their will, but only 28.4 % of these women talked about the incident with someone and only 3.7 % reported the incident to the police, which indicates that sex crimes are underreported (Cabinet Office 2012). A high percentage of female victims (38.7 %) responded that they were between 10 and 19 years of age at the time of the incident (Cabinet Office 2012). Thus, children who have sexual experiences during early adolescence may be more likely to become victims of sexual

violence. A Japanese study showed that the score for knowledge about dating violence and the score for a conservative attitude toward sexual intercourse were higher among male students and female students who had not experienced dating violence than among the students who had experienced it. Additionally, the score for recognition of the signs of dating violence and the self-esteem score were higher among female students who had not experienced sexual intercourse than among students who had experienced it (Nagamatsu and Hara 2015b). Another study in Japan revealed that people tend to assume that it is natural for men to control and restrain women in romantic relationships (Ida 2007), suggesting that some female students with sexual experience may fail to acknowledge that they are victims of sexual violence.

Support for Victims of Sexual Violence

The Third Basic Plan for Gender Equality, which was approved by the Cabinet Office in December 2010, stipulates that each prefecture must have at least a single one-stop center for victims of sex crimes and sexual violence that operates on the basis of gender equality and advertises and offers counseling services for victims of sex crimes. However, only 22 prefectures, as of 2015, have established a gender equality center run by a local public entity that advertises and offers counseling services for victims of sex crimes. The objectives of offering comprehensive support for victims of sex crimes and sexual violence (e.g., psychological support such as counseling, support related to police investigations, and legal support) at a single location (starting immediately after the incident) are to reduce the physical and psychological stress of victims and help to restore their health, while promoting the reporting of these incidents to the police in order to prevent underreporting (Cabinet Office 2015b). At one-stop support centers, staff members use their professional knowledge to counsel victims over the phone or in person, while listening to the thoughts and feelings of the victims. In addition, they offer different support options to victims who come directly to the one-stop center or are referred by affiliated institutions/groups based on their individual situation, circumstances, and needs. Staff can also provide additional support by connecting victims with affiliated institutions/groups that offer the types of support required by the victims. Since women who have been the victim of a sex crime or sexual violence may have physical injuries, victims can receive a free pregnancy test, STD tests at a gynecology office, free prescriptions for emergency contraception, and drugs to treat STDs (Cabinet Office 2015b).

Educational Programs for the Prevention of Violence

In Japan, there have not been sufficient efforts to prevent relationship violence in junior high schools. Sex education for junior high school students consists of lessons on the growth and development of the body and maturation of sexual function, for first-year students. As well, there are lessons on the prevention of STDs for third-year students, which are taught as part of the health and physical education curriculum. However, students are not taught about healthy relationships, or about violence that may occur in relationships, and how to prevent relationship violence. In fact, very few schools in Japan offer lessons that are specifically about relationship violence (Nosaka 2010). If neither the perpetrator nor the victim knows anything about relationship violence, they cannot change their own behavior or escape from the cycle of violence. “Knowledge” is the first step toward the prevention of relationship violence and should help male and female students to respect each other. Junior high schools need to educate students about the prevention of violence and offer support so that male and female students learn to interact in a mutually respectful manner before starting romantic relationships and becoming sexually active. A recent Japanese study described the effects of including lessons on the prevention of dating violence that were designed to promote mutual respect between male and female students with lessons about the

prevention of STDs (Nagamatsu et al. 2012b). This was done through group education, and the theme of the lesson was "be considerate of your partner and value yourself." An expert discusses the following points with students for 50 min utilizing movies and slides of real-life examples: (1) Examples of real-life situations between partners [with a digital versatile disc (DVD)], (2) Causes of incidents and types of violence, (3) Feelings of the victims and perpetrators, (4) Mechanisms of violence, (5) What is a caring relationship? (6) What is an equal relationship? (7) How to build better relationships? (8) How to talk honestly about your feelings? (9) Using "I" statements (with examples), and (10) How to handle violence when it occurs? At a group study session, students discussed the question "What is an equal relationship?" in order to improve the communication skills for relationships such as refusal and negotiation. After the lesson, with the assistance of the supervising teacher or the school nurse, the expert talked individually with students who had questions about the contents or wrote down questions they wanted to discuss with the expert (Nagamatsu et al. 2012b). Student knowledge and behavior among students who participated in this comprehensive program and students who only received preventive education on sexually transmitted diseases were compared in a before and 3 months after evaluation. Students who received the combined education on the prevention of dating violence with the prevention of sexually transmitted diseases had a higher frequency of conversation with teachers, had an enhanced awareness of dating violence, demonstrated enhanced knowledge of sexually transmitted diseases, and increased recognition of "equality of the sexes," "consideration of others," and "consideration of oneself" while dating compared to students who only received preventive education on sexually transmitted diseases. These results suggest that adding education on the prevention of dating violence is useful for enhancing awareness of this issue and for cultivating equality of the sexes (Nagamatsu et al. 2012b).

Another study demonstrated that recognition of dating violence improved after high school students received education to increase their knowledge about dating violence (Tomiyasu and Suzui 2014). In addition, Suga et al. (2013) developed a dating violence prevention program for junior high schools and investigated its effectiveness. This program aimed to provide students with knowledge about dating violence, accompanied by a role-play session on the theme of respect. It was found that the scores for various categories increased after the program was implemented (Suga et al. 2013).

Because the use of e-mail to send messages and images increases during adolescence, increasing the risk of children becoming the targets of sex crimes, it is necessary for children to properly understand relationship violence from early adolescence and to have a strong grasp of the risks of hidden sexual violence both online and off-line. Considering that both male and female students can become the victims of sex crimes in early adolescence, it is important to include both sexes in these educational efforts. Most people are unable to readily talk to others about sex crimes; hence, it is particularly important to create an environment that makes it easy to talk, to provide the necessary information for counseling, and to provide individual counseling in collaboration with schools. The psychological trauma felt by the victims of sex crimes can have a major effect on development during adolescence, and it is important for victims to receive ongoing support at a local sexual violence support center.

References

Adachi, T. (2007). Women's health during adolescence, dysmenorrhea, lifelong learning program, clinical conference, adolescence. *Journal of the Japan Society of Obstetrics and Gynecology*, *59*(9), 454–460 (in Japanese).

Adachi, T. (2009). Pediatric and adolescent gynecology (pediatric and adolescent school health). *Journal of the Japan Society of Obstetrics and Gynecology*, *61(12)*, 643–654 (in Japanese).

Adachi, T. (2011). Treatment of menstrual disorders in adolescents. *Adolescentology, 29*(3), 251–253 (in Japanese).

Baba, S., Goto, A., & Reich, M. R. (2014). Recent pregnancy trends among early adolescent girls in

Japan. *Journal of Obstetrics and Gynecology Research*, *40*, 125–132 (in Japanese).
Cabinet Office, Gender Equality. (2012). *Bureau: Assessment of intimate partner violence*. Retrieved from http://www.gender.go.jp/public/index.html (in Japanese).
Cabinet Office, Gender Equality. (2014). *FY 2013 survey of internet use among youth*. Published February 2014 (in Japanese).
Cabinet Office, Gender Equality. (2015a). *Drug abuse prevention strategy*. Retrieved from http://www8.cao.go.jp/souki/drug/drug_abuse.html (in Japanese).
Cabinet Office, Gender Equality. (2015b). Guide to opening and operating a one-stop support center for victims of sex crimes and sexual violence. Retrieved from http://www8.cao.go.jp/hanzai/kohyo/shien_tebiki/pdf/1.pdf (in Japanese).
Doki, S., Sho, N., Suzuki, S., Hirai, Y., Kaneko, H., Kobayashi, N., et al. (2012). Relationship between occupational stresses of parents and their children's behavioral problems in adolescence. *Adolescentology*, *30*(3), 305–310 (in Japanese).
Fisher, W. A., Williams, S. S., & Malloy, T. E. (1999). Understanding AIDS risk behavior among sexually active urban adolescents. An empirical test of the information motivation behavioral skills model. *AIDS and Behavior, 3,* 13–23.
Halpern, C. T., Oslak, S. G., Young, M. L., Martin, S. L., & Kupper, L. L. (2001). Partner violence among adolescents in opposite-sex romantic relationships: Findings from the National Longitudinal Study of Adolescent Health. *American Journal of Public Health, 91*(10), 1679–1685.
Hamada, Y., Kobayashi, M., Sato, T., & Ejima, H. (2006). Sexual education for primary school pupils by university students using the peer education method. *Adolescentology*, *24*(1), 221–224 (in Japanese).
Hamada, Y., Nagamatsu, M., & Sato, T. (2015). Factor influencing maternal acceptance of human papillomavirus vaccination for their school-aged daughters in Fukuoka prefecture, Japan. *British Journal of Medicine & Medical Research, 7*(5), 341–354.
Hara, K., Nagamatsu, M., Nakagawa, A., & Saito, H. (2012). How the frequency of conversation between junior high school students and their parents/teachers is related to the students' knowledge, awareness, and behavior regarding dating and sexually transmitted diseases. *Adolescentology*, *30*, 223–234 (in Japanese).
Hata, K. (2003). From the results of a questionnaire on abortions among girls aged 10 to 19. *Japan Association of Obstetricians and Gynecologists*. Retrieved from http://www.jaog.or.jp/sep2012/japanese/members/tanpa/h15/030217.htm
Horikawa, R. (2013). Thinness and eating disorders in adolescent girls. *Clinical Gynecology and Obstetrics*, *67*(7), 663–670 (in Japanese).
Ida, H. (2007). Explaining dating violence as a single-unit theory of love. *Sexuality*, *32*, 16–74 (in Japanese).
Ikuno, T. (2001). Eating disorders. In B. Shimizu (Ed.), *Comprehensive adolescent medicine* (pp. 64–71). Tokyo: Shindan to Chiryo-sha (in Japanese).
Imai, H. (2013). Actual situation of subclinical infection in Japanese youth and high school students. *The Journal of Pediatric Practice*, *71*(8), 1271–1277 (in Japanese).
Inoue, E. (2014). Online crimes against children and countermeasures. *Adolescentology*, *32*(1), 25 (in Japanese).
Inoue, M., Nishihira, T., Kakazu, I., Tamashiro, K., Sono, Y., & Kato, N. (2005). A study of high school students' sexual behavior and its influencing factors. *Adolescentology, 22*, 495–503 (in Japanese).
Ishibashi, Y. (2013). Mental and physical health issues in adolescent girls. *Clinical Gynecology and Obstetrics, 67*(7), 663–670 (in Japanese).
Ishimaru, T. (2003). Menstrual disorders. In K. Sato, & S. Fujimoto (Eds.), *Clinical evidence-based gynecology* (pp. 54–58). Tokyo: Medical View co., Ltd. (in Japanese).
Izumisawa, M., Yamamoto, Y., Miyagi, Y., & Kishimoto, N. (2008). An investigation of menstrual pain in adolescent students and their knowledge of menstruation, and the educational challenges it reveals. *Japanese Journal of Maternal Health*, *49*(2), 347–356 (in Japanese).
Japan Family Planning Association. (2015). *7th survey on lifestyles and attitudes of men and women*. (Family and Health No. 731). Retrieved from http://www.jfpa.or.jp/wp/paper/main/000047.html (in Japanese).
Japan Society of Obstetrics and Gynecology. (Ed.). (2008). *Glossary of terms in obstetrics and gynecology* (pp. 157). Tokyo: Kanehara Shuppan (in Japanese).
Japanese Association for Sex Education. (2013). *White paper on adolescent sex, report of the 7th national survey on adolescent sexual behavior*. Tokyo: Shogakukan (in Japanese).
Kameoka, T. (2014). Psychology of problems faced during adolescence. A*dolescentology, 32*, 80–82 (in Japanese).
Kanagawa Pefectural Government. (2015). Lessons for prevention of smoking, drinking, and drug abuse. http://www.pref.kanagawa.jp/cnt/f1037/ (in Japanese).
Kimura, Y., & Saito, M. (2011). Menstrual symptoms from a school health perspective. *Adolescentology, 29* (3), 261–267 (in Japanese).
Kudo, Y. (2014). Health nursing for adolescent. Systematic training for nurses. *In: Maternal health nursing 1* (pp. 194). Tokyo: Igaku-shoin (in Japanese).
Kure, T., Yamasaki, K., & Kawata, T. (1998). Prevalence and a drug use development model for the study of adolescent drug use in Japan. *Japanese Journal of Public Health, 45*, 870–882.
Lavoie, F., Hebert, M., Tremblay, R., Vitaro, F., Vezina, L., & McDuff, P. (2002). History of family dysfunction and perpetration of dating violence by adolescent boys: A longitudinal study. *Journal of Adolescent Health, 30*, 375–383.
Matsuda, A., Matsuda, T., Shibata, A., Katanoda, K., Sobue, T., Nishimoto, H., & The Japan Cancer Surveillance Research Group. (2013). Cancer incidence and incidence rates in Japan in 2008: A study of

25 population-based cancer registries for the monitoring of cancer incidence in japan (MCIJ) project. *Japanese Journal of Clinical Oncology*, *44*(4), 388–396.

Matsuda, Y. (2008). The fact about perpetrator of dating violence. *Nursing Education, 49,* 718–722 (in Japanese).

Matsumoto, F., Fujimaki, M., Ohba, S., Kojima, M., Yokoyama, J., & Ikeda, K. (2015). Relationship between insulin-like growth factor-1 receptor and human papillomavirus in patients with oropharyngeal cancer. *Head and Neck, 37*(7), 977–981.

Ministry of Education, Culture, Sports, Science and Technology. (2012a). *School health examination survey.* Retrieved from http://www.e-stat.go.jp/SG1/estat/List.do?bid=000001014499&cycode=0 (in Japanese).

Ministry of Education, Culture, Sports, Science and Technology. (2012b). *Junior high school teaching guide for the Japanese course of study: Health education and physical education*. Kyoto: Higashiyama Shobo (in Japanese).

Ministry of Education, Culture, Sports, Science and Technology. (2013). *School Health Examination Survey.* Retrieved from http://www.mext.go.jp/b_menu/toukei/chousa05/hoken/kekka/k_detail/1345146.htm

Ministry of Education, Culture, Sports, Science and Technology. (2014). *Study on problems with guidance of students regarding issues such as problematic student behavior.* http://www.mext.go.jp/b_menu/houdou/26/10/__icsFiles/afieldfile/2014/10/16/1351936_01_1.pdf (in Japanese).

Ministry of Health, Labour and Welfare AIDS Surveillance Committee. (2013). *Report on AIDS epidemic*. Retrieved from http://api-net.jfap.or.jp/status/2013/13nenpo/nenpo_menu.htm (in Japanese).

Ministry of Health, Labour and Welfare. (2000). *Report on the national health promotion movement in the 21st century (Health Japan 21)*. Ministry of Health, Labour and Welfare (in Japanese).

Ministry of Health, Labour and Welfare. (2012). *Overview of vital statistics.* Retrieved from http://www.mhlw.go.jp/toukei/saikin/hw/jinkou/geppo/nengai13/

Ministry of Health, Labour and Welfare. (2013a). *Final evaluation report for healthy parents and children 21*. Retrieved from http://www.mhlw.go.jp/stf/houdou/0000030389.html

Ministry of Health, Labour and Welfare. (2013b). *National health and nutrition survey.* Retrieved from http://www.mhlw.go.jp/stf/houdou/0000067890.html

Ministry of Health, Labour and Welfare. (2013c). *Handbook of health and welfare statistics, public health, numbers and rates of abortion*. Retrieved from http://www.mhlw.go.jp/toukei/youran/indexyk_2_1.html

Ministry of Health, Labour and Welfare. (2013d). *Infectious disease report.* Retrieved from http://www.mhlw.go.jp/topics/2005/04/tp0411-1.html

Ministry of Health, Labour and Welfare. (2014). *Report of vital statistics.* Retrieved from http://www.mhlw.go.jp/toukei/list/81-1.html

Ministry of Justice. (2014). *White paper on crime, FY 2014* (in Japanese).

Miyagawa, I., Ishimaru, T., Kato, H., Kuroshima, J., Kotuji, F., Tamaya T., … & Noda, Y. (1999). Questionnaire on secondary amenorrhea during adolescence. *Journal of the Japan Society of Obstetrics and Gynecology*, *51*, 755–761 (in Japanese).

Nagamatsu, M., Saito, H., & Sato, T. (2008). Factors associated with gender differences in parent-adolescent relationships that delay first intercourse in Japan. *Journal of School Health, 78*, 601–606.

Nagamatsu, M., Sato, T., Nakagawa, A., & Saito, H. (2012a). Family, school, and social factors associated with sexual experience and attitudes to sexual intercourse among Japanese adolescents aged 14 to 15 years. *Adolescentology, 30*(3), 297–304.

Nagamatsu, M., Hara, K. Nakagawa, A., & Nakano, R. (2012b). Efficacy of the program for the prevention of risky sexual behavior: Combined education to cultivate mutual respect between men and women. *Adolescentology, 30*(4), 365–376 (in Japanese).

Nagamatsu, M., Yamawaki, N., Sato, T., Nakagawa, A., & Saito, H. (2013). Factors influencing attitudes to sexual activity among early adolescents in Japan. *Journal of Early Adolescent, 33*(2), 267–288.

Nagamatsu, M., Yano, K., & Hara, K. (2014). Factors associated with contraceptive behavior and decision-making: female college students/married working women and their partners. *Japanese Journal Maternal Health, 54*(4), 519–529 (in Japanese).

Nagamatsu, M., & Hara, K. (2015a). Factors as predictors of recognizing intimate partner violence among junior high school students: Awareness of equal caring relationship and conservative attitudes toward sexual intercourse. *Japanese Journal Maternal Health, 55*(4), 752–758 (in Japanese).

Nagamatsu, M., & Hara, K. (2015b). The factors about dating domestic violence influencing sexual intercourse experience among early adolescents. *Adolescentology, 33(2) ,* 241–249 (in Japanese).

Nakata, K. (2007). Do you know about date domestic violence? Date domestic violence and its prevention education. *Journal of Midwifery, 61*, 54–59.

Nakayama, H., Mihara, S., & Higuchi, S. (2014). Newest findings on internet addiction. *Adolescentology, 32*(1), 34–38.

National Police Agency. (2014). Incidence of common sex crimes, FY 2013 crime statistics report. Published June 2014.

Nosaka, Y. (2010). Interventions for victims and perpetrators of dating violence. *Japanese Journal of Clinical Psychiatry, 39*(3), 281–286.

Ohnishi, M., Nakao, R., Shibayama, S., Matsuyama, Y., Oishi, K., & Miyahara, M. (2011). Knowledge, experience, and potential risks of dating violence among Japanese university students: A cross-sectional study. *BMC Public Health, 11*, 339.

Olson, D. H., McCabbin, H. I., Larsen, A., Muxen, M., & Wilson, M. (1985). *Family inventories. St. Paul, MN:*

Family social science. Minneapolis, MN: University of Minnesota Press.

Ozaki, Y., Ohida, T., Kanda, H., Kaneita, Y., & Kishimoto, T. (2012). Mobile phone use does not discourage adolescent smoking in Japan. *Asian Pacific Journal of Cancer Prevention, 13*(3), 1011–1014.

Shibayama, O., & Yoshiuchi, K. (2013). Weight loss and weight gain associated with changes in diet. *Journal of Therapy, 95*(11), 1838–1934 (in Japanese).

Silverman, J. G., Raj, A., & Clements, K. (2004). Dating violence and associated sexual risk and pregnancy among adolescent girls in the United States. *Pediatric, 114*(2), 220–225.

Suga, T., Morira, N., & Saito, T. (2013). Development of a dating violence prevention program for junior high schools and a research on its effectiveness. *Adolescentology, 31*(4), 384–393 (in Japanese).

Suka, M., Sugimori, H., Yoshida, K., Kanayama, H., Sekine, M., Yamagami, T., et al. (2006). Body image, body satisfaction and dieting behavior in Japanese preadolescents. *Environmental Health and Preventive Medicine, 11*, 24–30.

Suzuki, M., Ohara, C., Horikawa, R., & Ogawa, Y. (2013). Epidemiologic survey of anorexia nervosa via a questionnaire for health education teachers at high schools in Tokyo. *Japanese Journal of Psychosomatic Internal Medicine*, *17*(2), 81–87 (in Japanese).

Suzuki, S. (2009). Adolescent women's Care. In T. Yoshizawa (Ed.), *Fundamental training for midwives: Women's health and care* (pp. 70–71). Tokyo: Japan Nursing Association (in Japanese).

Takeda, T., & Yaegashi, N. (2010). Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in Japanese high school students. *Archives of Women's Mental Health, 13*(6), 535–537.

Takeda, T., Tadakawa, M., Koga, S., Nagase, S., & Yaegashi, N. (2013). Premenstrual symptoms and posttraumatic stress disorder in Japanese high school students 9 months after the great East Japan earthquake. *The Tohoku Journal of Experimental Medicine, 230*(3), 151–154.

Tanaka, T. (2005). What is anorexia nervosa? Diagnostic and treatment guidelines for anorexia nervosa in adolescents. (pp. 41). Tokyo: Bunkodo (in Japanese).

Tasaka, K. (2011). Premenstrual syndrome and premenstrual dysphoric disorder. *Adolescentology, 29*(3), 254–260 (in Japanese).

Terado, T. (2014). Cyberbullying among middle school students. *Adolescentology, 32*(1), 26–32.

Tomiyasu, T., & Suzui, M. (2014). A study of the usefulness of a date violence prevention education for young unmarried people in Japan. *Japanese Journal Maternak Health, 54*, 479–485.

Vagi, K. J., Rothman, E. F., Latzman, N. E., Tharp, A. T., Hall, D. M., & Breiding, M. J. (2013). Beyond correlates: A review of risk and protective factors for adolescent dating violence perpetration. *Journal of Youth and Adolescence, 42*(4), 633–649.

Watanabe, H., Fukuoka, H., Tokumura, M., & Hasegawa, H. (2002). *Report of the 2002 health and labor sciences research grant project*: *The prevalence of anorexia nervosa and measures against it*. Retrieved from http://mhlw-grants.niph.go.jp/miph/search/NIDD01.do?resrchNum=200200375A

Yang, C., Yamawaki, N., Miyata, M., & Sato, T. (2013). Prevalence and risk factors of problematic internet use: A cross-national comparison between Japanese and Chinese freshmen. *Transcultural Psychiatry, 50* (2), 263–279.

Yoshida, M., & Sakakibara, H. (2014). Menstrual disorders in adolescents. *Hormone Frontiers in Gynecology*, *21*(1), 31–35 (in Japanese).

Yoshino, S., Sasahara, S., Tatsukawa, H., Hattori, K., Asukata, N., Morita, N., et al. (2005) A study on the relationship between the family function and the incidence of adolescent problems. *Adolescentology 23,* 234–242 (in Japanese).

Part II

Adolescent Health Conditions and Public Health Response

Injuries in Adolescents: The Public Health Response

5

Joan Ozanne-Smith, Jennifer Pilgrim and Jennie Oxley

Introduction

This chapter reviews all causes of fatal injury in adolescents (10–19 years of age) in the context of other causes of death, both globally and regionally. It also reviews nonfatal injury causes to the extent that currently available data allow and explores issues of data limitations. The public health response to fatal and nonfatal injury in adolescents is discussed within current theoretical approaches and proven effective interventions. While an overview of all adolescent injury is provided, the main focus is on unintentional injury. Case studies are presented for several existing and emerging injury problems during adolescence, and the public health response.

Overview of the Global Injury Problem

Injury causes 5.1 million deaths globally each year with the leading causes being road traffic injury, self-inflicted injury, falls, and drowning (WHO 2008b).

J. Ozanne-Smith (✉) · J. Pilgrim
Department of Forensic Medicine, Monash University Australia, Southbank, Australia
e-mail: joan.ozanne-smith@monash.edu

J. Oxley
Monash Injury Research Institute, Monash University Australia, Clayton, Australia

The burden of fatal injury is not evenly distributed geographically, by income, by gender, or by age. More than 90 % of fatal injuries occur in low- and middle-income countries. Nevertheless, injury is also a leading cause of death in high-income countries, being the most common cause of death, after infancy, in young people.

Males are overrepresented for most injury causes and age groups. The major causes also vary by age group and by severity, so that the rank order of causes also differs between death and serious injury. For every death, there are multiple serious injuries requiring hospitalization, with many of these resulting in permanent disability.

Definition: Injury is defined as damage to the body caused by (acute) exchanges of energy that are beyond the body's resilience (Haddon 1980). The energy may be mechanical, thermal, electrical, ionizing radiation, or chemical (poisoning, asphyxiation).

The emergence of injury as the major cause of death, after the first few months of life until about 44 years of age, in all high- and most low- and middle-income countries has a number of explanations. It can be explained, in part, by the epidemiological transition, where infectious diseases and malnutrition have progressively become lesser threats in most countries. At the same time, motorization and other industrial and lifestyle changes have posed an increased threat, particularly to young persons. Countries that have made less progress through the epidemiological

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_5

transition are multiply burdened with infectious disease and injury, together with the global increase in chronic diseases, as major causes of death and morbidity.

Global injury data for adolescents (10–19 years of age) raise similar concerns of uneven distribution, with major differences by geographic region, particularly between high- and low-income countries, and by socioeconomic status within countries. Likewise, among adolescents, the main causes and risk factors for injury vary between adolescents aged 10–14 years and those between 15 and 19 years of age.

Injury in Adolescence

In 2012, compared with other conditions, injury accounted for four of the top seven causes of death in adolescents. Injuries account for four of the top five causes of death among male adolescents. In each case, the four injury causes are as follows: (1) road traffic injury, (2) self-harm, (3) interpersonal violence, and (4) drowning. The other major causes of death are HIV/AIDS, lower respiratory infections, and diarrheal diseases (WHO 2014b).

Worldwide, an estimated 1.3 million adolescents died in 2012, mostly from preventable or treatable causes (WHO 2014a). Globally, in 2012, the five leading causes of mortality and disability-adjusted life years (DALYs) in adolescents 10–19 year of age contributed 33 % to global mortality, and 25 % to global DALYs for this age group (WHO 2014b). The Disability-adjusted life year, a combined measure of mortality and morbidity, is used as an international measures of the burden of disease. One DALY is equal to one lost year of healthy life.

Globally, road traffic injuries are the leading cause of death among adolescents with some 330 adolescents dying everyday, or over 120,000 deaths a year (WHO 2014a). Among adolescents, road traffic death rates in 2012 were 10.22 deaths per 100,000 of the total population, males accounted for 14.24 deaths per 100,000 adolescent males, and females accounted for 5.93 deaths per 100,000 adolescent females (WHO 2014b).

Self-harm in adolescents resulted in more than 80,000 adolescent deaths in 2012. Overall, the rate was 6.99 deaths per 100,000. For adolescent males, the rate of self-harm was 6.97 per 100,000, while the rate of self-harm for females was 7.02 per 100,000. Rates for both sexes, 15–19 years of age, are particularly high (WHO 2014b). Self-harm ranks among the top five causes of mortality for both sexes and in all regions of the world, except in the African Region, and males in the Eastern Mediterranean Region (WHO 2014b).

Drowning is also a major cause of global adolescent mortality. Some 60,000 adolescents drowned in 2012, two-thirds of them were male (WHO 2014a). Of all adolescent drowning deaths, almost 50 % (29,743) were adolescents 10–14 years old (WHO 2014c). Drowning ranks among the top five causes of death for adolescents in all regions of the world, except the African Region. Even so, the actual mortality rates from drowning among adolescents in the African Region, which is not in the top five causes of death, still accounts for more deaths than in all other regions (WHO 2014b).

In 2004, fire related deaths ranked 12th among all causes of death for 10- to 14-year-old adolescents. Death by fire was the 7th leading cause of death for 15- to 19-year-olds (WHO & UNICEF 2008).

In 2004, falls and unintentional poisonings were ranked 11th and 12th, respectively, for 15- to 19-year-olds (World Report on Child Injury Prevention 2004 data from GBD 2008 estimates) (WHO & UNICEF 2008).

Within the burden of injury, deaths are just the tip of the iceberg or the apex of the injury pyramid (see Fig. 5.1). Morbidity rates are known to be far greater than those for mortality for all injury causes. A few causes, however, such as drowning and venomous snakebite have high case fatality rates.

In terms of DALYs, global road traffic injuries are the number one ranked cause of death and injury among those 15–19 years of age. Combined with 10- to 14-year-olds, the total DALYs are 886.6

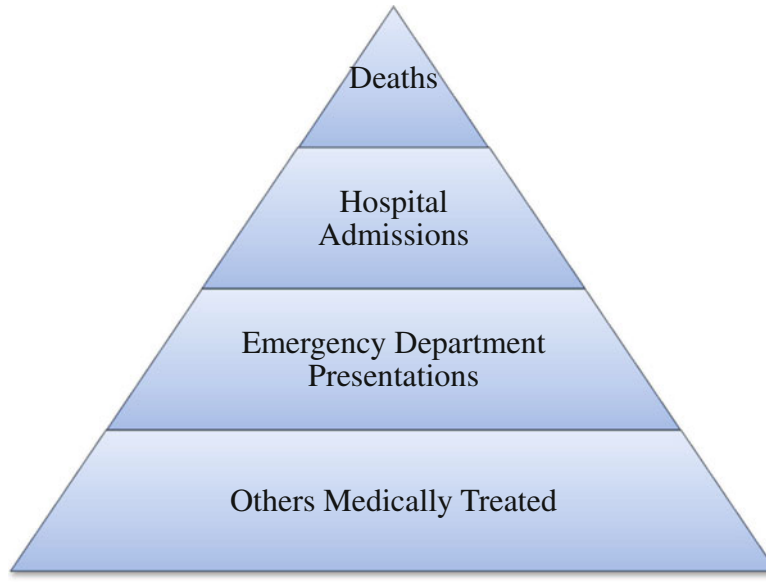


Fig. 5.1 The injury pyramid

per 100,000 road traffic injury among adolescents. This DALY rate is second only to unipolar depressive disorders at 1024.0 per 100,000 globally in 2012. The road traffic injury DALY rates are substantially higher for males than for females in both age groups. Road injury DALYs rank in the top five in all regions, with the highest rates found in the African Region (WHO 2014b).

Among unintentional injuries, drowning is also an important cause of DALYs, particularly among 10- to 14-year-old males (WHO 2014b). To see the changes in adolescent injury rates and DALYs over the period 2000–2012, see Tables 5.1 and 5.2 (WHO 2014b).

Known risk factors for adolescent injuries include male, age, socioeconomic status, geographical setting (urban/rural), drugs/alcohol use, independence/risk-taking behaviors, peer group, over-confidence, and novices (drivers and workers).

Injury Data Issues

There are many concerns with injury data that tend to cause undercounting and masking of the true size and nature of the problem. Only 85 of 194 WHO member countries report mortality data in a form adequate for the identification of injury deaths by mechanism, such as drowning (WHO 2014c). Where available, vital statistics provide generally complete but limited information, and further detailed information on the circumstances of injury is required for problem definition and targeted intervention.

Injury problems and their solutions risk being overlooked or neglected if masked by the way in which data are presented. Adolescent mortality data are not readily extractable from routinely reported WHO data which reports mortality estimates in the age groups 5–14 years and 15–

Table 5.1 Top 5 causes of mortality (per 100,000) 10- to 19-year-olds, 2000 and 2012

2000		2012	
Road injury	10.561	Road injury	10.222
Self-harm	8.599	HIV/AIDS	8.283
Lower respiratory infections	7.043	Self-harm	6.992
Drowning	6.986	Lower respiratory infections	5.495
Diarrheal diseases	6.811	Interpersonal violence	5.479

Source Health for the World's Adolescents (WHO 2014b)

Table 5.2 Top 5 causes of DALYs (per 100,000) 10–19 year of age, 2000 and 2012

2000		2012	
Unipolar depressive disorders	1011.8	Unipolar depressive disorders	1024. 0
Road injury	919.3	Road injury	886.6
Iron deficiency anemia	724.5	Iron deficiency anemia	661.3
Self-harm	650.3	HIV/AIDS	660.1
Diarrheal diseases	581.3	Self-harm	529.2

Source Health for the World's Adolescents (WHO 2014b)

24 years and not the more applicable 10–14 and 15–19 years of age. As shown in Table 5.3 (using 2004 WHO data) and by the above summary data, major causes of injury and disease vary by developmental age group in adolescence when examined in five-year age groupings and particularly when the all cause rankings are extended to the top 15 causes.

Another issue masking the extent of some causes of injury, particularly drowning, and hence potential preventive measures is an underestimation of deaths from this cause due to the structure of the International Statistical Classification of Diseases and Related Health Problems (ICD 10) (WHO 2015). According to ICD 10, although the cause of death is drowning, the external cause, in many cases, is required to be classified otherwise (i.e., such as those caused by flood disasters, or motor vehicle crashes into bodies of water). For example, WHO reports that the number of drowning deaths in countries such as Australia, Finland, and the USA would increase by 39–50 % if drowning deaths recorded under other causes (e.g., water transport incident) were reported as drowning deaths (WHO 2014c).

In addition, the aggregated reporting of self-inflicted (intentional) injuries (see Tables 5.1, 5.2, and 5.3) masks their *injury mechanism*, such as poisoning, which is also a significant mechanism for unintentional injury—ranked 13th for all causes of death among 15- to 19-year-old adolescents (WHO & UNICEF 2008; WHO 2014b). As discussed by Cohen and colleagues, an integrated approach addresses injury mechanisms (such as poisoning), including both intentional and unintentional cases. The mechanism could significantly impact the underlying contributors to both types of injury (Cohen et al. 2003). In the poisoning example, some deaths may be due to the same agents, whether intentional or unintentional, and potentially amenable to similar measures to prevent harmful access.

These issues are significant for the public health response to adolescent injury since the general theoretical approach (utilizing the public health approach) relies heavily on data for problem identification, monitoring, targeting of interventions, and evaluation of their effectiveness. Reasonably, complete and accurate mortality and morbidity data are also necessary for cost of injury studies, which in turn inform public policy.

Yet, another problem with available global injury data for adolescents is the inability to identify some key activities in which the injured were engaged at the time of injury, particularly sport and work despite these being major activities for injury occurrence in this age group.

Although there have been few comprehensive studies on injuries in adolescents, further information can be gleaned for high-income countries where good data and epidemiological studies are available. These, for instance, identify sports (Watt 1992) and work-related injuries among major concerns, where these remain blind spots in Global Burden of Disease studies and routine ICD-based reporting.

In a population-based Canadian study, adolescents were shown to be overrepresented for work injuries compared with other age groups; after controlling for confounding, job characteristics (Breslin and Smith 2005). In Salminen's 2004 review, the majority of 63 nonfatal studies reviewed showed that young workers had a higher injury rate than older workers. Twenty-nine of 45 studies on fatal occupational injuries indicated that young workers had a lower fatality rate than older workers. These findings were supported by a more recent Australian study where the death rate for

Table 5.3 Leading causes of death for adolescents, World 2004

Rank	10-14 years	15-19 years
1	lower respiratory infections	road traffic injuries
2	road traffic injuries	self-inflicted injuries
3	drowning	violence
4	malaria	lower respiratory infections
5	meningitis	drowning
6	HIV/AIDS	tuberculosis
7	tuberculosis	fire-related burns
8	diarrheal diseases	HIV/AIDS
9	protein-energy malnutrition	leukemia
10	self-inflicted injuries	meningitis
11	leukemia	maternal hemorrhage
12	fire-related burns	falls
13	war	poisonings
14	violence	abortion
15	trypanosomiasis	epilepsy

Source WHO (2008a), WHO & UNICEF (2008)

young workers 15–24 years of age was 1.24 per 100,000 employed person-years compared to an all-age death rate of 2.22 per 100,000 employed person-years (Ehsani et al. 2013). The injury status of young workers in low- and middle-income countries (LMIC) remains largely unknown.

Young workers are also of concern to the International Labor Organization, which indicates "young workers deserve special consideration because they are:

- Still growing, and their organs, muscles, and bones are still developing;
- More sensitive to certain chemicals, toxic fumes, or noise than adults;
- Quick to move—sometimes without thinking—and more likely to take risks;

- Less experienced and need supervision and training;
- Bored more easily and may let their attention wander" (International Labour Office 2008).

Rationale for Injury Prevention

Injury is the leading cause of death in adolescents. Injuries rank in the top causes of death, morbidity, and disability including road traffic injury, self-harm, drowning, falls, burns, and poisoning. The burden of premature death and disability from injury results in high rates of DALYs (see Table 5.2) with associated high economic and social costs and high demands on the healthcare system.

Effective interventions to prevent injuries are known for many of the major causes (see examples below). Some of these have been shown to be cost-effective, and others are yet to be studied for cost-effectiveness or cost/benefits.

Importantly, sustainable public health gains can be made in the relatively short term by preventing injuries (e.g., seat belt laws, motorcycle helmet laws, and enforcement). Many other public health interventions can have a long lag time before mortality and morbidity can be significantly reduced.

Framework for Injury Prevention

A number of international frameworks are relevant to adolescent injury prevention, including the United Nations Sustainable Development Goals (2015), Convention on the Rights of the Child (1989), and Decade of Action on Road Safety (2011). Aspects relevant to injury prevention are supported by authoritative world reports on road safety, violence, child injury, and drowning prevention; a number of resolutions to support these frameworks and reports have been passed by the United Nations and World Health Assembly.

The post-2015 United Nations Sustainable Development Goals (2015–2030) will follow-on from the Development Goals (2000–2015) (UN 2014). Several goals and targets are particularly relevant to injury prevention.

Relevant Targets in the U.N. Sustainable Development Goals (2015–2030)

(3.4) By 2030, reduce by one-third premature mortality from noncommunicable diseases through prevention and treatment and promote mental health and well-being.

(3.5) Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol.

(3.6) By 2020, halve the number of global deaths and injuries from road traffic accidents.

(6.1) By 2030, achieve universal and equitable access to safe and affordable drinking water for all (*likely also to protect against drowning*).

(9.1) Develop quality, reliable, sustainable, and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all.

(11.1) By 2030, ensure access for all to adequate, safe, and affordable housing and basic services and upgrade slums;

(11.2) By 2030, provide access to safe, affordable, accessible, and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities, and older persons;

(11.3) By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated, and sustainable human settlement planning and management in all countries (UN 2015).

Similarly, the 64th World Health Assembly Resolution on child injury prevention (0–17 years of age) urges Member States to prioritize the prevention of child injuries; implement the recommendations of the WHO/UNICEF World report on child injury prevention; ensure that national data collection across relevant sectors quantifies the demographic, socioeconomic,

and epidemiological profile of the burden of, risk factors for, and costs of child injury; assure that the resources available are commensurate with the extent of the problem; and develop and put into practice a multisectorial policy and plan of action with realistic targets (World Health Assembly 2011).

The resolution also calls upon the WHO Director-General to collaborate with Member States in establishing science-based policies to prevent child injury; to encourage research, build capacity, and mobilize resources for child injury prevention; and to establish a network with organizations of the United Nations system, international development partners, and nongovernmental organizations to ensure effective coordination and implementation of activities for child injury prevention.

Likewise of direct relevance, the United Nations Decade of Action for Road Safety 2011–2020, using a broad strategy (based on 5 pillars: road safety management, safer roads and mobility, safer vehicles, safer road users, and post-crash response), aims to save five million lives during this decade, taking into account current rising trends (Zarocostas 2011).

Principles of Injury Prevention

Injury, both unintentional and intentional, can be simply understood as resulting from a chain of events, where interruption at any point in this chain will potentially prevent or control injuries. Epidemiological studies reveal clear common patterns of injury causation and outcome in the vast majority of cases, and many of these are preventable by known effective means.

This principle was captured schematically by Haddon (1970) with the development of one of the most important and widely used frameworks for injury prevention, Haddon's matrix (see Table 5.4). The environment factor is, more recently, often expressed separately as physical and social environments.

Table 5.4 Haddon's Matrix

Phases	Factors		
	Human	Vehicle (vector)	Environment
Pre-event			
Event			
Post-event			

By means of examining the risk and contributing factors acting during the various phases of an injury event, it is possible to also identify countermeasures and strategies that could be applied at that point to break the chain of events leading to injuries.

Haddon also described 10 strategies for injury prevention (Robertson 1983):

- Prevent the creation of the hazard in the first place,
- Reduce the amount of the hazard being brought into being,
- Prevent the release of the hazard that already exists,
- Modify the rate or spatial distribution of release of the hazard from its source,
- Separate in time or space the hazard and that which is to be protected,
- Separate the hazard and that which is to be protected by interposition of a material barrier,
- Modify relevant basic qualities of the hazard,
- Make what is to be protected more resistant to damage from the hazard,
- Begin to counter the damage already done by the environmental hazard, and
- Stabilize, repair, and rehabilitate the object of the damage.

As for other diseases, the Public Health Approach is applicable to injury prevention (i.e., surveillance, identification of risks and protective factors, development and evaluation of interventions, implementation [scaling up effective interventions and evaluating their impact and

cost-effectiveness], review of the residual problem), particularly when considered also with public policy approaches (Bugeja et al. 2011).

Intervention Strategies

Intervention strategies to prevent injuries from occurring or to protect the person in the event of a crash, fall, or other potential harm can be considered under several major categories:

- *Environmental changes or design changes to products or systems* are likely to be among the most effective interventions for several reasons. Firstly, these are regarded as passive measures—once in place, the individual does not need to take further regular action. Such interventions include safer car designs, building of dual highways, safe goal installations on football fields, safe heights and designs of playground equipment, safety glass installed for low-level glass windows, doors and furniture, swimming pool fences, and barriers to prevent falls from heights. An important advantage of such design changes is the cumulative effect over time as many injuries can be prevented during the life of the safety feature. Further, there is no socioeconomic discrimination with regard to safe designs in public places or mandatory design rules for work, home, or leisure products.
- *Legislation/regulation and enforcement* are essential to many effective injury prevention strategies. Examples include road rules such as alcohol and drug prohibitions or limits when driving; building regulations and inspections, such as allowable unprotected fall heights, electrical circuitry, smoke alarms; and occupational health and safety legislation.
- *Organizational change* is particularly relevant to work, sports, and leisure activities, such as replacement of piecework with salaried work, and modified rules for junior sports. Graduated licensing for young motor vehicle drivers is an example of combining organizational change and regulation.
- *Behavior change* is a necessary component for many injury prevention strategies. This requires ongoing action by the individual. Wearing a helmet for motorcycling or bicycling requires action by the rider on every riding occasion. Nevertheless, behavior change strategies may succeed in producing long-term effects. Use of seat belts, use of sunscreen lotions, and teaching young people to swim are acquired safety behaviors that appear to have been sustained and even passed successfully between generations in Australia and in other developed countries.
- *Advocacy, education, incentives*. All injury prevention strategies, at some point in their development, implementation, or enforcement, require advocacy by concerned groups and individuals to enhance public awareness, stimulate public debate, and secure action. Social marketing has been a particularly successful strategy in road safety, especially through television advertisements coordinated with police enforcement.

An underlying problem that complicates these intervention strategies is that adolescents are a relatively hard-to-reach group to promote behavior change and education strategies, particularly after they leave the school structure.

Criteria for Prioritization of Interventions

Given the enormity of the injury problem and the multiple causes and settings, as well as the range of activities during which injuries occur, criteria are needed to guide the prioritization and selection of problems to address and countermeasures and intervention strategies to implement.

Some or all of these criteria should be met:

- Frequency and rate of injuries is high;
- Severity/burden is high;
- The problem is amenable to proven interventions;
- Cost-effective countermeasures and implementation strategies are available;

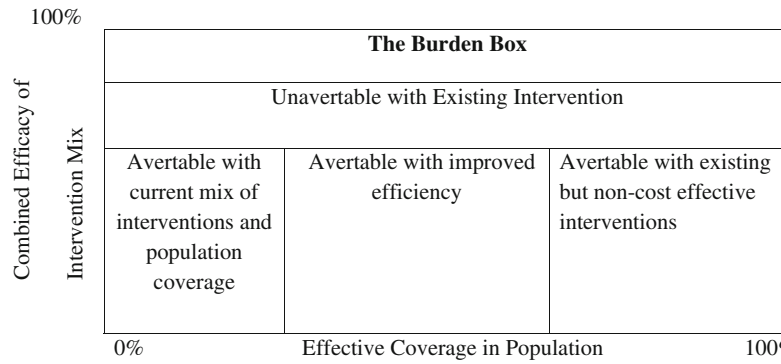


Fig. 5.2 The burden box for injury. *Source* Ad Hoc Committee on Health Research Relating to Future Intervention Options and World Health Organization (1996)

- Action is in line with government policies;
- Relevant infrastructure and capacity are available;
- The intervention is accessible, affordable, and acceptable;
- Substantial reach of the intervention is achievable.

While countermeasures such as seat belts, motorcycle helmets, safety glass, and impact-absorbing play surfaces are transferrable to all settings, implementation strategies, such as legislation and enforcement practices or product safety systems, do not necessarily translate directly between countries and regions.

Although much is known about injury prevention, the outcomes could be much improved if known effective countermeasures were implemented more widely and with greater efficiency (see Fig. 5.2). Further research is required to enable prevention of those injuries where there are currently no known solutions or solutions are too costly and as new technologies and other environmental or societal changes create new hazards.

Who Owns the Problem and the Solutions?

The burden of injury falls very largely on the health sector. The cost of medical care for the injured is enormous, particularly for hospital-admitted injury and ongoing disability. There are also major costs to individuals and families, where an injury to a family member can tip the whole family into poverty, and societal costs such as lost productivity are high.

The solutions to the injury problem, however, lie largely with other sectors, which actually "own" the solutions, such as policies, legislation/regulations and enforcement, and codes of practice. Table 5.5 shows examples of which jurisdictions and sectors are likely to have control over potential solutions to specific types of injury cause. Nongovernment sectors such as industry and the media also have important roles to play in injury prevention with regard to the manufacture and supply of safe products and highlighting the preventability of injuries, respectively.

Multisector collaborations and partnerships are clearly required to prevent injuries. Health, for example, can provide coordination, leadership, data, monitoring, epidemiological studies, treatment, and advice to government. The health sector is generally best placed to coordinate strategic planning, interventions, and evaluations as it is the only sector, other than finance, that has a jurisdictional role across all injury causes and settings.

Strategic Principles and Policies

Whichever sector leads injury prevention strategic planning and action, it will need to seek the whole of government approval of strategies and intersectorial integration, coordination, and support for their implementation, including through legislation, regulation, policy, standards, codes,

Table 5.5 Schema for jurisdictional clustering of injuries

Sector	Injury cause (mechanism)					
	Road traffic	Self-harm	Drowning	Falls	Burns	Poisoning
Health	X	X	X	X	X	X
Transport	X					
Planning	X		X	X	X	
Labor	X		X	X	X	X
Agriculture	X		X			X
Building				X		
Sport			X	X		
Marine	X		X		X	
Product safety			X	X	X	X
Education	X	X	X	X	X	X
Local government	X		X	X		X
Finance	X	X	X	X	X	X
Social protection	X	X	X	X	X	X

and resource provision. Awareness will need to be raised about the problem of injury and consensus built around possible solutions in the development of coherent, effective responses involving all partners, including multiple relevant government departments, industry, non-government organizations (NGOs), media, and the community.

Because of the size of the problem, and to encourage full commitment by sectors, a strategic approach should seek to achieve legislative appropriations from central government or other substantial resources for injury and violence prevention. It may also be necessary to redirect activities from problems that have been largely solved or are of lesser significance.

The provision of quality data and analysis to all relevant sectors will be fundamental to the facilitation of evidence-based planning. In addition, it will be necessary to build and sustain the capacity to deliver evidenced injury and violence prevention knowledge and effective interventions and to conduct research and program evaluation on causes, interventions, programs, and practices.

Review of progress will also be important, including continuous monitoring of the implementation process and setting times for review of progress on implementation, impacts, and outcomes with feedback into the strategic process. Guides on developing policies to prevent injuries and violence have been published by the WHO, including the specific targeting of ministries of health (Butchart et al. 2007; WHO 2006).

Tertiary Prevention: Care of the Injured

While this chapter focuses on primary injury prevention (pre-energy exchange) and secondary prevention (protection in the event of injury exchange), injuries are not always preventable. Tertiary prevention or amelioration of injuries post-event cannot be overlooked.

Key strategies in improving outcomes of the injured include timely rescue, transport, and integrated care of the injured. Integrated care extends from immediate care (including first aid) through triage, transfer, definitive care to rehabilitation, and disability management.

Integrated care of the injured, potentially within a designated trauma system, requires seamless transitions between its components and the usual healthcare system. Active quality

assurance is needed to ensure optimal performance of each component and interaction between components.

Specific Issues in Adolescent Injury Prevention

Much is known about successful injury prevention in the key areas of concern with respect to adolescents. Reductions in adolescent deaths from some injury causes have been shown by data comparing global rates between 2012 and 2002 that there has been a reduction in mortality rates in road traffic injury, self-harm, and drowning (see Table 5.1).

A 1995 systematic review of published and unpublished literature on the effectiveness of injury prevention interventions in the population aged 15–24 years found the apparent most effective measures to be legislative and regulatory controls in road, sport, and workplace settings, though few rigorously evaluated studies using injury outcome measures were available. Environmental engineering measures on the road and in sports have relatively low implementation costs and result in fewer injuries at all ages. There is little evidence that purely educational measures reduced injuries in the short term (Munro et al. 1995).

The risk factors and exposures to harm differ substantially between the age groups 10–14 and 15–19, and between geographic and socioeconomic settings. Specific effective injury countermeasures and implementation strategies relevant to adolescents are summarized in the WHO/UNICEF report on child injury prevention (WHO & UNICEF 2008), the WHO report on road traffic injury prevention (WHO 2008a), United Nations Decade of Action on Road Safety (United Nations Road Safety Collaboration 2011), and the WHO global report on drowning (WHO 2014c).

For road safety, these effective interventions include introducing (and enforcing) minimum drinking-age laws; setting (and enforcing) lower blood alcohol concentration (BAC) limits for novice drivers and zero tolerance for offenders; utilizing seat belts; wearing motorcycle and bicycle helmets; enforcing a reduction of speed around schools, residential areas, play areas; separating different types of road users; introducing (and enforcing) daytime running lights for motorcycles; and introducing graduated driver licensing (GDL) systems (see case study below).

Fewer interventions, which have been proven to be effective, are available and relevant to the adolescent age groups for other injury mechanisms. For burns, these include setting (and enforcing) laws on smoke alarms and treating patients at dedicated burn centers. Likely effective interventions for falls prevention include implementing housing and building codes, and implementing and enforcing occupational health and safety regulations.

It is clear that further research is required to specifically define the circumstances and mechanisms of injury for leading causes, such as falls, burns, drowning, and poisoning in adolescents, and to identify or develop and test countermeasures and implementation strategies. This is particularly true for low-income and middle-income countries.

While poisoning is a broader problem, a case study is presented below on alcohol and drugs, which represents an important component of the problem during adolescence. Nevertheless, much more work is needed on poisoning related to agricultural and domestic chemicals and the neglected yet substantial problem of snakebite.

Information on drowning and drowning prevention has been recently updated by the WHO Global report on drowning, and its key findings are summarized as the fourth case study below (WHO 2014c).

Case Studies

Detailed case studies in areas of ongoing concerns and emerging issues and solutions are discussed below. These include the general issue of alcohol and drugs, which affect many aspects of the lives of adolescents, particularly including both intentional and unintentional injury. The

second is the use of graduated driving licenses as an intervention to reduce the unacceptably high road injury toll in novice drivers. The third case study is of the new and emerging problem of death and injury associated with electric bikes as a new and affordable means of transport in low- and middle-income countries. Finally, recent findings on drowning and recommendations for prevention are outlined.

Alcohol and Drugs

The role of alcohol and drugs in fatal and nonfatal injury, directly or indirectly, is pervasive across countries in the older adolescents between 15 and 19 years of age, as it is also in young adults.

Recent research in Victoria, Australia, has described some current and emerging issues in drug-related deaths and injuries. The use of alcohol and other drugs by adolescents is an issue of major public health concern in Australia and throughout the world. In addition to drug overdose and other direct health risks, drug use in adolescents is associated with unintentional injury, intentional self-harm, assault, addiction, unprotected sex, homelessness, mental health problems, and other antisocial behaviors (Bonomo 2005; DeWit et al. 2000; Lagasse et al. 2006; Remy et al. 2013; Tyler 2008).

Alcohol, tobacco, and cannabis are the most commonly used drugs by Australian adolescents. A survey of Australian secondary students between 12 and 17 years of age found that 80 % had tried alcohol, 14 % had used cannabis, and 23 % had smoked cigarettes (White and Bariola 2012). One in five adolescents purchased the cigarettes themselves, despite Australian legislation, which prohibits the sale of cigarettes to persons under 18 years of age.

Alcohol is arguably the most significant risk factor for adolescent injury and death, leading to acute toxicity, falls, transport accidents, suicide, and liver and brain damage with sustained use (NHMRC 2007). The main risk factor for incident DALYs for those 10- to 24-year-olds was alcohol (7 % of DALYs) (Gore et al. 2011).

Recent research indicated that among drinkers 16–17 years of age, 20 % have experienced injury and 10 % regret a sexual experience related to alcohol use (Bonomo et al. 2001). Australian adolescents are more likely to binge drink than adults, increasing the risk of short-term harm (Pedersen and von Soest 2015). In 2010, Australians had their first full serve of alcohol at around 17 years of age (Australian Institute of Health and Welfare 2011). By 2013, this dropped well below the legal drinking age, to 15.7 years of age (AIHW 2014).

It is not uncommon for young people who use drugs to begin with less stigmatized substances such as alcohol or marijuana and progress onto "harder" drugs such as methamphetamine or heroin (Minet 1995). Studies have linked adolescent drinking with density of alcohol outlets, pricing, legal purchase age, and advertising exposure (Anderson et al. 2009; Huckle et al. 2008). In Australia, alcohol-advertising restrictions are minimal compared with other countries. Even so, alcohol is affordable and available, and there have been few major changes in recent policy to deter adolescent drinking. However, drinking and driving laws are strong for young drivers and well enforced (Doran et al. 2010; Livingston 2014; Winter et al. 2008).

Recent evidence, however, suggests an increase in the proportion of Australian adolescents who abstain from alcohol use (Livingston 2014). This may be related to a significant policy change in Australia which introduced legislation prohibiting the provision of alcohol to an adolescent under 18 years of age by any adult other than their parents. In addition to guidelines from the National Health and Medical Research Council, the Council recommends that adolescents should abstain from alcohol entirely until they are a minimum of 15 years of age (NHMRC 2007).

The use of alcohol contributes to the three leading causes of death among adolescents, unintentional injury, suicide, and homicide (Chikritzhs et al. 2003; Miller et al. 2007; Stephens 2006). In the decade preceding 2002, an estimated 2643 Australians aged 15–24 years died from an alcohol-attributable injury or disease caused by high-risk drinking (Chikritzhs and Pascal 2004).

Similarly, the major concerns for adolescent injury involving both alcohol and drugs are violence, road traffic incidents, and self-harm (Bonomo et al. 2001; Drummer et al. 2004; Haw and Hawton 2011; Kodjo et al. 2004; Livingston and Room 2009). A survey of adolescents in the USA demonstrated that alcohol use in both males and females, and particularly in pre-teenagers, is a strong predictor of suicidal ideation and completed suicide (Swahn et al. 2004).

Adolescents using alcohol and other drugs are at an increased risk for aggressive behaviors such as assault, compared with other age groups (Sheppard et al. 2008). A Finnish study showed that almost two-thirds of 18-year-olds involved in a violent incident were using alcohol at the time (Mattila et al. 2005). An Australian study attributed nine adolescent deaths (aged 19 years and under) to a single punch assault (i.e., four involved alcohol and two involved cannabis use) (Pilgrim et al. 2014a, b). These adolescents comprised 10 % of the total cohort.

Road traffic accidents are another leading cause of death for adolescents. In the 12 months prior to March 2015 in the state of Victoria, Australia, 122 road users aged less than 17 required hospitalization after a traffic accident. In the same period, there were 28 fatalities of road users who were less than 20 years of age (TAC 2015). Young people contribute more to road traffic fatalities (31 %) than road users who are over 25 years of age (1 %) (ABS 2009).

Nonmedical use of prescription drugs is a growing problem among adolescents, particularly in the USA (Valdez 2014) as is nonprescription drugs, such as weight loss pills, purchased via the Internet (Grundlingh et al. 2011). Although preventable injuries in children and adolescents have decreased in recent years, drug poisoning in this group continues to rise. This has been attributed to an increase in availability and prescribing of pharmaceuticals with subsequent misuse, in addition to a common misperception that prescription drugs are "safe" (Valdez 2014). Pharmaceutical opioids, stimulants, and benzodiazepine misuse present the most significant problems in the developed nations, raising questions regarding the prescribing of these drugs to young people (Banta-Green 2012; Murphy et al. 2014; Valdez 2014).

There has been increasing concern regarding reports of "pharming" or "Skittles parties" among teens. This nonmedical use of prescription and over-the-counter drugs to get high often involves benzodiazepines such as Xanax (alprazolam), Valium (diazepam), stimulant-type ADHD drugs including Ritalin (methylphenidate) and Adderall (dextroamphetamine), as well as opioids including methadone, Duragesic (fentanyl), and Oxycontin (oxycodone) (Laughlin 2008; Levine 2007). Between 2001 and 2011, oxycodone alone killed 43 Australians under the age of 24 (Pilgrim et al. 2014a, b). Misuse of cough syrups, which contain dextromethorphan, commonly known as "Robo-tripping," is also a problem among secondary school students, particularly in the USA (Schwartz 2005).

Illicit drugs, however, represent a far greater concern than pharmaceuticals in Australia. A 2007 survey showed that around 23 % of people 15–24 years of age reported using illicit drugs in the previous 12 months. This was almost double the proportion of people using illicit drugs over 25 years of age. Cannabis remains the most commonly used illicit substance among young people, with use reported in Australians as young as 12 years of age and increasing with age (White and Bariola 2012).

Ecstasy (3,4-methylenedioxymethamphetamine) is the next most often used drug. Around 9 % of adolescents use Ecstasy. This is followed by amphetamine-type stimulants including the potent form of methamphetamine known as ice (~3 % of 12- to 17-year-olds). Other illicit substances such as heroin, hallucinogens, and cocaine are less popular with adolescents, who have a lifetime use of less than 3 % in Australia (AIHW 2014). Despite the low incidence of use among this demographic, a study of cocaine deaths in Victoria, Australia, revealed that individuals as young as 16 died from illicit drugs (Pilgrim et al. 2012).

New psychoactive substances (NPS), such as synthetic cannabinoids (e.g., Kronic, K2, Spice) and designer cathinones or "bath salts" (e.g., "meow meow," mephedrone, methylenedioxypyrovalerone, methylone), are also a growing problem among adolescents in Australia and Europe. While these NPS are not routinely

monitored in national survey reports, the literature indicates a growing trend in their use in young people (Brewer and Collins 2014; Forrester 2013).

Arguably, one of the most significant illicit drug-related harms in adolescents is the indirect physical injury that results from the acute psychological and behavioral effects. NPS in particular are associated with profound psychotic effects leading to risky behaviors including suicide (Thornton et al. 2012). While 15- to 19-year-old males have relatively low drug-related hospitalization rates in Australia compared with other age groups, females in this age group along with those of 20–24 years have the highest rates of drug-related hospitalization, demonstrating the prevalence of drug-related intentional self-harm and accidental toxicity in this demographic (ABS 2009). In this age group, drug use may predict certain risk factors in adolescents. Prevention strategies to manage or reduce harmful drug use in this age group may also prevent other related problems in the future.

Drug prevention strategies with evidence for positive outcomes include family education and interventions, school drug education, behavior management, and mentorship programs. At a legislative level, there are drug-related regulations, policing and enforcement strategies, including restrictions on the sale and marketing of alcohol and tobacco to reduce access to substances, as well as diversion of young offenders into early-intervention services. While individual, peer, and family factors appear to be the most common predictors of substance abuse in adolescents, school-based programs are the most commonly evaluated early-intervention strategies (Toumbourou et al. 2002).

The most effective drug education programs and prevention strategies for adolescents generally incorporate two or more initiatives, or target two or more risk factors, and are maintained over multiple years (Eddy et al. 2000; Flynn et al. 1997). They also involve activities that target the developmental stage of youth in order to prevent problems later in adolescence. Unfortunately, the long-term nature of successful drug prevention initiatives focusing on adolescents is not always achievable within a single term of government, requiring long-term management of community expectations and investment often between interchanging governments (Arthur and Blitz 2000).

While prevention of harmful use of drugs and alcohol is the ideal preventive measure, it is currently also essential to intervene at later points in the chain of events, which lead to injury. For example, rates of drug-fueled gun violence and suicide among adolescents are low in Australia, largely due to tight gun control laws, which restrict access (Ozanne-Smith et al. 2004). Another example is the graduated drivers' license system in Victoria. In addition, initiatives to restrict high-powered vehicles, increased penalties, and incentives to encourage safer driving are used to reduce highway traffic injury and death.

Road Safety

While much has been accomplished in road safety in high-income countries (HIC), LMIC are still experiencing problems associated with rapid motorization similar to those experienced by HICs more than half a century ago. There was a gap of around 20 years between the onset of rapid motorization in HICs, with an associated rapid rise in the road toll and the number of highway traffic injuries and deaths in HICs beginning to decline in the 1970s (e.g., Australia, Germany, USA, New Zealand). It may be possible for LMICs to reverse the rising trends in highway traffic injuries and deaths in a shorter span of time, if current best practices in road safety are applied.

Graduated Licensing Case Study

Road deaths and serious injuries among young novice drivers and passengers remain unacceptably high and represent a serious public health issue worldwide. Worldwide statistics show that the crash rate for novice drivers far exceeds crash and fatality rates of older (middle aged) drivers.

Novice drivers are involved in approximately four times the number of auto crashes than safer age group drivers. This is particularly so among the newest drivers (this group's crash rate is about three times higher than that of older novice drivers (Braitman et al. 2008; Mayhew et al. 2003; McCartt et al. 2003; Williams 1999)). Elvik (2010)) has recently suggested that the injury rate of novice drivers is up to ten times higher than for the safest age group and that these rates might even be increasing.

More importantly, a consistent finding worldwide is the extremely high crash and fatality rate during the first year of driving, most pronounced in the first few months of driving, related to the disproportionately high risk in the time period after licensure. During this critical first year of independent driving, it has been estimated that novice drivers are 33 times more likely to be involved in a casualty crash compared with learner drivers (Gregersen et al. 2003; Mayhew et al. 2003; Sagberg 2000). Indeed, Fig. 5.3 outlines the high proportion of Victorian drivers involved in casualty crashes in their first years of driving compared with learner and fully licensed drivers, and the rapid decline in casualty crashes involving probationary drivers as years of licensure increase. The sharp decline in crash rates after six months of driving with a probationary license suggests that even limited driving experience has substantial beneficial effects in risk reduction.

Over the last three or four decades, there have been many initiatives suggested and implemented internationally to address the overrepresentation of young novice drivers in casualty crashes. Traditional measures predominantly have relied upon education and have had limited success in regulating the risky driving behavior of the young novice driver. More recently, the implementation and subsequent reform of Graduated Licensing Systems (GDL) has been a popular approach and appears to have been effective in addressing the young driver problem. In addition, police enforcement of safe driving practices, improved road design and operation (particularly measures aimed to reduce speeding and barrier systems to reduce injuries in single-vehicle run-off-road crashes), and improvements in vehicle safety (advanced crash avoidance and occupant protection), as well as parental involvement, promotion of eco-driving, and the use of telematics (in conjunction with insurance incentives) all show promise to varying degrees.

The primary aim of GDL models is to reduce the inflated crash and injury risk of young novice drivers by allowing driving only in low-risk circumstances when first driving and gradually increasing exposure to higher-risk conditions based on increasing experience and maturity. The most common GDL components include nighttime restrictions, restrictions on BAC levels, and peer passenger restrictions.

As an example, the State of Victoria, Australia, structures the licensing process so that learning to drive is fully supported and restrictions are placed on learner and novice solo drivers. Key features of Victoria's graduated licensing system include the following:

- Compulsory 120 h of logged supervised learner driving experience, including 10 h at night;
- A minimum 12-month learner permit period (available from 16 years of age);
- A two-stage probationary license—P1 (minimum one year) and P2 (minimum three years) (P1 available from 18 years of age if 12-month learner permit period completed).
- P1 restrictions include the following: restriction on carrying more than one peer passenger, no mobile phone use, and prohibition from driving certain vehicles, zero BAC, and no towing.
- P2 restrictions include the following: no mobile phone use, zero BAC, and prohibition from driving certain vehicles (VicRoads 2014).

Restrictions in GDL programs appear to have had a major and successful impact in reducing young driver crashes and associated injuries to themselves and others, during the learner and intermediate stages of licensure with many demonstrations of success, albeit to varying degrees (Simons-Morton et al. 2006; Williams et al. 2012). The evaluations of GDL in many

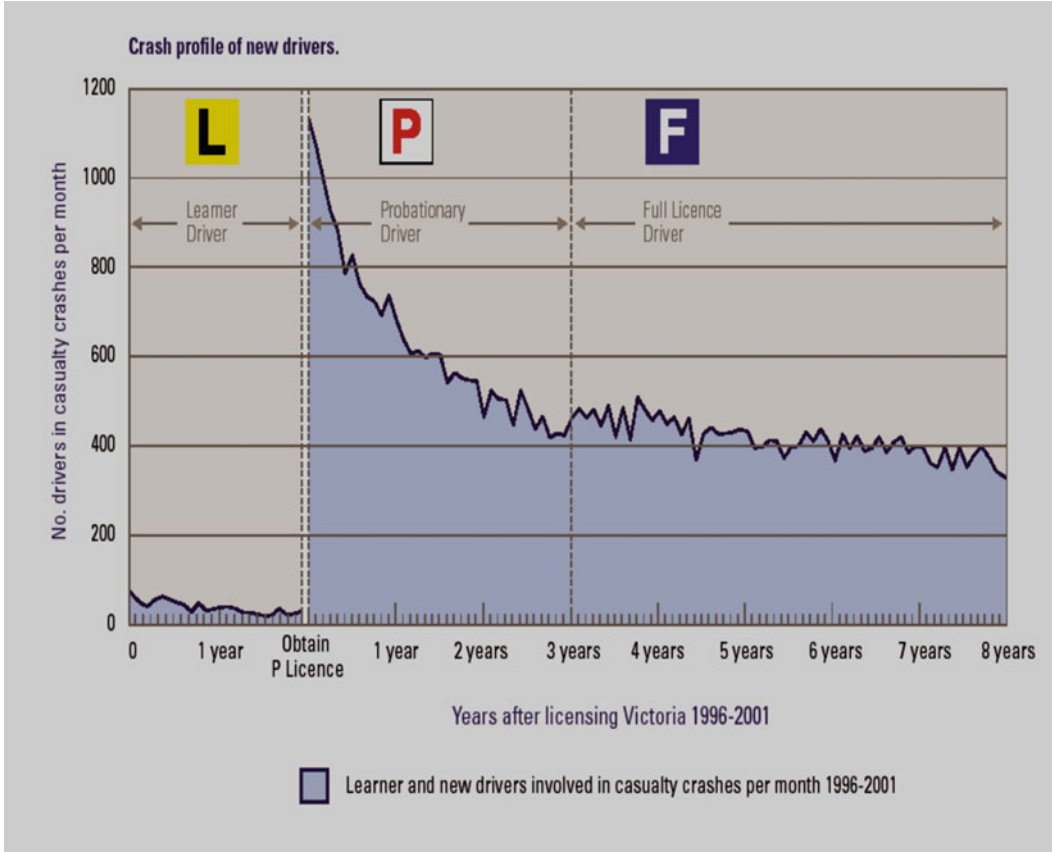


Fig. 5.3 Casualty crashes per month by driving experience. *Source* VicRoads (2005)

countries have shown that if experience is gained under supervision and under safe circumstances, the crash involvement after licensing is reduced compared with gaining the experience alone. These conclusions apply to nighttime restrictions, restrictions on BAC levels, and passenger restrictions. Furthermore, it appears that these systems enjoy wide public support, especially among parents of teen drivers (Simons-Morton et al. 2006).

Despite the evidence suggesting that the GDL system is likely the most effective intervention for young driver safety and has had a major impact in reducing novice driver fatal and serious injury crashes, there is still more to learn about the effectiveness of GDL when used under various conditions.

It is important to learn what factors limited GDL effectiveness. To date, limiting factors include the following: (1) the ongoing debate as to which components are most effective; (2) the fact that implementation of GDL systems varies across countries and jurisdictions and key measures which have been shown to reduce crashes have not been implemented universally or systematically; and (3) evidence that GDL systems are constrained in their ability to fully address a number of important risk factors. For example, low compliance to elements of the GDL is a factor that has often been cited as limiting the potential efficacy of passenger restrictions. Further, some components have a strong evidence base, including the increased minimum duration for the learner period, mandating minimum supervised driving hours, zero BAC limits, and increasing the minimum period for a provisional license. Contrariwise, some other GDL components are not well supported by evidence,

including speed restriction on learner drivers, high-performance vehicle (HPV) restrictions, extending the 120-h requirement for supervised driving, among others.

Furthermore, there is evidence that complementary initiatives may enhance the benefits of GLS. Williams (2011), in his commentary on the effectiveness of GLS, suggests that changing existing policies such as tightening of GLS restrictions (especially nighttime and passenger restrictions) or better preparing young people for licensed driving during the learner period may be of benefit. He adds, however, that these are likely to be modest. He suggests that an additional approach may be to raise licensing ages directly or extending the learner phase. These initiatives, he suggests, are key elements of enhanced GDL systems and likely to achieve major gains in reducing novice driver fatalities and serious injuries.

Electric Bike Case Study

Among other goals, one of the United Nations Decade of Action goals is to reduce traffic fatalities by 5 million before 2020. This has become more difficult because of the emerging threats from the rapid introduction of electric bikes (E-bikes) in the developing world. The increase in E-bikes is associated with higher injury rates. The emerging injury problem associated with E-bikes is currently concentrated in China. Approximately 90 % of all E-bikes are in China, where most are manufactured (Research in China 2011). The E-bikes are sure to spread, particularly in LMIC. Along with increasing numbers of E-bikes, higher injury rates will probably follow.

In China, in Zhejiang province alone, there were more than 900 fatal and more than 6000 nonfatal injuries associated with E-bikes in 2011. This number is predicted to rise rapidly as the number of registered E-bikes is increasing by about 25 % each year (Research in China 2011). In 2010, E-bike-related fatalities were contributing almost 7 % to total road traffic deaths in China (Yang et al. 2014). This proportion has likely grown much larger in recent years.

Feng and colleagues' (2010) analysis of the Hangzhou, China, Police Bureau's data on electric-bicycle-related injuries and deaths in 2004–2008 found a significant annual increase in electric-bicycle-related casualty rates of 2.7 per 100,000 population. At the same time, overall road traffic and manual-bicycle-related deaths and injuries decreased.

Another study in a rural hospital in Suzhou, China, found that hospitalized E-biker injuries (n = 323) accounted for 57.2 % of road traffic hospitalizations over a 6-month study period, October 2010–April 2011. Common injuries included fractures and head injuries (Du et al. 2014).

Although no age breakdown is available from currently published research, the legal age to operate an E-bike in China is 16. Children can be carried legally as passengers up to 12 years of age, thus involving adolescents at both ends of the age range.

E-bikes of the moped type are inexpensive compared with other motorized vehicles. As well, they provide relatively environmentally friendly and affordable mobility to millions of users. There were more than 120 million E-bikes operating in China by 2011 (Research in China 2011). Worldwide usage is predicted to reach 466 million E-bikes by 2016 (Hurst and Wheelock 2010).

Males are overrepresented in at-fault E-bike crashes (Yao and Wu 2012). Large observational surveys and surveys of E-bike owners over multiple sites have identified numerous dangerous riding practices including speeding, carrying passengers or oversized cargo, running red lights, low helmet-wearing rates (9 % winter; 2 % in summer), riding in wrong direction (counter to traffic), and mobile phone use (Yang et al. 2014). Road rule violations by E-bikers were reported to be commonplace (26.6 %) in an observational study in Suzhou, China (Du et al. 2013).

Du and colleagues note that future road safety policy intervention and behavioral education are warranted in China to encourage road rule compliance and E-biker helmet use without sacrificing mobility (Du et al. 2014). The scale of this emerging problem of E-bike-related injuries is

likely to grow as the manufacture and export of this product increase in the absence of effective targeted design rules and road safety responses.

Drowning Prevention Case Study

Globally, in 2012, 60,000 adolescents aged 10–19 died from drowning (WHO 2014a). The *Global report on drowning: Preventing a leading killer* (WHO 2014c) identified drowning as one of the 10 leading causes of death of children and young people in every region of the world in 2012. Males, however, are twice as likely to drown as females. The rate of drowning among 10- to 14-year-old males was as high as 6.7 per 100,000 in Thailand in 2006, and 9.0 per 100,000 for 15- to 19-year-old males in the Russian Federation in 2010. The report states that, "Drowning is a serious and neglected public health threat claiming the lives of 372,000 people a year worldwide. More than 90 % of these deaths occur in LMIC."

The report also identifies ten actions to prevent drowning, most of which have relevance for adolescents in general and to teenage mothers and their young children (WHO 2014c). Community-based action includes the following:

- Install barriers controlling access to water;
- Provide safe places (for example a crèche) away from water for preschool children, with capable child care;
- Teach school-age children basic swimming, water safety, and safe rescue skills;
- Train bystanders in safe rescue and resuscitation;
- Strengthen public awareness of drowning and highlight the vulnerability of children;
- Implement effective policies and legislation;
- Set and enforce safe boating, shipping, and ferry regulations;
- Build resilience and manage flood risks and other hazards locally and nationally;
- Coordinate drowning prevention efforts with those of other sectors and agendas (for example, bridges over creeks and streams enable safe passage to school and also facilitate the developmental need to transport produce to market); and
- Develop a national water safety plan.

Conclusion

Drowning has been identified as a neglected public health problem, significant among causes of adolescent death. To reduce drowning requires global and local leadership for prevention and increased donor knowledge of the problem and its effective solutions.

Future Developments and Barriers to Adolescent Injury Prevention

Although progress has been made in the reduction of adolescent injury deaths in the period 2000–2012, many barriers to further reductions continue to persist, including the unknown status of the problem in many LMIC.

Data and Research

In order to better recognize the size and nature of the adolescent injury problem and to increase and refine the public health response, it will be necessary to continue to improve relevant data systems, including their coverage and completeness, quality and reliability, and the amount of detail collected on the circumstances of fatal and nonfatal injury.

Capacity

Opportunities for prevention are lost when there is limited capacity to provide data on topical issues and few or no designated personnel and relevant training to manage data collection and analysis, conduct relevant research to develop policy responses, and implement and evaluate interventions. Capacity needs to be developed across all of these areas, particularly in the developing world.

Action

Practical recognition of the importance of adolescent injury and its prevention by key national and international agencies is a prerequisite for action. Relevant data should be made available widely to researchers, public health practitioners, industry, media, and others who need it. For greatest effect, the data should be available for the five-year age groupings of 10–14 and 15–19.

Proven Effective Countermeasures Should Be Implemented

For this "hard-to-reach age group," many of the solutions will require public health leadership, and coordination with other health sector interests and with many other sectors outside of health. Organizational and structural change will be particularly important components in strategic approaches, such as the development of new design standards, codes of practice, skills training (e.g., driving, swimming, and rescue training), occupational health and safety legislation, and new laws and regulations to support their implementation and enforcement.

For injury countermeasures that have already been proven effective (such as motorcycle helmet wearing; wearing of personal flotation devices in small boats), the implementation methods may warrant evaluation, particularly if a substantial residual problem persists.

This chapter identified injury as one of the most important public health issues for adolescents. Barriers to progress highlighted in this chapter included the following: lack of available good-quality data, lack of research, and lack of a targeted public health response to numerous injury mechanisms. In conclusion, because of the multisectorial nature of adolescent injury, the solutions will need to be multisectorial in nature. Ongoing strong leadership and coordination will be essential. Effective initiatives will need to be supported by substantial and designated funding.

References

ABS. (2009). *Risk taking by young people, 2008.* Australian Social Trends. Australian Bureau of Statistics. Retrieved from http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4102.0Chapter5002008

Ad Hoc Committee on Health Research Relating to Future Intervention Options, & World Health Organization. (1996). *Investing in health research and development: Report of the Ad Hoc Committee on health research relating to future intervention options, convened under the auspices of the World Health Organization* (Vol. 96). Geneva: World Health Organization.

AIHW. (2011). *2010 National drug strategy household survey report*. Drug statistics series no. 25. Cat no. PHE 145. Canberra, Australia: Australian Institute of Health and Welfare. Australian Institute of Health and Welfare. Retrieved from http://www.aihw.gov.au/publication-detail/?id=32212254712

AIHW. (2014). *National drug strategy household survey detailed report 2013*. Canberra, Australia: Australian Institute of Health and Welfare. Retrieved from http://www.druginfo.adf.org.au/topics/quick-statistics#sthash.qCGcoAxA.jZutbl1P.dpuf

Anderson, P., de Bruijn, A., Angus, K., Gordon, R., & Hastings, G. (2009). Impact of alcohol advertising and media exposure on adolescent alcohol use: A systematic review of longitudinal studies. *Alcohol and Alcoholism, 44*(3), 229–243. doi:10.1093/alcalc/agn115.

Arthur, M. W., & Blitz, C. (2000). Bridging the gap between science and practice in drug abuse prevention through needs assessment and strategic community planning. *Journal of Community Psychology, 28*(3), 241–255. doi:10.1002/(SICI)1520-6629(200005)28:3<241:AID-JCOP2>3.0.CO;2-X.

Banta-Green, C. J. (2012). Adolescent abuse of pharmaceutical opioids raises questions about prescribing and prevention. *Archives of Pediatrics and Adolescent Medicine, 166*(9), 865–866. doi:10.1001/archpediatrics.2012.590.

Bonomo, Y. (2005). Early onset of drinking increases alcohol use in adulthood. *Evidence-Based Mental Health, 8*(4), 98.

Bonomo, Y., Coffey, C., Wolfe, R., Lynskey, M., Bowes, G., & Patton, G. (2001). Adverse outcomes of alcohol use in adolescents. *Addiction, 96*(10), 1485–1496. doi:10.1080/09652140120075215.

Braitman, K., Kirley, B., McCartt, A., & Chaudhary, N. (2008). Crashes of novice teenage drivers: Characteristics and contributing factors. *Journal of Safety Research, 39*(1), 47–54.

Breslin, F. C., & Smith, P. (2005). Age related differences in work injuries: A multivariate, population based

study. *American Journal of Industrial Medicine, 48* (1), 50–56.

Brewer, T. L., & Collins, M. (2014). A review of clinical manifestations in adolescent and young adults after use of synthetic cannabinoids. *The Journal of Pediatric Nursing, 19*(2), 119–126. doi:10.1111/jspn.12057.

Bugeja, L., McClure, R., Ozanne-Smith, J., & Ibrahim, J. (2011). The public policy approach to injury prevention. *Injury Prevention, 17*(1), 63–65.

Butchart, A., Harvey, P., Krug, E., Meddings, D., Peden, M., & Sminkey, L. (2007). *Preventing injuries and violence: A guide for ministries of health*. Geneva: World Health Organization. http://www.who.int/violence_injury_prevention/publications/39919_oms_br_2.pdf

Chikritzhs, T., Catalano, P., Stockwell, T., Donath, S., Ngo, H., Young, D., et al. (2003). Australian alcohol indicators, 1990–2001. In *Patterns of alcohol use and related harms for Australian states and territories*. Perth: National Drug Research Institute, Curtin University of Technology. Australian States and Territories.

Chikritzhs, T., & Pascal, R. (2004). *Trends in youth alcohol consumption and related harms in Australian jurisdictions, 1990–2002*. National alcohol indicators, Bulletin No. 6. Perth: National Drug Research Institute, Curtin University of Technology.

Cohen, L., Miller, T., Sheppard, M., Gordon, E., Gantz, T., & Atnafou, R. (2003). Bridging the gap: Bringing together intentional and unintentional injury prevention efforts to improve health and well being. *Journal of Safety Research, 34*(5), 473–483.

DeWit, D. J., Adlaf, E. M., Offord, D. R., & Ogborne, A. C. (2000). Age at first alcohol use: A risk factor for the development of alcohol disorders. *American Journal Psychiatry, 157*(5), 745–750.

Doran, C. M., Hall, W. D., Shakeshaft, A. P., Vos, T., & Cobiac, L. J. (2010). Alcohol policy reform in Australia: What can we learn from the evidence? *The Medical Journal of Australia, 192*(8), 468–470.

Drummer, O. H., Gerostamoulos, J., Batziris, H., Chu, M., Caplehorn, J., Robertson, M. D., et al. (2004). The involvement of drugs in drivers of motor vehicles killed in Australian road traffic crashes. *Accident Analysis and Prevention, 36*(2), 239–248.

Du, W., Yang, J., Powis, B., Zheng, X., Ozanne-Smith, J., Bilston, L., … Wu, M. (2014). Epidemiological profile of hospitalised injuries among electric bicycle riders admitted to a rural hospital in Suzhou: A cross-sectional study. *Injury Prevention, 20*(2), 128–133.

Du, W., Yang, J., Powis, B., Zheng, X., Ozanne-Smith, J., Bilston, L., et al. (2013). Understanding on-road practices of electric bike riders: An observational study in a developed city of China. *Accident Analysis and Prevention, 59*, 319–326.

Eddy, J., Reid, J. B., & Fetrow, R. A. (2000). An elementary school-based prevention program targeting modifiable antecedents of youth delinquency and violence: Linking the interests of families and teachers (LIFT). *Journal of Emotional and Behavioral Disorders, 8*(3), 165–176.

Ehsani, J., McNeilly, B., Ibrahim, J., & Ozanne-Smith, J. (2013). Work-related fatal injury among young persons in Australia, July 2000–June 2007. *Safety Science, 57*, 14–18.

Elvik, R. (2010). Why some road safety problems are more difficult to solve than others. *Accident Analysis and Prevention, 42*(4), 1089–1096.

Feng, Z., Raghuwanshi, R., Xu, Z., Huang, D., Zhang, C., & Jin, T. (2010). Electric-bicycle-related injury: A rising traffic injury burden in China. *Injury Prevention, 16*(6), 417–419.

Flynn, B. S., Worden, J. K., Secker-Walker, R. H., Pirie, P. L., Badger, G. J., & Carpenter, J. H. (1997). Long-term responses of higher and lower risk youths to smoking prevention interventions. *Preventive Medicine, 26*(3), 389–394. doi:10.1006/pmed.1997.0159.

Forrester, M. B. (2013). Adolescent synthetic cathinone exposures reported to Texas poison centers. *Pediatric Emergency Care, 29*(2), 151–155. doi:10.1097/PEC.0b013e3182808ae2.

Gore, F. M., Bloem, P. J., Patton, G. C., Ferguson, J., Joseph, V., Coffey, C., et al. (2011). Global burden of disease in young people aged 10–24 years: A systematic analysis. *The Lancet, 377*(9783), 2093–2102.

Gregersen, N., Nyberg, A., & Berg, H. Y. (2003). Accident involvement among learner drivers—An analysis of the consequences of supervised practice. *Accident Analysis and Prevention, 35*(5), 725–730.

Grundlingh, J., Dargan, P. I., El-Zanfaly, M., & Wood, D. M. (2011). 2, 4-dinitrophenol (DNP): A weight loss agent with significant acute toxicity and risk of death. *Journal of Medical Toxicology, 7*(3), 205–212.

Haddon, W. (1970). On the escape of tigers: An ecologic note. *American Journal of Public Health, 60*(12), 2229–2234.

Haddon, W. (1980). Advances in the epidemiology of injuries as a basis for public policy. *Public Health Reports, 95*(5), 411.

Haw, C. M., & Hawton, K. (2011). Problem drug use, drug misuse and deliberate self-harm: Trends and patient characteristics, with a focus on young people, Oxford, 1993–2006. *Social Psychiatry and Psychiatric Epidemiology, 46*(2), 85–93. doi:10.1007/s00127-009-0170-x.

Huckle, T., Huakau, J., Sweetsur, P., Huisman, O., & Casswell, S. (2008). Density of alcohol outlets and teenage drinking: Living in an alcogenic environment is associated with higher consumption in a metropolitan setting. *Addiction, 103*(10), 1614–1621. doi:10.1111/j.1360-0443.2008.02318.x.

Hurst, D., & Wheelock, C. (2010). *Electric two-wheel vehicles (electric bicycles, mopeds, scooters, and motorcycles): Market analysis and forecasts*. Boulder, CO: Pike Research.

International Labour Office. (2008). *Working with youth: Tips for small business owners*. Geneva: International Labour Office.

Kodjo, C. M., Auinger, P., & Ryan, S. A. (2004). Prevalence of, and factors associated with, adolescent physical fighting while under the influence of alcohol or drugs. *Journal of Adolescent Health, 35*(4), 346. e11–346.e16.

Lagasse, L. L., Hammond, J., Liu, J., Lester, B. M., Shankaran, S., Bada, H., … Das, A. (2006). Violence and delinquency, early onset drug use, and psychopathology in drug-exposed youth at 11 years. *Annals of the New York Academy of Sciences, 1094*, 313–318. doi:10.1196/annals.1376.041

Laughlin, M. (2008). "Pharming" endangers teens. *Oklahoma State Medical Association, 101*(6–7), 164.

Levine, D. A. (2007). "Pharming": The abuse of prescription and over-the-counter drugs in teens. *Current Opinion in Pediatrics, 19*(3), 270–274. doi:10.1097/MOP.0b013e32814b09cf.

Livingston, M. (2014). Trends in non-drinking among Australian adolescents. *Addiction, 109*(6), 922–929. doi:10.1111/add.12524.

Livingston, M., & Room, R. (2009). Variations by age and sex in alcohol-related problematic behaviour per drinking volume and heavier drinking occasion. *Drug and Alcohol Dependence, 101*(3), 169–175. doi:10.1016/j.drugalcdep.2008.12.014.

Mattila, V. M., Parkkari, J., Lintonen, T., Kannus, P., & Rimpela, A. (2005). Occurrence of violence and violence-related injuries among 12–18 year-old Finns. *Scandinavian Journal of Public Health, 33*(4), 307–313. doi:10.1080/14034940510005851.

Mayhew, D., Simpson, H., & Pak, A. (2003). Changes in collision rates among novice drivers during the first months of driving. *Accident Analysis and Prevention, 35*(5), 683–691.

McCartt, A., Shabanova, V., & Leaf, W. (2003). Driving experience, crashes and traffic citations of teenage beginning drivers. *Accident Analysis and Prevention, 35*(3), 311–320.

Miller, J. W., Naimi, T. S., Brewer, R. D., & Jones, S. E. (2007). Binge drinking and associated health risk behaviors among high school students. *Pediatrics, 119*(1), 76–85. doi:10.1542/peds.2006-1517.

Minet, J. (1995). Teens cite illicit drugs as major worry, see marijuana as gateway. *American Journal of Health-System Pharmacy, 52*(20), 2170, 2174.

Munro, J., Coleman, P., Nicholl, J., Harper, R., Kent, G., & Wild, D. (1995). Can we prevent accidental injury to adolescents? A systematic review of the evidence. *Injury Prevention, 1*(4), 249–255.

Murphy, K. D., Byrne, S., McCarthy, S., Lambert, S., & Sahm, L. J. (2014). Benzodiazepine use among young attendees of an Irish substance treatment center. *Journal of Addiction Medicine, 8*(3), 199–204. doi:10.1097/ADM.0000000000000025.

NHMRC. (2007). *Australian alcohol guidelines for low-risk drinking*. Canberra: National Health and Medical Research Council.

Ozanne-Smith, J., Ashby, K., Newstead, S., Stathakis, V. Z., & Clapperton, A. (2004). Firearm related deaths: The impact of regulatory reform. *Injury Prevention, 10*(5), 280–286. doi:10.1136/ip.2003.004150.

Pedersen, W., & von Soest, T. (2015). Adolescent alcohol use and binge drinking: An 18-year trend study of prevalence and correlates. *Alcohol and Alcoholism, 50*(2), 219–225. doi:10.1093/alcalc/agu091.

Pilgrim, J. L., Gerostamoulos, D., & Drummer, O. H. (2014a). "King hit" fatalities in Australia, 2000–2012: The role of alcohol and other drugs. *Drug Alcohol Dependence, 135*, 119–132. doi:10.1016/j.drugalcdep.2013.11.019.

Pilgrim, J. L., Woodford, N., & Drummer, O. H. (2012). Cocaine in sudden and unexpected death: A review of 49 post-mortem cases. *Forensic Science International, 227*(1), 52–59. doi:10.1016/j.forsciint.2012.08.037.

Pilgrim, J. L., Yafistham, S. P., Gaya, S., Saar, E., & Drummer, O. H. (2014b). An update on oxycodone: Lessons for death investigators in Australia. *Forensic Science, Medicine and Pathology, 11*(1), 3–12. doi:10.1007/s12024-014-9624-x.

Remy, L., Narvaez, J., Sordi, A., Guimaraes, L. S., Von Diemen, L., Surratt, H., … Pechansky, F. (2013). Correlates of unprotected sex in a sample of young club drug users. *Clinics (Sao Paulo), 68*(11), 1384–1391. doi:10.6061/clinics/2013(11)01

Research in China. (2011). *Industry report on electric bicycles in China, 2010–2011*. Beijing: Research in China (CYQ003). Retrieved from http://www.researchinchina.com/Htmls/Report/2011/6134.html

Robertson, L. (1983). *Injuries—Causes, control strategies, and public policy*. New York: Free Press.

Sagberg F. (2000). Evaluation of 16 years age limit for practising with private car: Accident risk after driver's test. *Institute of Transport Economics. TOI rapport*, 498.

Salminen, S. (2004). Have young workers more injuries than older ones? An international literature review. *Journal of Safety Research, 35*(5), 513–521.

Schwartz, R. H. (2005). Adolescent abuse of dextromethorphan. *Clin Pediatrics (Phila), 44*(7), 565–568.

Sheppard, M. A., Snowden, C. B., Baker, S. P., & Jones, P. R. (2008). Estimating alcohol and drug involvement in hospitalized adolescents with assault injuries. *Journal of Adolescent Health, 43*(2), 165–171. doi:10.1016/j.jadohealth.2007.12.016.

Simons-Morton, B., Hartos, J., Leaf, W., & Preusser, D. (2006). Increasing parent limits on novice young drivers cognitive mediation of the effect of persuasive messages. *Journal of Adolescent Research, 21*(1), 83–105.

Stephens, M. B. (2006). Preventive health counseling for adolescents. *American Family Physician, 74*(7), 1151–1156.

Swahn, M. H., Simon, T. R., Hammig, B. J., & Guerrero, J. L. (2004). Alcohol-consumption behaviors and risk for physical fighting and injuries among adolescent drinkers. *Addictive Behaviors, 29*(5), 959–963. doi:10.1016/j.addbeh.2004.02.043.

TAC. (2015). *Searchable road trauma statistics, online crash database*. Geelong, VIC: Transport Accident Commission Transport Accident Commission. Accessed March 20, 2015. Retrieved from http://www.tac.vic.gov.au/road-safety/statistics/online-crash-database

Thornton, S. L., Gerona, R. R., & Tomaszewski, C. A. (2012). Psychosis from a bath salt product containing flephedrone and MDPV with serum, urine, and product quantification. *Journal of Medical Toxicology, 8*(3), 310–313. doi:10.1007/s13181-012-0232-4.

Toumbourou, J. W., Snow, P., Sanci, L., & Williams, J. (2002). Literature review of early intervention for young people with drug problems, prepared by the Centre for Adolescent Health for the Victorian Department of Human Services.

Tyler, K. A. (2008). Social network characteristics and risky sexual and drug related behaviors among homeless young adults. *Social Science Research, 37* (2), 673–685.

UN. (2015). *Sustainable development summit 2015*. New York: United Nations. Retrieved from http://www.who.int/mediacentre/events/meetings/2015/un-sustainable-development-summit/en/

United Nation. (1989). *Convention on the rights of the child*. New NY: United Nation. Retrieved from http://wunrn.org/reference/pdf/Convention_Rights_Child.PDF

United Nations. (2014). *Synthesis report of the secretary-general on the post-2015 sustainable development agenda* (Vol. Sixty-ninth session, Agenda items 13 (a) and 115). New York: United Nations. Retrieved from http://www.un.org/en/ga/search/view_doc.asp?symbol=A/69/700&referer=http://www.un.org/en/documents/&Lang=E

United Nations Road Safety Collaboration. (2011). *Decade of action for road safety 2011–2020*. Geneva: World Health Organisation.

Valdez, A. (2014). Rx for injury: Adolescent prescription drug misuse. *Journal of Emergency Nursing, 40*(5), 497–499. doi:10.1016/j.jen.2014.05.011.

VicRoads. (2005). *Young driver safety and graduated licensing discussion paper*. Retrieved from file:///Users/AndrewCherry/Downloads/GraduatedLicensingSystemEvaluationIntermReport.pdf

VicRoads. (2014). *Factsheet. Graduated licensing system: Helping young drivers to be safe drivers.* Retrieved from http://www.nationaldrivingacademy.com.au/blog-driving-tips/the-relevance-of-post-licence-driver-training

Watt, G. (1992). Injuries sustained by young people in Victoria, 1986–1992: An overview of fatal and non-fatal injuries to adolescents and young adults. Clayton, Victoria: Monash University, Accident Research Centre (MUARC). Retrieved from http://trid.trb.org/view.aspx?id=1201329

White, V. M., & Bariola, E. (2012). Australian secondary school students' use of tobacco, alcohol, and over-the counter and illicit substances in 2011 report. National Drug Strategy, Department of Health and Ageing.

WHO. (2006). *Developing policies to prevent injuries and violence: Guidelines for policy-makers and planners*. Geneva: World Health Organization.

WHO. (2008a). *World report on road traffic injury prevention; 2004*. Geneva: World Health Organization.

WHO. (2008b). *World health statistics, 2008*. Geneva: World Health Organization.

WHO. (2014a). *Adolescents: Health risks and solutions. Fact sheet No. 345*. Geneva: World Health Organization. Retrieved from http://www.who.int/mediacentre/factsheets/fs345/en/

WHO. (2014b). *Health for the world's adolescents: A second chance in the second decade: Summary*. Geneva: World Health Organization. Retrieved from http://apps.who.int/adolescent/second-decade/

WHO. (2014c). Global report on drowning: Preventing a leading killer. Geneva: World Health Organization. Retrieved from http://www.who.int/violence_injury_prevention/global_report_drowning/en/

WHO. (2015). *ICD-10 Version: 2015*. Geneva: World Health Organization.

WHO & UNICEF. (2008). *World report on child injury prevention*. Geneva: World Health Organization.

Williams, A. (1999). Graduated licensing comes to the United States. *Injury Prevention, 5*(2), 133.

Williams, A. (2011). Commentary: Graduated licensing—Moving forward or standing still? *Traffic Injury Prevention, 12*(3), 207–209.

Williams, A., Tefft, B., & Grabowski, J. (2012). Graduated driver licensing research, 2010-present. *Journal of Safety Research, 43*(3), 195–203.

Winter, M. V., Donovan, R. J., & Fielder, L. J. (2008). Exposure of children and adolescents to alcohol advertising on television in Australia. *Journal of Studies on Alcohol and Drugs, 69*(5), 676–683.

World Health Assembly. (2011). *World Health Assembly adopts resolution targeted at saving the lives of children from injury*. Geneva: WHA 64.27. Retrieved from http://www.who.int/violence_injury_prevention/media/news/2011/24_05/en/

Yang, J., Hu, Y., Du, W., Powis, B., Ozanne-Smith, J., Liao, Y., et al. (2014). Unsafe riding practice among electric bikers in Suzhou, China: An observational study. *BMJ open, 4*(1), e003902.

Yao, L., & Wu, C. (2012). Traffic safety for electric bike riders in China. *Transportation Research Record: Journal of the Transportation Research Board, 2314* (1), 49–56.

Zarocostas, J. (2011). Road safety plan aims to save five million lives in next 10 years. *BMJ, 342*, d2918. doi:10.1136/bmj.d2918.

Adolescent Mental Health: The Public Health Response

6

Swaran P. Singh and Cathy Winsper

Introduction

Child and adolescent mental health is defined by the World Health Organization (WHO 2005a, p. 7) as: 'the capacity to achieve and maintain optimal psychological functioning and wellbeing.' Child and adolescent mental *ill health*, conversely, refers to the inability of the young person to reach optimal levels of competence and functioning, as manifest in disorders such as depression and psychosis (Patel et al. 2008). The spectrum of mental health problems can range from everyday worries and concerns to serious and debilitating disorders (British Medical Association 2006). Roberts (1999) describes youth mental health problems as ranging in severity from relatively minor *mental health conditions* (e.g., sleep disturbance) to *mental health disorders* (representing marked deviation from normality), to in extreme cases *mental illnesses*, which encompass severe psychiatric disorders also found in adulthood.

Mental health problems in adolescence are of great importance to public health. Mental health problems among adolescents are common, are associated with substantial suffering and functional impairment, can lead to stigma and discrimination, and increase the risk of premature death (Patel et al. 2007). Mental health problems not only impact on the young individuals affected, they also impact on their family members (Angold et al. 1998). Adolescent mental health problems (especially if left untreated) tend to persist into adulthood, increasing the risk of adult mental health disorders (Copeland et al. 2011), poor psychosocial functioning, and poor physical health years later (Goodman et al. 2011; Patel et al. 2007).

In this chapter, we define the concept of adolescence and its changing parameters. We chart the progression of theories describing normal and abnormal psychological development in this age-group. We describe the prevalence and persistence of adolescent mental health problems. We outline the history of child and adolescent mental health services (CAMHS) and twenty-first century developments. We conclude by examining the potential of preventive approaches for youth mental illness.

Adolescence: Concepts and Definitions

Definitions of adolescence vary both culturally and over time. As far back as ancient Greece philosophers considered adolescence to be a life stage distinct from childhood, though the term

S.P. Singh (✉) · C. Winsper
Mental Health and Wellbeing, Warwick Medical School, University of Warwick, Coventry CV4 7AL, UK
e-mail: s.p.singh@warwick.ac.uk

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_6

'adolescence' was only coined in the late nineteenth century (Arnett 2004). The World Health Organization (WHO) describes adolescence as the period in human growth occurring after childhood and before adulthood, that is, from 10 to 19 years of age (WHO 2005b). In Western cultures, individuals in this age-group typically live at home with parents, are undergoing pubertal changes, and are immersed in the 'school-based peer culture' (Arnett 2000). In other cultures however, adolescence is viewed differently or not considered a distinct stage at all. In the Hmong culture of Southeast Asia, for example, the age of 11–12 signifies the end of childhood and the simultaneous onset of adulthood (Tobin and Friedman 1984). In the Indian (Vedic) four stages of life, *Brahamcharya*, the age from birth to 25 is the period of learning and celibacy (WHO 2014).

Societal and biologic changes over the last century mean that the physical, psychological, and cultural expressions of adolescence may begin earlier and end later (Sawyer et al. 2012). While the start of adolescence is traditionally regarded as being commensurate with the onset of puberty (Patel et al. 2007), adolescence is different from puberty; the former refers to a gradual transition from childhood to adulthood (Cicchetti and Rogosch 2002), and the latter is a discrete process of sexual maturation (Pickles et al. 1998). Before the eighteenth century, individuals were expected to marry at the point of reaching puberty. Boys would start employment, and girls would begin raising children of their own. However, during the eighteenth and nineteenth centuries, it became more common for youth in the Western world to remain in education for longer, delaying the typical age for marriage and employment. Young people now started to leave their family homes to study or pursue alternative career choices (Arnett 2004).

While many societies and cultures identify a discrete phase corresponding to 'adolescence' (Richter 2006), some researchers have questioned its validity (Graham 2004). Recently, Jeffrey Arnett has conceptualized *emerging adulthood* as a distinct phase of the life span (i.e., 18–25 years) between adolescence and fully fledged adulthood (Arnett 2000). Arnett postulates that emerging adulthood may only exist in cultures that allow young people to have a prolonged period of independent role exploration. Consistent with Arnett's developmental delineation, recent research indicates that adolescent brain development continues up until the age of 25 years (Luna et al. 2013). Indeed, there is now consensus among experts that we should consider the needs of 'young people' as a distinct from children and adults (Chanen et al. 2009; Patel et al. 2007) and that emerging adulthood is an unstable phase with increased risk of mental ill health (McGorry et al. 2013). In this chapter, we incorporate this extended definition of adolescence or 'youth' to include young people between 15 and 25 years of age (United Nations, n.d.). We will use the terms childhood, adolescence, and youth as defined in the literature reviewed.

Psychological Theories of Adolescent Development

At the start of the twentieth century, the American psychologist Stanley Hall penned one of the first monographs devoted exclusively to the study of adolescence (Hall 1904). Hall's textbook proposed that adolescent behaviors, including conflict with parents, mood disruptions, and risk taking, originate from feelings of 'storm and stress' (or '*strum and drag*') common during this developmental phase. The psychoanalyst Anna Freud was a great supporter of the 'storm and stress' theory, which she saw as a biologically rooted and inevitable part of growing up. Indeed, she suggested that the absence of such experience was predictive of mental illness (Freud 1958).

In subsequent years, Hall's 'storm and stress' theory of adolescence was criticized for generalizing the behavioral problems of a few individual cases to all adolescents (Arnett 1999). For example, conflict with parents may actually decrease during adolescence (Collins and Laursen 2004), and cases of increased conflict may be attributable to mental health problems rather than

adolescence per se (Smetana 1996). Arnett (1999) proposed that although 'storm and stress' is not apparent in all adolescents, it is experienced more by adolescents than any other age-group and more so in Western cultures. It is certainly observable that risk taking (Steinberg 2007) and antisocial behavior (Moffitt 2003) increase during adolescence; however, this behavior persists and becomes pathological in only a subset of youth (Moffitt et al. 2002). The legacy of Hall's 'storm and stress' theory is still evident in clinical practice today as illustrated by confusion regarding pathological versus adolescent-typical mood and behaviors (Laurenssen et al. 2013).

Since Hall's seminal work, this life stage has become an area of great interest among psychologists. Two main themes emerged from theories of adolescent development from the twentieth century. First, adolescence was considered both biologically and cognitively different to childhood (Heaven 2001). During adolescence, the brain undergoes major reorganization and remodeling, which contributes to age-specific behavioral characteristics and vulnerabilities. Prominent developmental transformations in the prefrontal cortex and limbic brain regions (Spear 2000) affect cognitive control systems which influence self-regulation. However, appreciable improvements in cognitive control and behavioral inhibition do not emerge until the transition from adolescence to adulthood (Steinberg 2007; Yurgelun-Todd 2007). Consequently, adolescents are much more likely to engage in behaviors that increase the likelihood of death or injury than any other age-group (Eaton et al. 2006). The age of peak physical prowess in youth is thus also the period of maximum psychological and emotional vulnerability. We should also recognize, however, that biology is neither static nor destiny. Adolescence is also a period uniquely malleable to social experiences and their context.

The second major emergent theme from the twentieth century was the view of adolescence as a time of newly established independence. Psychoanalysts such as Otto Rank and Erik Erikson proposed that adolescence was an important stage in which a young person is able to develop an identity separate to the one imposed by their parents. During this time, peer relationships become increasingly salient (Muuss et al. 1988), and as adolescents begin to spend more time with their peers, they are more influenced by the opinions and expectations of peers (Brown and Larson 2009). If adolescent brain development (and concomitant social processing skills) proceeds as they should, they will underpin a positive social and academic school experience (Ogden and Hagen 2013). Deficits in this realm, however, can lead to a lack of social acceptance (Cillessen and Mayeux 2004) and increases in antisocial behavior (Crick and Dodge 1994). We will revisit the intersection between normative and psychopathological developments in a later section.

The Academic and Scientific Roots of Child and Adolescent Psychiatry

The history of child and adolescent psychiatry has been referred to as 'a collection of services, a body of knowledge, and a profession' (Rey et al. 2015, p. 3). In this section, we focus on academic developments, which have contributed to our understanding of the etiology of mental disorders and shaped intervention strategies for youth mental health.

In the early nineteenth century, European literature on childhood mental diseases consisted mainly of accounts of unusual cases; the predominant view was that 'insanity' did not occur before puberty (Parry-Jones 1989). During the second half of the nineteenth century, the first textbook to include a full chapter on the 'insanity of early life' was published (Maudsley 1867). From that point onward, most textbooks included chapters on 'juvenile insanity,' which was differentiated from 'idiocy,' epilepsy, and the effects of other neurological disorders. Nevertheless, 'childhood insanity' was still believed to be rare (Parry-Jones 1989). Toward the end of the nineteenth century, puberty was recognized as a salient cause of psychological disturbance, and pubescent or adolescent insanity was frequently

discussed (Maudsley 1895). Comparable to Hall's (1904) theory of normative adolescent development, mental illnesses of pubescence included abnormalities of feeling and conduct with impaired self-control, waywardness, irritability, and irresponsibility (Tuke 1892).

In 1933, Leo Kanner introduced the term 'child psychiatry' and published the first English language textbook (of the same name) focusing exclusively on this topic (Kanner 1935). Clinical research in child psychiatry had been carried out for some time; however, the establishment of the Institute of Psychiatry in 1949 led to an increase in academic posts in Britain and an increased emphasis on the academic and scientific roots of child psychiatry. In 1952, James Anthony was appointed the first senior lecturer in child psychiatry at the Institute of Psychiatry. However, progress was slow outside of London. In 1973, Michael Rutter was appointed to the first chair in child psychiatry in Great Britain. He has subsequently become a leader of the discipline in Britain and abroad, having great influence on both practice and research (Hersov 1986).

In the 1960s to 1970s, Rutter led the first epidemiological study of child and adolescent mental health in the UK (Rutter et al. 1970). Conducted in the Isle of Wight, it became the standard for subsequent epidemiological research in the field providing a wealth of information on the prevalence of mental disorders and the development of new measures (Hersov 1986). Rutter was also integral in a second key development: a number of landmark papers in the 1980s heralded the arrival of a new paradigm called *developmental psychopathology* (Cicchetti 1984; Garber 1984; Sroufe and Rutter 1984).

Developmental psychopathology describes the study of mental illness from a life span perspective, in which psychopathology is best understood as a deviation from normal development (Wenar and Kerig 2000). As biologic, psychological, and social systems undergo profound developmental changes during adolescence (Spear 2000), this framework increased our knowledge of adolescent psychopathology in particular and developmental processes more generally (Cicchetti and Rogosch 2002).

Early diagnostic manuals considered childhood psychiatric problems to be intrinsically different from disorders in adulthood (El-Gabalawi 2014). Nevertheless, key findings in recent years have changed our understanding of developmental psychopathology. First, large longitudinal studies have confirmed the continuation of childhood psychopathology into adult life, which has been described in terms of homotypic and heterotypic continuity (Moffitt et al. 2007). *Homotypic continuity* describes the persistence of the same disorder over time. In other words, it suggests that a single disease process may manifest across different stages of development. In contrast, *heterotypic continuity* (or sequential comorbidity) is the prediction of one disorder from another, suggesting that an underlying disease process may manifest differently across development (Maughan et al. 2013). Second, it was recognized that a single causal factor may have various outcomes depending on the individual (i.e., *multifinality*) and conversely that several causal factors may have the same outcome (i.e., *equifinality*) (Cicchetti and Rogosch 1996). Third, we now know that disorders with a juvenile onset have a poorer prognosis in adult life (Moffitt et al. 2002). Schizophrenia with an onset in childhood or adolescence, for example, has a particularly malignant course and outcome (Hollis 2014). Similarly, several studies point to the seriousness of early-onset antisocial behavior (Tolan and Thomas 1995).

Regardless of whether continuity is manifest homotypically or heterotypically, mental disorder persists into adulthood for a large proportion of young people. Indeed, studies demonstrate that up to 50 % of mental illness in adult life begins before the age of 15 and 75 % by the age of 25 (Kim-Cohen et al. 2003). Population-based studies suggest that the majority of youth experience some form of mental health problem before the age of 12 (Copeland et al. 2011; Patton et al. 2014). The weight of evidence is such that adult mental health disorders are now being reframed as an 'extension of juvenile disorders' (Kim-Cohen et al. 2003). Thomas Insel, Director of the National Institute of Mental Health

(NIMH) in the USA, has stated that adult 'mental disorders are the chronic disorders of young people' (http://www.nimh.nih.gov/news/science-news/2005/mental-illness-exacts-heavy-toll-beginning-in-youth.shtml). Because developmental psychopathology can help elucidate disease (and protective) mechanisms, it is an important component in the advancement of prevention and early intervention (EI) efforts (Cicchetti and Rogosch 2002; Institute of Medicine 1994). In contrast to non-developmental approaches which assume that mental disorders present in the same way regardless of age, the developmental psychopathology approach can inform developmentally sensitive therapies (Cicchetti and Rogosch 2002).

The 1990s saw the advent of 'evidence-based practice' (EBP) for CAMHS. Prior to that, little attempt was made to systematically examine the quality of clinical treatments within these services (Hoagwood et al. 2014). In 1999, a research agenda on clinical interventions for youths was published highlighting the need for a new model connecting research to practice (Burns et al. 1999). Key tasks outlined in this paper include the synthesis of existing evidence on promising interventions, the assessment of quality indicators to improve standards of clinical practice, and the evaluation of outcome measures used in studies. A number of studies have subsequently been untaken to answer questions about the effectiveness of manual-based services for young people with serious psychiatric disorders (Hoagwood et al. 2014).

The term EBP in child and adolescent mental health is most often used to differentiate between psychosocial (or pharmacological) treatments that have been tested in randomized controlled trials (RCTs) to those that are used but have not been studied in a systematic way. According to the American Psychological Association, a treatment is considered 'well established' if two or more studies show that it is superior to medication, placebo, or an alternative treatment (Hoagwood et al. 2014). Parent training, for example, is identified as a well-established treatment for conduct problems in youth (Brestan and Eyberg 1998).

EBP in the context of youth versus adult services has different emphases. First, and congruent with the developmental psychopathology paradigm, the evidence base for CAMHS needs to consider developmental issues (e.g., age-related changes, which may impact on treatment efficacy) if it is to be meaningful (Hoagwood et al. 2014). Second, treatments for young people need to be planned within the context of the family, which is central to effective treatment and an understanding of the diagnosis itself. Finally, service venues for young people differ substantially from those for adults (e.g., schools) which will place very different demands on the provider of the treatment (Burns et al. 1999). We will revisit the development of mental health services for young people later in this chapter.

Prevalence and Persistence of Youth Mental Health Problems

The WHO defines *epidemiology* as the study of the distribution and determinants of health-related states or events (including disease) and the application of this study to the control of diseases and other health problems (WHO 2015). In this section, we focus on the distribution (i.e., prevalence) of youth mental health problems. A consideration of the determinants (or causes) of youth mental disorders is beyond the scope of this chapter.

Historically, adolescence was considered a healthy period with low disease burden (Gore et al. 2011). It is now seen as a time of vulnerability for mental disorder (Patton et al. 2014), the point at which much of the disease burden from mental disorder emerges (Gore et al. 2011). Worldwide, neuropsychiatric disorders (including major depression, bipolar disorder, schizophrenia, and substance misuse) are one of the major causes of years lost to disability (YLDs) in young people aged 10–24 years, accounting for approximately 45 % of YLD (Gore et al. 2011).

In May 2014, the WHO released global estimates of mortality and burden of disease in

adolescence (WHO 2014). For adolescents, mental health issues (i.e., depression and self-harm) were among the top five global causes of disability-adjusted life years (DALYs). Unipolar depressive disorders were the top cause of DALYs in high-income countries, the eastern Mediterranean, European, and Western Pacific regions. They were ranked in the top three in all other regions, with the exception of Africa. In 15–19-year-olds, self-harm was the top cause of DALYs in Southeast Asia and was in the top 10 in all other regions with the exception of Africa. Although depression and self-harm *ranked* lower as a cause of DALYs in Africa, actual DALY rates are high in this region which overall has the highest rates of DALYs among adolescents.

Many of the adolescents who participated in the WHO global consultation consider mental health to be the most important health problem faced by adolescents today (WHO 2014). Because most major mental disorders have their onset in adolescence and early adulthood, they have a disproportionate impact on the most productive decades of life (McGorry et al. 2013).

Prevalence of Youth Mental Disorders

Epidemiological studies over the last few decades reveal the true burden of mental health problems among young people. In an early review, Roberts et al. (1998) identified 52 individual prevalence studies (12 focusing on adolescent populations) dating back to 1963. Most studies originated from the UK and USA, though there were also studies from Europe, Asia, Africa, and South America. The mean prevalence of psychiatric disorders across adolescent samples (12–13 years of age) was 16.5 % (median 15.0 %, range 6.2–41.3 %). These findings should be interpreted with some caution due to the considerable variation in prevalence rates across studies, which the authors attributed to disparities in methods of case ascertainment (i.e., type of interview) and definition (i.e., diagnostic criteria).

In a subsequent review covering the literature from 1996 to 2007, Patel et al. (2007) identified fourteen worldwide community studies from a range of countries including Australia, Brazil, the Netherlands, Ethiopia, Hawaii, the USA, India, South Africa, Switzerland, and the UK. They found that within any given year, approximately a quarter of youth (ranging in age from 1 to 24 years) suffered from a mental health disorder (Patel et al. 2007). Two of the studies included utilized high-risk community populations (Beals et al. 1997; Garland et al. 2001), which may have inflated prevalence rates. A careful scrutiny of individual studies within this review revealed an interesting pattern: The prevalence of mental disorder appeared to increase with age. For example, the Australian National Survey of Mental Health and Wellbeing reported that at least 14 % of adolescents younger than 18 years of age had a diagnosable disorder. This figure increased to 27 % in the 18–24-year age-group (Sawyer et al. 2000). Similarly, in the British Child and Adolescent Mental Health Survey 1999, Ford et al. (2003) found that the prevalence of mental disorders increased during adolescence; 7.8 % of 5–7-year-olds compared to 12.2 % of 13–15-year-olds had a diagnosable disorder.

Since publication of this review, a large representative population study suggests that prevalence rates (at least in the USA) may be even higher than previously described (Kessler et al. 2012). Kessler and colleagues examined the prevalence and persistence of DSM-IV disorders in over ten thousand 13–17-year-old adolescents. The estimated prevalence of any disorder at 30 days was 23.4 % and rose to 40.3 % at 12 months. Ratios of 30 days to 12-month prevalence were generally lower than those of 12 months to lifetime prevalence, suggesting that disorder persistence is often attributable to episode recurrence rather than chronicity.

Prospective evidence suggests that *lifetime* (or cumulative) prevalence rates may be higher still. In a study of 1943 Australian school children, Patton et al. (2014) found that 42 % reported a common mental disorder at least once during adolescence. In the Great Smoky Mountains cohort, Copeland and colleagues reported that 61.1 % of participants aged 21 years met criteria

for a well-specified psychiatric disorder at some point since the age of 9 (Copeland et al. 2011). When diagnoses not otherwise specified (NOS) were included, the total cumulative prevalence for any disorder rose to 82.5 %. The authors noted that while the prevalence of mental disorders in young people is relatively low at any given point in time, most youth will experience some form of a mental health problem by the time they reach early adulthood.

There is a meager body of evidence (especially large-scale studies) describing the prevalence of youth mental health disorders in low- and middle-income countries (LAMICs) (Patel et al. 2007, 2008). Mental health research in LAMICs contributes only 3–6 % of all published mental health research worldwide, with research in child and adolescent mental health representing a smaller fraction still (Patel et al. 2008). Prevalence figures appear largely comparable, though slightly lower, to those in high-income countries (HICs) ranging from 6.3 % in India to 18 % in Ethiopia (Patel et al. 2008). As Patel et al. (2008) point out, however, the studies they identified represent only a few LAMIC countries and may therefore not be wholly representative.

Prevalence of Individual Mental Disorders

Evidence from the large study of over 10,000 individuals in the USA suggests that in mid-to-late adolescence (i.e., 13–17 years), anxiety disorders are most common (24.9 %), followed by behavior (16.3 %), mood (10 %), and substance-use disorders (8.3 %) (Kessler et al. 2012). Conversely, data from the Great Smoky Mountains Study indicates that by the time youth reach early adulthood, they are most likely to suffer from a substance-use disorder (Copeland et al. 2011).

Some important mental health problems (perhaps due to the stigma associated with these disorders in youth) were not assessed in the prevalence studies we have described. Smaller-scale studies, however, suggest that these may be relatively common. In a representative community-based sample of 568 youths, the prevalence of any DSM-IV personality disorder was 14.6 % at 14 years, 12.7 % at 16 years, and 13.9 % at 22 years. The cumulative prevalence was higher still reaching 18.1 % at 16 years and 25.7 % at 22 years (Johnson et al. 2008). Similarly, subclinical psychotic symptoms appear relatively common in young people, though symptoms appear to decrease from childhood through adolescence. In a recent meta-analysis of population-based studies, Kelleher et al. (2012) reported that the median prevalence of psychotic symptoms in children 9–12 years of age was 17 %, decreasing to 7.5 % in adolescents 13–18 years of age. While subclinical in nature, recognition of these symptoms is important as they may increase risk of psychotic disorder in early adulthood (Poulton et al. 2000) and are correlated with non-psychotic psychopathology, such as depression and suicide (Johns et al. 2004).

Gender Variations in Prevalence of Mental Disorder

Similar to adult populations (Hartung and Widiger 1998; Piccinelli and Wilkinson 2000), gender differences in the prevalence of youth mental disorders are apparent. In a recent longitudinal study in Australia, Patton et al. (2014) found that females between the age of 15.5 and 17 years were more likely than males (54 % vs. 29 %) to experience mental health difficulties at some point during adolescence. In a younger population, the inverse pattern was observed; Meltzer and Gatward (2000) found that 11 % of male versus 8 % of female 5–15-year-olds suffered from a mental illness. This finding may be partly explained by the observation that generally most childhood-onset disorders have a preponderance of male cases, while most adolescent-onset disorders have a preponderance of female cases (Costello et al. 2006a, b).

Gender differences according to type of mental disorder are also observed in adolescence. Girls suffer more from mood, anxiety (Gau et al. 2005; Kessler et al. 2012), and eating disorders,

while boys have higher odds of almost all behavior (Ford et al. 2003; Kessler et al. 2012) and substance-use (Kessler et al. 2012) disorders. Furthermore, homotypic and heterotypic continuity and concurrent comorbidity appear more marked in girls than boys (Costello et al. 2003).

Increases in Prevalence Over Time

It is not entirely clear whether rates of youth mental disorder have increased over recent decades. Conclusions have been somewhat clouded by methodological differences such as changes in diagnostic criteria (e.g., DSM-III to DSM-IV) and assessment methods and differences in official reporting practices (Collishaw et al. 2004; Costello et al. 2006a, b). Overall, there is some evidence that mental health in youth is worsening, with young people being referred to as the 'miners' canaries' of society (Eckersley 2008).

It appears that rates may have increased for some, but not other, mental disorders. Collishaw et al. (2004) examined potential increases in the prevalence of behavioral and emotional disorders in three different cohorts of adolescents with assessments spanning 25 years. By using the National Child Development Study (assessment in 1974), the 1970 British Cohort Study (assessment in 1986), and the British Child and Adolescent Mental Health Survey (assessment in 1999), the authors could avoid relying on retrospective reports of prevalence. Furthermore, by conducting a calibration study, they could be confident that comparable questionnaires were administered in all three cohorts. Conduct (fighting; bullying; stealing; lying; disobedience), emotional (misery; worries; fearful of new situations), and hyperactivity (fidgeting; restlessness; inattention) problems were assessed via parental report when youth were 15–16-year-olds. There was a significant increase in conduct problems over the 25-year study period, ranging from 6.8 % in 1974 to 14.9 % in 1999. There was also a significant increase in emotional problems from 10.2 % in 1986 to 16.9 % in 1999. Interestingly, an increase in hyperactivity problems was only observed in boys.

Findings regarding an increase in youth depression seem more uncertain. While some studies suggest that youth depression is a growing problem (Kessler et al. 1996, 2003), there are major methodological concerns regarding available evidence. The estimates of first episode depression in older cohorts were based on retrospective recall, which may have led to an underestimation of depression rates in the older, compared to younger, cohorts. Indeed, a more recent meta-analysis combining evidence from 26 child and adolescent cohort studies from the 1960s–1990s seems to confirm these suspicions (Costello et al. 2006a, b). The authors found no evidence for an increase in depression over the last 30 years.

Persistence of Youth Mental Disorders

The length and number of episodes of mental illness during adolescence appear to be predictive of future psychiatric problems in adult life. In Patton et al. (2014) 14-year longitudinal study, almost 60 % of Australian adolescents with a mental health disorder reported a further episode in early adulthood (mean age 29). Girls were particularly affected; 70 % of those who had a persistent mental disorder in adolescence continued to experience mental ill health in adulthood. Outcome was a little better for those experiencing one episode of less than six months in duration, with just over half of this sample receiving no further diagnoses in adulthood. Similarly, Lewinsohn et al. (2000) found that multiple episodes of major depressive disorder in adolescence predicted recurrent major depressive disorder in adulthood.

The findings from these two studies, however, only demonstrate the persistence of mental illness into *young* adulthood. Colman et al. (2007) explored the impact of adolescent disorder on later mental health at several time periods in adulthood. Approximately 70 % of adolescents with anxiety or depression at both 13 and

15 years of age reported a mental disorder at 36, 43, or 53 years of age in comparison with only 25 % of those who did not report an earlier problem. This result was not replicated for those suffering from an adolescent mental illness at only one time point, suggesting that the length or number of episodes of mental ill health is a key predictor of adult mental health.

Prevalence of Suicide and Suicidal Behavior

Psychiatrists now assert that suicide should be viewed as a disease in its own right rather than a behavioral consequence of mental disorder (Perroud et al. 2013). Global estimates reveal that suicide is a major cause of mortality for both male and female adolescents, particularly in the 15–19-year-old age range (WHO 2014). Because of its status as a leading cause of death in youth and its strong association with mental illness (Bridge et al. 2006; Wasserman et al. 2005), we include a brief discussion of suicide in this chapter.

Suicide rates are low in childhood, but begin to increase from the age of eleven onward (British Medical Association 2006). In a nationally representative US survey of 5877 respondents, Kessler et al. (1999) found that the onset of suicide ideation, plans, and attempts peaked in the late teens to early 20s.

With adolescence comes an increased risk of psychopathology, along with more independence and cognitive resources. These factors converge to heighten risk of suicide (Bridge et al. 2006). Suicidal behavior is found to exist on a continuum; it ranges from suicide ideation (thinking or communicating about suicide) to suicide attempts and, in the most severe cases, successful completion of suicide (Bridge et al. 2006). Suicide ideation predicts suicide attempt (Jackson and Nuttall 2001; Lewinsohn et al. 1994); thus, tackling both suicide ideation and behavior is universally important.

Approximately 15–25 % of adolescents engage in suicide ideation (Bridge et al. 2006), and approximately 2–4 % attempt suicide (Vyas et al. 2015). Gender patterns vary according to the type of behavior. More young males than females commit suicide (Wasserman et al. 2005); however, more young females engage in suicide ideation (Bridge et al. 2006).

Both psychiatric and environmental risk factors are associated with suicidal behavior in youth (Bridge et al. 2006). The Great Smoky Mountains cohort of 9–16-year-olds indicated that between 60 and 95 % of suicidal adolescents had underlying mental health problems (Foley et al. 2006). A review published in the same year confirmed that approximately 90 % of suicidal adolescents have mental disorders and that psychiatric problems greatly increase risk of suicide in this age-group (by up to nine times in comparison with healthy peers) (Bridge et al. 2006). Individual differences, in the form of personality traits, are also associated with increased risk of suicide in youth. Bridge et al. (2006) identified several personality traits commonly linked to suicidal behavior including impulsive aggression, impulsivity, perfectionism, neuroticism, lower self-esteem, and feelings of hopelessness. Interestingly, two of the personality traits, lower self-esteem and feelings of hopelessness, are no longer associated with increased risk of suicide when depression is controlled statistically. Indirectly, this also suggests that 'depression' in children and adolescents should be taken seriously and treated.

Mental disorder (or personality traits) alone cannot fully explain youth suicide. Environmental risk factors also play an important role. Poor physical health and disability (Grossman et al. 1991), sleeping difficulties (Winsper and Tang 2014), academic demands, school dropout (Eggert et al. 1995), being bullied by peers (Winsper et al. 2012), family difficulties, same sex attraction (Borowsky et al. 2001), and belonging to a minority group (Grunbaum et al. 2004) are all associated with increased suicide rates in young people.

Our review of evidence confirms that adolescence and emerging adulthood are periods of great risk for the emergence and persistence of mental disorders. Some of these disorders have become more prevalent in recent years, such as

conduct disorders in boys and eating/emotional disorders in girls. We now consider whether service reform has kept pace with the changing evidence base.

Past and Current Youth Mental Health Services

Historically, child and adult psychiatric services have developed under very different societal needs and demands (Singh et al. 2005). Prior to the twentieth century, there were scant services for mentally disturbed youth. Reports suggest widespread admissions to workhouses and adult asylums. These asylums made no specific provisions for mentally ill children (Parry-Jones 1989; Wilkins 1987) and have been labeled the forerunners of today's adult mental health services (AMHS) (McGorry et al. 2013).

Many scholars trace the origins of child psychiatry back to 1899 when the first Juvenile Court was established in Chicago, and a group of influential and socially concerned women started campaigning for a better understanding and management of juvenile delinquency (Fung and Cai 2008; Schowalter 2000). This led to the opening of the first *Child Guidance Clinic* in Boston in 1909. Child guidance clinics created a model of multidisciplinary working, comprising a team of teachers, judges, social workers, and clinical psychiatrists. These clinics were a branch of psychology rather than medicine; the focus was very much on helping the young individual adjust to their environment, rather than on the treatment of mental illness (Keir 1952). The child guidance movement rapidly extended to Europe and the UK. In 1927, the East London Child Guidance Clinic was established and served as a 'demonstration' and training clinic for psychiatrists, psychologists, and psychiatric social workers (Hersov 1986). The legacy of these team-based institutions can be seen in today's CAMHS (McGorry et al. 2013).

Psychiatric services for young people were also being provided in other settings (Hersov 1986). In the late 1920s, children were increasingly referred to mental health centers, two major services in the UK being the Tavistock Clinic and Maudsley Hospital. The Tavistock worked primarily on the development and delivery of psychoanalytically based therapies for children and encouraged a family-oriented approach. The Maudsley focused on behavior management and collaboration with other social agencies. In the 1930s, a closer alliance between pediatrics and child psychiatry began to be forged (Kanner 1959), and the initial steps in the formation of outpatient services for children began (Parry-Jones 1989).

Following the Second World War, child psychiatry separated from adult psychiatry to become an independent discipline (Parry-Jones 1989). This marked a period of great advances in the mental health care of young people. During the Second World War, the need for children to be evacuated away from their families brought into sharp focus youth mental health problems. It was now recognized that childhood emotional disturbance was more widespread than was previously thought. The advent of the National Health Service in 1948 meant there was more money for hospital-based services for children, which developed slowly mostly as outpatient units (Hersov 1986).

By the 1950s, there were two main types of psychiatric service for children. First, there were the child guidance clinics run by local education authorities. Second were the hospital-based child psychiatric clinics under different ministries. The former had closer links with the community and were less formal; the latter were in closer contact with other hospital services, such as pediatrics, and thus had wider resources at their disposal. There was somewhat of a rift between the two types of service, though this was partially reduced by the setting up of joint clinics (Hersov 1986).

In the latter half of the 1970s, several reports were published emphasizing the need for services for children. *Fit for the future: Report of the Committee on Child Health Services* devoted a large section to the need for psychiatric services for children (Court 1976). In comparison with

adult mental health care, which increasingly focused on 'diagnosable' serious mental disorders, CAMHS continued to provide a range of family-oriented psychotherapeutically focused services for a range of mental health problems, regardless of whether these met strict diagnostic criteria (Singh et al. 2005).

The Emergence of Early Intervention Services for Psychosis: Dawn of a New Service Model

The late 1990s saw the introduction of EI services for psychosis. The first EI programs were established in Australia and the UK and were subsequently extended to Germany, the USA, Canada, and Scandinavia (Kulhara et al. 2008). The development of EI services was underpinned by two factors. First, there was a shift in beliefs concerning the treatability of schizophrenia. Historically, schizophrenia was thought to bring great social and clinical deterioration. Now, the early phase of the disorder was seen as formative and thus a prime period in which to intervene (Birchwood et al. 1997). The second factor driving EI was the reported association between delay in antipsychotic treatment (known as the duration of untreated psychosis: DUP) and poorer illness outcomes (Penttilä et al. 2014).

EI for psychosis describes the delivery of phase-specific treatment to young people (14–35 years of age). Consistent with the *clinical staging framework*, treatment may be delivered at different early stages of the disorder (McGorry et al. 2006). First, early detection (ED) may help prevent the onset of schizophrenia in high-risk individuals (known as *primary prevention*). Second, effective treatment for individuals in the early stages of psychosis (known as *secondary prevention*) may help reduce the severity of the illness (Kulhara et al. 2008).

Generally, the EI approach to psychosis has been considered successful in terms of clinical and cost-effectiveness (McCrone et al. 2010). In the early 2000s, there was a scaling up of EI services across numerous national health systems, particularly in England (McGorry 2013). Nevertheless, this reform has not been carried out systematically across the developed world. In 2012, a national system of 16 high-fidelity early psychosis services began to be developed in Australia, which by 2015 will enable many more Australian communities to gain access to this evidence-based service model (McGorry et al. 2013). Despite the robust evidence base of EI services in psychosis, several skeptical voices continue to argue that these were not the 'best buy' for stretched health resources (Castle and Singh 2015).

Youth Mental Health Services in the Twenty-First Century

Although mental health services have continued to evolve, the mental health services system providing care to young people has been recently labeled 'manifestly inadequate' for the unique developmental and cultural needs of young people (McGorry et al. 2013). We have described adolescence as a period of increased risk for mental health problems. It is also a time, however, when mental health problems often go under-recognized and undertreated (McGorry 2013). Studies suggest that only 13 % of youth with mental health problems in Australia (McGorry et al. 2013) and less than a quarter in the UK (Pople 2008) receive help. Thus, there is a growing recognition of the need to improve the accessibility, scale, and developmental appropriateness of mental health services for young people and their families (McGorry et al. 2013).

The economic case for effective EI is unarguable (Suhrcke et al. 2008). The estimated costs of personality disorders (which currently lack an EI approach) to England in 2007 were £7.9 billion. Assume this approach remains unchanged; costs are projected to rise to £12.3 billion in 2026 (Knapp et al. 2011). In comparison, EI services for psychosis have demonstrated great savings. Each young person treated by a specialist EI service saves the British National Health Service approximately £5000 per year (McCrone et al. 2010). Currently, youth mental health services may be broadly categorized into two types:

(1) traditional CAMHS and (2) youth-oriented services (with a focus on EI) for individuals up to the age of 25 years. We will discuss these two types of service in turn.

The structure of CAMHS services, as exemplified by the UK model, is quite complex, providing support at 4 tiers (or levels). Tier 1 (universal) services include general practitioners, health visitors, and schools. Tier 2 (targeted) services include mental health professionals working with young people with mild problems. Tier 3 (specialist) services are a multidisciplinary team of professionals providing a range of interventions for various mental health problems (e.g., substance-misuse teams). Finally, tier 4 (highly specialized) services provide day, inpatient services, and in some cases home treatment as an alternative to admission.

CAMHS have been criticized for not providing sufficient access, or appropriate care to young people (McGorry et al. 2013). Treatment is delivered up until the age of 18 years; then, the young person is expected to transition to AMHS. The drawbacks of this artificial boundary are illustrated by the well-documented difficulties surrounding transitions from CAMHS to AMHS (Lamb and Murphy 2013; Singh et al. 2005, 2010). The transition boundary between CAMHS and AMHS has been described as the 'cliff edge' of lost support for young people leaving CAMHS (Lamb and Murphy 2013).

A service boundary at 18 years of age does not sit well with the bulk of evidence demonstrating that most mental health problems begin before the age of 25 and peak in late adolescence (Birchwood and Singh 2013). A boundary at this point in time means that the mental healthcare pathway for young people is weakest where it needs to be at its strongest (McGorry et al. 2013).

A new wave of youth mental health services is being developed, underpinned by the belief that transitioning from youth to adult services at age 25 will result in better outcomes, as youths at this age will have increased capacity and resilience to cope with moving to adult services (Forward 2014). Australia has been at the forefront of the development of these youth-oriented services, though internationally they remain relatively rare.

Here, we present examples of recently evolving service models from Australia and the UK, which have attempted to redefine service structures for young people up to the age of 25. Broadly speaking, these services may operate on one of two levels. Tier 1 configuration represents an enhanced primary care service extending into a number of community domains. Tier 2 represents a specialist youth mental health service enabling the treatment of more severe forms of mental illness (McGorry et al. 2013).

Australian Services

Australia is currently experiencing a transformation in youth mental health programming with reform occurring at both primary and specialist care levels (McGorry et al. 2013). We describe two service models (Headspace and Origen) which have developed over the last decade or so.

In 2006, the Australian Government initiated 'Headspace' as a primary care-level youth mental health service. Headspace was designed to provide a multidisciplinary, community-based EI service for 12–25-year-olds (McGorry et al. 2013). Following the initial launch of 10 centers in 2006–2007, 90 are planned to be in operation by 2015. Reflecting the diversity of Australia (e.g., remote versus highly urbanized), there are local variations in center; however, each has four delivery streams serving mental health, alcohol and other drug use, physical health, and vocational needs (Rickwood et al. 2015). In addition to these four core streams, each Headspace center delivers community awareness campaigns to encourage help-seeking behavior and aid the early identification of mental health problems. Online resources and school-based intervention programs also buttress services. Headspace promotes a youth-friendly environment to provide a soft entry point, attracting youth into services without prematurely labeling (McGorry et al. 2013).

While it is still early days, initial feedback for the Headspace model is encouraging. There has been considerable uptake by young people. As of October 2012, over 75,000 youths had accessed Headspace services (Rickwood et al. 2015). This is impressive considering the documented reluctance of youth to seek help for mental health problems (Rickwood et al. 2005) and may be attributable to the youth-friendly, low-stigma approach adopted by this service model. Indeed, 93 % of young people surveyed reported being satisfied with the care they received, while 62 % reported an improvement in their physical health (Muir et al. 2009).

While Headspace delivers first-tier EI for common mental health problems, second-tier services are also needed for youth with more complex presentations. *Orygen Youth Health* was established in Melbourne in 2002 to fill this need. Orygen is Australia's largest youth-specific (15–25 years) mental health organization catering for a catchment area of approximately one million people (Purcell et al. 2011). By extending the Early Psychosis Prevention and Intervention Centre (EPPIC) model, Orygen delivers specialist EI care to a wider range of mental health problems (McGorry et al. 2013).

Orygen has four specialist clinics: The EPPIC treats young people with first episode psychosis. The Personal Assessment and Crisis Evaluation (PACE) clinic accepts young people who are at ultra-high risk of developing a psychotic disorder. The Youth Mood Clinic is for young people experiencing a range of non-psychotic disorders, such as major depression, and Helping Young People Early (HYPE) caters to youth with emerging borderline personality disorder (BPD). Each clinic offers a 2-year period of care with a range of specialized interventions, alongside a psychosocial recovery program to support social and vocational recovery (McGorry et al. 2013).

These specialized services sit at the interface between EI and prevention by offering *indicated prevention* programs. The HYPE clinic, for example, treats youths with three or more BPD symptoms (the clinical threshold is ≥ 5 symptoms) to intervene before the disorder becomes established and chronic (Chanen et al. 2009).

Developments in the UK

In line with UK mental health policy promoting prevention and EI (Department of Health 2011), two youth service models (Youthspace and the 0–25 service) have been developed in Birmingham. Birmingham is the second largest city in the UK with a population of 1.2 million. It is often characterized as Europe's 'youngest city,' and as such, it seems fitting that it is leading the way in youth mental health provision in the UK (Forward Thinking Birmingham 2015).

Youthspace was created by Birmingham and Solihull Mental Health Foundation Trust (BSMHFT) to initiate the development of youth-sensitive service provision for 16–25-year-olds (McGorry et al. 2013). The service was developed in extensive consultation with young people and using qualitative research on experiences of existing youth services (Lester et al. 2009). Youthspace aims to improve access for youth through the redesign of existing secondary healthcare provision. There are two main pathways to access services. At the primary level, *youth access teams* supply assessment and formulation to the referring general practitioner. The default treatment is brief (evidence-based) cognitive behavioral therapy, while medication is delivered by the general practitioner, in consultation with the teams' psychiatrist. Young people are seen in low-stigma locations of their choice, where they are additionally screened for emerging disorders. Those requiring intensive treatment will have access to specialized streams (e.g., EI for psychosis, eating disorder services) (McGorry et al. 2013).

Similar to Headspace, Youthspace promotes mental health awareness via school-based interventions and utilizes the Internet and social media to maximize engagement with young people. The core Web site (www.youthspace.me) provides young people with advice, education, individualized assessment, and some (e.g., cognitive behavioral) online therapies (McGorry et al. 2013).

In October 2015, *Forward Thinking Birmingham* launched the new 0–25 community mental health service for children, young people,

and young adults. In an innovative move, seamless services will span the 0–25-year-old age-group to bring an end to disjointed care provision and unsuccessful transitions from CAMHS to AMHS. The service is based around the five core principles of (1) prevention, (2) access, (3) choice, (4) integration, and (5) joined-up care. These services are very early in their development, and are now in the process of gradually transferring services and patients between providers (Forward Thinking Birmingham 2015).

Youth Mental Health Services in Low- and Middle-Income Countries

The youth-oriented services we have described so far are in HICs. While EI programs have been adopted in many countries, they are by no means ubiquitous. Fiorillo et al. (2015) surveyed 60 psychiatrists who were early in their career and associated with the World Psychiatric Association—to examine variations in EI services across countries. Of the 35 countries surveyed, EI services only existed in 22 countries (63 %), most frequently for the treatment of schizophrenia (75 %). Overall, there was a significant difference in the availability of EI services between high- and middle-income countries. EI services were available in 85 % of the high-income versus 33 % of the middle-income countries ($p < 0.01$). A breakdown of EI services according to mental disorder treated revealed an interesting pattern. EI services for substance-abuse disorder were actually more common in middle- than high-income countries (86 % vs. 39 %, $p < 0.05$). This reflects the mental health policy priorities of some middle-income countries, which have a high incidence of substance disorders (Dickson-Gómez 2012).

Training programs for EI in mental health disorders were only available in 38 % of countries, including Australia, Brazil, Canada, Cyprus, Croatia, France, Germany, Nigeria, Norway, Serbia, Switzerland, Turkey, and the UK. The authors concluded that EI services for mental health disorders are now relatively widespread; however, training in EI is still far from satisfactory for psychiatrists early in their career and psychiatric trainees. While the Fiorillo study demonstrates that EI services are beginning to be disseminated throughout high- and *some* middle-income countries, low- or very-low-income countries were not included in the survey. It seems that EI services may remain somewhat of a chimera in low-income countries where the basic needs of the patient are not being satisfied (Fiorillo et al. 2015).

Until quite recently, the planning of mental health care in low- and lower-middle-income (LAMICs) countries was neglected. In 2002, only 7 % of countries around the world had a specific child and adolescent mental health policy (Shatkin and Belfer 2004). In 2005, the WHO launched the *Atlas Child and Adolescent Mental Health Resources Project* to document the status of service development, training, and policy for child and adolescent mental health worldwide. Sixty-six countries contributed to the survey, 46 of which were LAMICs. Overall, the authors concluded that there is a large gap in CAMHS worldwide, but particularly in LAMICs.

LAMICs face major barriers to youth mental health care including a shortage of mental health professionals generally and a lack of training in child mental health care specifically. As a result, this increases the likelihood that misidentification of mental health problems (e.g., as laziness or misplaced discipline problems) will perpetuate stigma (Rahman et al. 2000). The small number of youths in low-income countries, who do see psychiatrists, are too often lost to follow-up services. Thus, little is known about their outcomes because services are poorly organized (Omigbodun 2008). Inequalities in low-income countries are even greater for the poorest children, who are unable to gain access to services in urban or affluent areas (Saxena et al. 2011).

In 2011, Morris and colleagues reviewed the mental health services received by children and adolescents (17 years of age or younger) in 13 low-income countries, 24 lower-middle-income countries, and 5 upper-middle-income countries. The countries were selected based on criteria used by the World Bank on July 2007 to designate low-,

middle-, and upper-middle-income countries (Morris et al. 2011). There were 7 countries from Africa (5 low-income, 1 lower-middle-income, and 1 upper-middle-income). There were 8 countries from the Americas (5 lower-middle-income and 3 upper-middle-income). Seven countries came from the eastern Mediterranean (1 low-income and 6 lower-middle-income). Eight countries came from Europe (1 low-income, 6 lower-middle-income, and 1 upper-middle-income). Eight countries came from the Southeast Asia (4 low-income, 4 lower-middle-income) and 4 from the Western Pacific (2 low-income, 2 lower-middle-income).

Each country completed the WHO Assessment Instrument for Mental Health Systems (WHO-AIMS), which has defined indicators of care to provide data on services actually rendered. The treated child and adolescent prevalence (i.e., sum of number of youth seen in mental health services over one year divided by the estimated total child population for the same period) over one year in low-income countries was 43 per 100,000. In lower-middle-income countries, the number of young people who received mental health services was 295 per 100,000. And, the number seen in higher-middle-income countries was 1432 per 100,000.

Treated youth prevalence figures were much lower than adult treated prevalence rates in low-income countries (290 per 100,000) and adults in lower-middle-income countries (612 per 100,000). On the contrary, in higher-middle-income countries, the rates for adolescents and adults were very similar in higher-middle-income countries (adults 1405 per 100,000; adolescents 1432 per 100,000).

This survey revealed a very low number of mental health services catering exclusively to children and adolescents in these countries. The median percentage of youth-only outpatient services was 3 %, while the mean percentage for other types of youth-only facility was 0 %. Training in child and adolescent mental health was also minimal. Across countries, less than 1 % of mental health professionals (e.g., psychiatrists, nurses, and psychologists) had received a refresher course on child and adolescent mental health issues, though training was more common in higher-middle-income countries with a median of 8 % (Morris et al. 2011).

Thus, current evidence indicates that mental health services for children and adolescents are extremely rare in low- and (most) middle-income countries, greatly limiting access to care for these young people. This is particularly troublesome as the bulk of young people worldwide (up to 90 %) live in low- and middle-income countries (Barry et al. 2013).

Congruent with the WHO Mental Health Gap Action (mhGAP) program priorities, a 'scaling up' of youth mental health services is urgently needed to reduce the large burden of neuropsychiatric disorders in LAMICs (WHO 2008). As Morris et al. (2011) point out, the unprecedented financial resources that are being devoted to children and adolescents must now be used to promote sound and sustainable mental health programming.

Prevention: The Way Forward

As we have highlighted, half of the mental disorders start by age 15 and three-quarters by age 25. Furthermore, the first symptoms of mental illness typically appear two to four years before the full disorder is diagnosed. It is thus clear that prevention programs should take a developmental approach and target young populations (Beardslee et al. 2014).

Scientific evidence supporting the prevention of mental illness has grown over recent years. In 1994, the Institute of Medicine (IOM) published the first report describing models of prevention to encourage the implementation of effective primary prevention programs for mental disorders (Mrazek and Haggerty 1994). This report delineated three levels of prevention to target groups experiencing varying degrees of risk. First, *universal prevention* describes preventive interventions aimed at whole populations. Second, *selective intervention* targets youth at elevated risk of psychiatric problems (e.g., those exposed to family adversity). Finally, *indicated*

prevention supports those with early signs or symptoms of mental illness (as discussed in reference to the HYPE model in Melbourne).

Since the publication of the 1994 IOM report, about 400 randomized controlled prevention trials for mental, emotional, and behavioral disorders have been published and underpin the recommendations presented in the 2009 IOM report (O'Connell et al. 2009).

Reflective of developmental risk and protective factors, there are numerous opportunities for preventive interventions throughout individual development toward young adulthood (i.e., prenatal period, infancy, childhood, and adolescence) (Beardslee et al. 2014). Prior to adolescence, interventions that foster academic development and cultivate social and emotional skills may offer great promise (Greenberg et al. 2003). In adolescence, interventions that are targeted at preventing specific disorders, such as depression, become more appropriate (Barrera et al. 2007).

Systematic reviews incorporating studies from HICs indicate that school- or community-based mental health promotion interventions can lead to significant improvements in mental health, social functioning, academic performance, and health-related behaviors (Nores and Barnett 2010; Weare and Nind 2011). In their examination of 52 systematic reviews and meta-analyses, Weare and Nind (2011) highlighted several key factors for successful school interventions including teaching skills, a focus on positive mental health, starting early with young children, embedding work within a multimodal/whole school approach, liaising with parents, and coordinated work with outside agencies. Also, key to effectiveness was the complete and accurate implementation of the intervention.

Recent research indicates that mental health promotion interventions for young people can also be implemented effectively in LAMIC school and community settings. In a recent systematic review commissioned by the WHO, Barry et al. (2013) identified 22 studies across LAMICs, examining 20 different types of intervention (e.g., combined mental health and physical fitness promotion, cognitive behavioral techniques, and peer support). Overall, school-based interventions had significant positive effects on students' emotional and behavioral well-being, including reduced depression and anxiety and improved coping skills. Similarly, community-based interventions utilizing a multicomponent approach had positive impacts on youth mental health and social well-being. However, as with other areas of youth mental health research, the majority of studies were implemented in upper- and lower-middle-income countries (18 out of 22), highlighting the paucity of evidence from low-income countries.

While prevention has the potential to impact on the incidence (i.e., new cases) and prevalence of mental disorders, its successful application requires a paradigm shift in mental health care (i.e., the prioritization of prevention to reduce suffering, create healthier families, and save money) (Beardslee et al. 2014). Approaches that begin early in childhood have greater chance of success, as they can sustain existing resilience and strengthen coping abilities (Barry et al. 2013).

Conclusions

Adolescence is a period of intense, profound, and unsettling change. Both brain and body are being transformed, as are emotional, cognitive, and social aspects of one's being. Young people have to leave the sheltered dependency of their parents or caretakers and seek adult roles, develop autonomy and independence, and embark on emotional and sexual intimacies and may need to move to their own accommodation. If they are receiving health care, they will need to move from a child to an adult-oriented system. It is thus a period of multiple transitions: developmental, situational, relational, and health care.

Adolescence and emerging adulthood are best conceptualized as a prolonged stage with different individuals having different developmental trajectories. Adolescence is also a high-risk period for psychological morbidity. Overall rates of mental health problems in young people increase

with age, problems become more complex, and the more serious disorders such as psychosis emerge. Adolescent mental health problems also predict problems in adulthood.

Despite the evident importance of meeting the mental health needs of this group, there are several gaps in current service provision and evidence base, low levels of investment in evaluation of existing services, and until recently a lack of political will and investment necessary to fill these gaps. The health sector represents a great opportunity for mental health promotion and prevention among adolescents. Recent advances in our understanding of the adolescent onset of adult mental health disorders, the robust evidence base for EI in psychosis heralding a paradigm shift in early and assertive management of all mental disorders; and, renewed effort at targeted and indicated prevention are all finally driving a much needed change in service structure and provision, especially in the developing world. Much more needs to be done, especially in the developing world where the bulk of youth live. But the long overdue and very welcome reform of youth mental services has started. Our youth deserve no less.

References

Angold, A., Messer, S. C., Stangl, D., Farmer, E., Costello, E. J., & Burns, B. J. (1998). Perceived parental burden and service use for child and adolescent psychiatric disorders. *American Journal of Public Health, 88*(1), 75–80.

Arnett, J. J. (1999). Adolescent storm and stress, reconsidered. *American Psychologist, 54*(5), 317.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469.

Arnett, J. J. (2004). *Adolescence and emerging adulthood: A cultural approach* (2nd ed.). Upper Saddle River: Pearson Prentice Hall.

Barrera, A. Z., Torres, L. D., & Muñoz, R. F. (2007). Prevention of depression: The state of the science at the beginning of the 21st century. *International Review of Psychiatry, 19*(6), 655–670.

Barry, M. M., Clarke, A. M., Jenkins, R., & Patel, V. (2013). A systematic review of the effectiveness of mental health promotion interventions for young people in low and middle income countries. *BMC Public Health, 13*(1), 835.

Beals, J., Piaseck, J., Nelson, S., Jones, M., Keane, E., Dauphinais, P., …, Manson, S. M. (1997). Psychiatric disorder among American Indian adolescents: Prevalence in northern plains youth. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*(9), 1252–1259.

Beardslee, W. R., Chien, P. L., & Bell, C. C. (2014). Prevention of mental disorders, substance abuse, and problem behaviors: A developmental perspective. *Psychiatric Services*.

Birchwood, M., McGorry, P., & Jackson, H. (1997). Early intervention in schizophrenia. *British Journal of Psychiatry, 170*(1), 2–11.

Birchwood, M., & Singh, S. P. (2013). Mental health services for young people: Matching the service to the need. *The British Journal of Psychiatry, 202*(s54), s1–s2.

Borowsky, I. W., Ireland, M., & Resnick, M. D. (2001). Adolescent suicide attempts: Risks and protectors. *Pediatrics, 107*(3), 485–493.

Brestan, E. V., & Eyberg, S. M. (1998). Effective psychosocial treatments of conduct-disordered children and adolescents: 29 years, 82 studies, and 5,272 kids. *Journal of Clinical Child Psychology, 27*(2), 180–189.

Bridge, J. A., Goldstein, T. R., & Brent, D. A. (2006). Adolescent suicide and suicidal behavior. *Journal of Child Psychology and Psychiatry, 47*(3–4), 372–394.

British Medical Association. (2006). *Child and adolescent mental health: A guide for healthcare professionals*. British Medical Association.

Brown, B. B., & Larson, J. (2009). Peer relationships in adolescence. In *Handbook of adolescent psychology*.

Burns, B. J., Hoagwood, K., & Mrazek, P. J. (1999). Effective treatment for mental disorders in children and adolescents. *Clinical Child and Family Psychology Review, 2*(4), 199–254.

Castle, D. J., & Singh, S. P. (2015). Early intervention in psychosis: Still the 'best buy'? *The British Journal of Psychiatry, 207*(4), 288–292.

Chanen, A. M., Mccutcheon, L. K., Germano, D., Nistico, H., Jackson, H. J., & Mcgorry, P. D. (2009). The HYPE Clinic: An early intervention service for borderline personality disorder. *Journal of Psychiatric Practice®, 15*(3), 163–172.

Cicchetti, D. (1984). The emergence of developmental psychopathology. In *Child development* (pp. 1–7).

Cicchetti, D., & Rogosch, F. A. (1996). Equifinality and multifinality in developmental psychopathology. *Development and Psychopathology, 8*(04), 597–600.

Cicchetti, D., & Rogosch, F. A. (2002). A developmental psychopathology perspective on adolescence. *Journal of Consulting and Clinical Psychology, 70*(1), 6.

Cillessen, A. H., & Mayeux, L. (2004). From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development, 75*(1), 147–163.

Collins, W. A., & Laursen, B. (2004). Parent-adolescent relationships and influences. *Handbook of Adolescent Psychology, 2*, 331–362.

Collishaw, S., Maughan, B., Goodman, R., & Pickles, A. (2004). Time trends in adolescent mental health. *Journal of Child Psychology and Psychiatry, 45*(8), 1350–1362.

Colman, I., Wadsworth, M. E., Croudace, T. J., & Jones, P. B. (2007). Forty-year psychiatric outcomes following assessment for internalizing disorder in adolescence. *American Journal of Psychiatry, 164*(1), 126–133.

Copeland, W. E., Shanahan, L., Costello, E. J., & Angold, A. (2011). Cumulative prevalence of psychiatric disorders by young adulthood: A prospective cohort analysis from the Great Smoky Mountains Study. *Journal of the American Academy of Child and Adolescent Psychiatry, 50*(3), 252–261.

Costello, E. J., Erkanli, A., & Angold, A. (2006b). Is there an epidemic of child or adolescent depression? *Journal of Child Psychology and Psychiatry, 47*(12), 1263–1271.

Costello, E. J., Foley, D. L., & Angold, A. (2006a). 10-year research update review: The epidemiology of child and adolescent psychiatric disorders: II. Developmental epidemiology. *Journal of the American Academy of Child & Adolescent Psychiatry, 45*(1), 8–25.

Costello, E. J., Mustillo, S., Erkanli, A., Keeler, G., & Angold, A. (2003). Prevalence and development of psychiatric disorders in childhood and adolescence. *Archives of General Psychiatry, 60*(8), 837–844.

Court, S. (1976). Fit for the future: Report of the Committee on Child Health Services, London.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115*(1), 74.

Department of Health. (2011). No health without mental health: A cross-government mental health outcomes strategy for people of all ages. London: Department of Health.

Dickson-Gómez, J. (2012). Substance abuse disorders treatment in El Salvador: Analysis of policy-making-related failure. *Substance Use and Misuse, 47*(13–14), 1546–1551.

Eaton, D. K., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Harris, W. A., …, Shanklin, S. (2006). Youth risk behavior surveillance—United States, 2005. *Journal of school health, 76*(7), 353–372.

Eckersley, R. (2008). *Never better—Or getting worse? The health and wellbeing of young Australians*. Canberra: Australia 21 Ltd.

Eggert, L. L., Thompson, E. A., Herting, J. R., & Nicholas, L. J. (1995). Reducing suicide potential among high-risk youth: Tests of a school-based prevention program. *Suicide and Life-Threatening Behavior, 25*(2), 276–296.

El-Gabalawi, F. (2014). Child and adolescent psychiatry: Conceptual and diagnostic issues. In C. Perring & L. Wells (Eds.), *Diagnostic dilemmas in child and adolescent psychiatry: Philosophical perspectives*. Oxford: Oxford University Press.

Fiorillo, A., Sampogna, G., Del Vecchio, V., Luciano, M., Del Gaudio, L., De Rosa, C., …, Maj, M. (2015). What is the current status of training and practice of early intervention in psychiatry? Results from a survey in 35 countries. *Early Intervention in Psychiatry, 9*(1), 70–75.

Foley, D. L., Goldston, D. B., Costello, E. J., & Angold, A. (2006). Proximal psychiatric risk factors for suicidality in youth: The Great Smoky Mountains Study. *Archives of General Psychiatry, 63*(9), 1017–1024.

Ford, T., Goodman, R., & Meltzer, H. (2003). The British child and adolescent mental health survey 1999: The prevalence of DSM-IV disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 42*(10), 1203–1211.

Forward, K. (2014). Children and Young Adult Community Mental Health Services (025 years), Birmingham.

Forward Thinking Birmingham. (2015). Innovative new mental health services for 0–25s in Birmingham from https://forwardthinkingbirmingham.org.uk/content/innovative-new-mental-health-services-0-25s-birmingham-start-go-live-today-1-oct-2015

Freud, A. (1958). Adolescence. *Psychoanalytic Study of the Child, 13*, 255–278.

Fung, D., & Cai, D. Y. (2008). *A primer of child and adolescent psychiatry*. World Scientific.

Garber, J. (1984). Classification of childhood psychopathology: A developmental perspective. *Child Development*, 30–48.

Garland, A. F., Hough, R. L., McCabe, K. M., Yeh, M., Wood, P. A., & Aarons, G. A. (2001). Prevalence of psychiatric disorders in youths across five sectors of care. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(4), 409–418.

Gau, S. S., Chong, M., Chen, T. H., & Cheng, A. T. (2005). A 3-year panel study of mental disorders among adolescents in Taiwan. *American Journal of Psychiatry, 162*(7), 1344–1350.

Goodman, A., Joyce, R., & Smith, J. P. (2011). The long shadow cast by childhood physical and mental problems on adult life. *Proceedings of the National Academy of Sciences, 108*(15), 6032–6037.

Gore, F. M., Bloem, P. J., Patton, G. C., Ferguson, J., Joseph, V., Coffey, C., …, Mathers, C. D. (2011). Global burden of disease in young people aged 10–24 years: A systematic analysis. *The Lancet, 377*(9783), 2093–2102.

Graham, P. (2004). *The end of adolescence*. Oxford: Oxford University Press.

Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., et al. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*(6–7), 466.

Grossman, D. C., Milligan, B. C., & Deyo, R. A. (1991). Risk factors for suicide attempts among Navajo adolescents. *American Journal of Public Health, 81*(7), 870–874.

Grunbaum, J. A., Kann, L., Kinchen, S., Ross, J., Hawkins, J., Lowry, R., …, Collins, J. (2004). Youth risk behavior surveillance—United States, 2003. *MMWR: Surveillance Summaries, 53*(2), 1–96.

Hall, G. S. (1904). *Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion and education*. D. Appleton.

Hartung, C. M., & Widiger, T. A. (1998). Gender differences in the diagnosis of mental disorders: Conclusions and controversies of the DSM–IV. *Psychological Bulletin, 123*(3), 260.

Heaven, P. C. (2001). *The social psychology of adolescence*. Palgrave Macmillan.

Hersov, L. (1986). Child psychiatry in Britain—The last 30 years. *Journal of Child Psychology and Psychiatry, 27*(6), 781–801.

Hoagwood, K., Burns, B. J., Kiser, L., Ringeisen, H., & Schoenwald, S. K. (2014). Evidence-based practice in child and adolescent mental health services. *Psychiatric Services*.

Hollis, C. (2014). Adult outcomes of child-and adolescent-onset schizophrenia: Diagnostic stability and predictive validity. *American Journal of Psychiatry*.

Institute of Medicine. (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research*. National Academies Press.

Jackson, H., & Nuttall, R. L. (2001). Risk for preadolescent suicidal behavior: An ecological model. *Child and Adolescent Social Work Journal, 18*(3), 189–203.

Johns, L. C., Cannon, M., Singleton, N., Murray, R. M., Farrell, M., Brugha, T., …, Meltzer, H. (2004). Prevalence and correlates of self-reported psychotic symptoms in the British population. *The British Journal of Psychiatry, 185*(4), 298–305.

Johnson, J. G., Cohen, P., Kasen, S., Skodol, A. E., & Oldham, J. M. (2008). Cumulative prevalence of personality disorders between adolescence and adulthood. *Acta Psychiatrica Scandinavica, 118*(5), 410–413.

Kanner, L. (1935). *Child psychiatry*. Springfield, IL: Charles C Thomas.

Kanner, L. (1959). The thirty-third Maudsley lecture: Trends in child-psychiatry. *The British Journal of Psychiatry, 105*(440), 581–593.

Keir, G. (1952). Symposium on psychologists and psychiatrists in the child guidance service. *British Journal of Educational Psychology, 22*(1), 5–29.

Kelleher, I., Connor, D., Clarke, M. C., Devlin, N., Harley, M., & Cannon, M. (2012). Prevalence of psychotic symptoms in childhood and adolescence: A systematic review and meta-analysis of population-based studies. *Psychological Medicine, 42*(9), 1857–1863.

Kessler, R. C., Avenevoli, S., Costello, E. J., Georgiades, K., Green, J. G., Gruber, M. J., et al. (2012). Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry, 69*(4), 372–380.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., et al. (2003). The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). *JAMA, 289*(23), 3095–3105.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry, 56*(7), 617–626.

Kessler, R. C., Nelson, C. B., McGonagle, K. A., & Liu, J. (1996). Comorbidity of DSM-III—R major depressive disorder in the general population: Results from the US National Comorbidity Survey. *The British Journal of Psychiatry*.

Kim-Cohen, J., Caspi, A., Moffitt, T. E., Harrington, H., Milne, B. J., & Poulton, R. (2003). Prior juvenile diagnoses in adults with mental disorder: Developmental follow-back of a prospective-longitudinal cohort. *Archives of General Psychiatry, 60*(7), 709–717.

Knapp, M., McDaid, D., & Parsonage, M. (2011). *Mental health promotion and mental illness prevention: The economic case*.

Kulhara, P., Banerjee, A., & Dutt, A. (2008). Early intervention in schizophrenia. *Indian Journal of Psychiatry, 50*(2), 128.

Lamb, C., & Murphy, M. (2013). The divide between child and adult mental health services: Points for debate. *The British Journal of Psychiatry, 202*(s54), s41–s44.

Laurenssen, E. M. P., Hutsebaut, J., Feenstra, D. J., Van Busschbach, J. J., & Luyten, P. (2013). Diagnosis of personality disorders in adolescents: A study among psychologists. *Child and Adolescent Psychiatry and Mental Health, 7*(1), 3.

Lester, H., Birchwood, M., Bryan, S., England, E., Rogers, H., & Sirvastava, N. (2009). Development and implementation of early intervention services for young people with psychosis: Case study. *The British Journal of Psychiatry, 194*(5), 446–450.

Lewinsohn, P. M., Rohde, P., & Seeley, J. R. (1994). Psychosocial risk factors for future adolescent suicide attempts. *Journal of Consulting and Clinical Psychology, 62*(2), 297.

Lewinsohn, P. M., Rohde, P., Seeley, J. R., Klein, D. N., & Gotlib, I. H. (2000). Natural course of adolescent major depressive disorder in a community sample: Predictors of recurrence in young adults. *American Journal of Psychiatry, 157*(10), 1584–1591.

Luna, B., Paulsen, D. J., Padmanabhan, A., & Geier, C. (2013). The teenage brain cognitive control and motivation. *Current Directions in Psychological Science, 22*(2), 94–100.

Maudsley, H. (1867). *The physiology and pathology of the mind*. London: Macmillan.

Maudsley, H. (1895). *The pathology of mind*. Macmillan.

Maughan, B., Collishaw, S., & Stringaris, A. (2013). Depression in childhood and adolescence. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 22*(1), 35.

McCrone, P., Craig, T. K., Power, P., & Garety, P. A. (2010). Cost-effectiveness of an early intervention service for people with psychosis. *The British Journal of Psychiatry, 196*(5), 377–382.

McGorry, P. (2013). Prevention, innovation and implementation science in mental health: The next wave of reform. *The British Journal of Psychiatry, 202*(s54), s3–s4.

McGorry, P., Bates, T., & Birchwood, M. (2013). Designing youth mental health services for the 21st century: Examples from Australia, Ireland and the UK. *The British Journal of Psychiatry, 202*(s54), s30–s35.

McGorry, P., Hickie, I. B., Yung, A. R., Pantelis, C., & Jackson, H. J. (2006). Clinical staging of psychiatric disorders: A heuristic framework for choosing earlier, safer and more effective interventions. *Australian and New Zealand Journal of Psychiatry, 40*(8), 616–622.

Meltzer, H., & Gatward, R. (2000). *The mental health of children and adolescents in Great Britain: Summary report*. Office for National Statistics.

Moffitt, T. E. (2003). *Life-course-persistent and adolescence-limited antisocial behavior: A 10-year research review and a research agenda*.

Moffitt, T. E., Caspi, A., Harrington, H., & Milne, B. J. (2002). Males on the life-course-persistent and adolescence-limited antisocial pathways: Follow-up at age 26 years. *Development and Psychopathology, 14*(01), 179–207.

Moffitt, T. E., Harrington, H., Caspi, A., Kim-Cohen, J., Goldberg, D., Gregory, A. M., et al. (2007). Depression and generalized anxiety disorder: Cumulative and sequential comorbidity in a birth cohort followed prospectively to age 32 years. *Archives of General Psychiatry, 64*(6), 651–660.

Morris, J., Belfer, M., Daniels, A., Flisher, A., Villé, L., Lora, A., et al. (2011). Treated prevalence of and mental health services received by children and adolescents in 42 low-and-middle-income countries. *Journal of Child Psychology and Psychiatry, 52*(12), 1239–1246.

Mrazek, P. J., & Haggerty, R. J. (1994). *Reducing risks for mental disorders: Frontiers for preventive intervention research*. National Academies Press.

Muir, K., McDermott, S., Gendera, S., Flaxman, S., Patulny, R., Sitek, T., et al. (2009). *Independent evaluation of headspace: The National Youth Mental Health Foundation: Interim evaluation report*. Citeseer.

Muuss, R. E. H., Velder, E., & Porton, H. (1988). *Theories of adolescence*. New York: Random House.

Nores, M., & Barnett, W. S. (2010). Benefits of early childhood interventions across the world: (Under) Investing in the very young. *Economics of Education Review, 29*(2), 271–282.

O'Connell, M. E., Boat, T., & Warner, K. E. (2009). *Preventing mental, emotional, and behavioral disorders among young people: Progress and possibilities*. National Academies Press.

Ogden, T., & Hagen, K. A. (2013). *Adolescent mental health: Prevention and intervention*. Routledge.

Omigbodun, O. (2008). Developing child mental health services in resource-poor countries. *International Review of Psychiatry, 20*(3), 225–235.

Parry-Jones, W. L. (1989). The history of child and adolescent psychiatry: Its present day relevance. *Journal of Child Psychology and Psychiatry, 30*(1), 3–11.

Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: A global public-health challenge. *The Lancet, 369*(9569), 1302–1313.

Patel, V., Flisher, A. J., Nikapota, A., & Malhotra, S. (2008). Promoting child and adolescent mental health in low and middle income countries. *Journal of Child Psychology and Psychiatry, 49*(3), 313–334.

Patton, G. C., Coffey, C., Romaniuk, H., Mackinnon, A., Carlin, J. B., Degenhardt, L., et al. (2014). The prognosis of common mental disorders in adolescents: A 14-year prospective cohort study. *The Lancet, 383*(9926), 1404–1411.

Penttilä, M., Jääskeläinen, E., Hirvonen, N., Isohanni, M., & Miettunen, J. (2014). Duration of untreated psychosis as predictor of long-term outcome in schizophrenia: Systematic review and meta-analysis. *The British Journal of Psychiatry, 205*(2), 88–94.

Perroud, N., Baud, P., Ardu, S., Krejci, I., Mouthon, D., Vessaz, M., et al. (2013). Temperament personality profiles in suicidal behaviour: An investigation of associated demographic, clinical and genetic factors. *Journal of affective disorders, 146*(2), 246–253.

Piccinelli, M., & Wilkinson, G. (2000). Gender differences in depression Critical review. *The British Journal of Psychiatry, 177*(6), 486–492.

Pickles, A., Pickering, K., Simonoff, E., Silberg, J., Meyer, J., & Maes, H. (1998). Genetic "clocks" and "soft" events: A twin model for pubertal development and other recalled sequences of developmental milestones, transitions, or ages at onset. *Behavior Genetics, 28*(4), 243–253.

Pople, L. (2008). *The good childhood inquiry: Family—A summary of themes emerging from children and young people's evidence*. London: The Children's Society.

Poulton, R., Caspi, A., Moffitt, T. E., Cannon, M., Murray, R., & Harrington, H. (2000). Children's self-reported psychotic symptoms and adult schizophreniform disorder: A 15-year longitudinal study. *Archives of General Psychiatry, 57*(11), 1053–1058.

Purcell, R., Goldstone, S., Moran, J., Albiston, D., Edwards, J., Pennell, K., et al. (2011). Toward a twenty-first century approach to youth mental health care: Some Australian initiatives. *International Journal of Mental Health, 40*(2), 72–87.

Rahman, A., Mubbashar, M., Harrington, R., & Gater, R. (2000). Annotation: Developing child mental health

services in developing countries. *Journal of Child Psychology and Psychiatry, 41*(05), 539–546.

Rey, J. M., Assumpção, F. B. C. A., Bernad, C. A., Çuhadaroğlu, F. Ç., Evans, B., Fung, D., et al. (2015). History of child and adolescent psychiatry. In J. M. Rey (Ed.), *IACAPAP e-textbook of child and adolescent mental health* (p. 3). Geneva: International Association for Child and Adolescent Psychiatry and Allied Professions.

Richter, L. M. (2006). Studying adolescence. *Science, 312* (5782), 1902–1905.

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-Journal for the Advancement of Mental Health, 4*(3), 218–251.

Rickwood, D., Van Dyke, N., & Telford, N. (2015). Innovation in youth mental health services in Australia: Common characteristics across the first headspace centres. *Early Intervention in Psychiatry, 9*(1), 29–37.

Roberts, H. (1999). *Growing up in Britain: Ensuring a healthy future for our children*. New York: Wiley.

Roberts, R., Attkisson, C., & Rosenblatt, A. (1998). Prevalence of psychopathology among children and adolescents. *American Journal of Psychiatry, 155*(6), 715–725.

Rutter, M., Smith, D. J., & Europaea, A. (1995). Psychosocial disorders in young people: Time trends and their causes. *British Journal of Educational Studies, 45*(3), 306–307. doi:10.1111/1467-8527.t01-1-00054.

Rutter, M., Tizard, J., & Whitmore, K. (1970). *Education, health and behaviour*. New York: Longman Publishing Group.

Sawyer, M., Arney, F., Baghurst, P., Clark, J., Graetz, B., Kosky, R., …, Raphael, B. (2000). *The mental health of young people in Australia*. Canberra: Mental Health and Special Programs Branch, Commonwealth Department of Health and Aged Care.

Sawyer, S., Afifi, R. A., Bearinger, L. H., Blakemore, S.-J., Dick, B., Ezeh, A. C., et al. (2012). Adolescence: A foundation for future health. *The Lancet, 379*(9826), 1630–1640.

Saxena, S., Lora, A., Morris, J., Berrino, A., Esparza P., Barrett T., …, Saraceno, B. (2011). Focus on global mental health: Mental health services in 42 low- and middle-income countries: A WHO-AIMS cross-national analysis. *Psychiatric Services, 62*(2), 123–125.

Schowalter, J. E. (2000). Child and adolescent psychiatry comes of age, 1944–1994. *American Psychiatry after World War II, 1944–1994*, 461.

Shatkin, J. P., & Belfer, M. L. (2004). The global absence of child and adolescent mental health policy. *Child and Adolescent Mental Health, 9*(3), 104–108.

Singh, S. P., Evans, N., Sireling, L., & Stuart, H. (2005). Mind the gap: The interface between child and adult mental health services. *The Psychiatrist, 29*(8), 292–294.

Singh, S. P., Paul, M., Ford, T., Kramer, T., Weaver, T., McLaren, S., …, White, S. (2010). Process, outcome and experience of transition from child to adult mental healthcare: Multiperspective study. *The British Journal of Psychiatry, 197*(4), 305–312.

Smetana, J. G. (1996). *Adolescent-parent conflict: Implications for adaptive and maladaptive development.* Paper presented at the Rochester Symposium on Developmental Psychopathology.

Spear, L. P. (2000). Neurobehavioral changes in adolescence. *Current Directions in Psychological Science, 9* (4), 111–114.

Sroufe, L. A., & Rutter, M. (1984). The domain of developmental psychopathology. *Child Development*, 17–29.

Steinberg, L. (2007). Risk taking in adolescence new perspectives from brain and behavioral science. *Current Directions in Psychological Science, 16*(2), 55–59.

Suhrcke, M., Pillas, D., & Selai, C. (2008). Economic aspects of mental health in children and adolescents. In *Social cohesion for mental well-being among adolescents*. Copenhagen: WHO Regional Office for Europe.

Tobin, J. J., & Friedman, J. (1984). Intercultural and developmental stresses confronting Southeast Asian refugee adolescents. *Journal of Operational Psychiatry*.

Tolan, P. H., & Thomas, P. (1995). The implications of age of onset for delinquency risk II: Longitudinal data. *Journal of Abnormal Child Psychology, 23*(2), 157–181.

Tuke, D. H. (1892). *A dictionary of psychological medicine*. Philadelphia: Blakiston.

United Nations. (n.d.). Definition of youth. Viewed December 9, 2015, from http://www.un.org/esa/socdev/documents/youth/fact-sheets/youth-definition.pdf

Vyas, N., Birchwood, M., & Singh, S. (2015). Youth services: Meeting the mental health needs of adolescents. *Irish Journal of Psychological Medicine, 32* (01), 13–19.

Wasserman, D., Cheng, Q., & Jiang, G. X. (2005). Global suicide rates among young people aged 15–19. *World Psychiatry, 4*(2), 114.

Weare, K., & Nind, M. (2011). Mental health promotion and problem prevention in schools: What does the evidence say? *Health Promotion International, 26* (Suppl 1), i29–i69.

Wenar, C., & Kerig, P. (2000). *Developmental psychopathology: From infancy through adolescence*. McGraw-Hill.

WHO. (2005a). *Child and adolescent mental health policies and plans*. Geneva: World Health Organisation.

WHO. (2005b). *Atlas: Child and adolescent mental health resources: Global concerns, implications for the future*. Geneva: World Health Organization.

WHO. (2008). *Mental health gap action programme: Scaling up care for mental, neurological, and substance use disorders*. Geneva: World Health Organization.

WHO. (2014). *Health for the world's adolescents—A second chance in the second decade*. Geneva: World Health Organization. Retrieved from http://apps.who.int/adolescent/second-decade/

WHO. (2015). *Epidemiology*. Geneva: World Health Organization. Retrieved from http://www.who.int/topics/epidemiology/en/

Wilkins, R. (1987). Hallucinations in children and teenagers admitted to Bethlem Royal Hospital in the nineteenth century and their possible relevance to the incidence of schizophrenia. *Journal of Child Psychology and Psychiatry, 28*(4), 569–580.

Winsper, C., Lereya, T., Zanarini, M., & Wolke, D. (2012). Involvement in bullying and suicide-related behavior at 11 years: A prospective birth cohort study. *Journal of the American Academy of Child & Adolescent Psychiatry, 51*(3), 271–282, e273.

Winsper, C., & Tang, N. K. (2014). Linkages between insomnia and suicidality: Prospective associations, high-risk subgroups and possible psychological mechanisms. *International Review of Psychiatry, 26*(2), 189–204.

Yurgelun-Todd, D. (2007). Emotional and cognitive changes during adolescence. *Current Opinion in Neurobiology, 17*(2), 251–257.

Restorative Justice and Adolescent Health

7

Stefaan Pleysier, Inge Vanfraechem and Lode Walgrave

Introduction

Youth criminology generally distinguishes between two types of youthful offending (Rutter et al. 1998; Stattin et al. 2010). One type is considered to be transitional and is an expression of the particular tasks and crises that are typical for adolescence. It is expected that this delinquency gradually fades away when the adolescent grows into young adulthood. The other type of youth offending is more persistent and caused by more systematic specific factors and dynamics, such as lack of social prospects or psychosocial troubles. Youth justice systems are designed to address these problems. Compared to adult criminal justice, youth justice systems are more flexible, more focused on the needs and underlying causes of the conduct, and more oriented toward rehabilitation of the juvenile through treatment, (re)education, and other welfare measures.

Currently, these systems are under pressure. The sociocultural climate in most Western societies seems to be captured in a so-called punitive turn (Snacken and Dumortier 2011) and youth justice systems are reproached by a variety of critiques: ineffective, too soft, and lacking credibility with regard to serious crime, neglecting legal safeguards of the young, as well as the needs and rights of the victims. In this context, a third way of responding to offending is emerging (Walgrave 2004). From hardly known, *restorative justice* has become in a few decades a broad and still 'widening river' (Zehr 2002, p. 62) of renovating practices and empirical evaluations; a central issue in theoretical, juridical, and social–ethical debates; and a ubiquitous theme in juvenile justice and criminal justice reforms worldwide. For some, it is a way to divert as much as possible offenders from the traditional judicial procedures. For others, restorative justice is a completely new paradigm that should replace in the long run the punitive or rehabilitative (for juveniles) premises in the reaction to crime. There is no doubt that restorative justice practices are increasingly penetrating youth justice systems in most Western countries.

In this chapter, two questions are asked. The first one addresses the possible complementarity of the restorative justice approach with the rehabilitative welfare orientation that mostly predominates youth justice. The second question is whether restorative justice responses on their own can significantly contribute to the well-being or mental health of adolescents. The first section describes how welfare-oriented youth justice systems are under pressure. While we use Belgium as a case, the described developments clearly exceed the Belgian case and are observed worldwide. The second section presents

S. Pleysier · I. Vanfraechem · L. Walgrave (✉)
Faculty of Law, Leuven Institute of Criminology (LINC), University of Leuven, Leuven, Belgium
e-mail: lode.walgrave@law.kuleuven.be

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_7

restorative justice as a possible third way in responding to youth crime, avoiding the unproductive rehabilitation/punishment debate. The third section explores the potentials of framing restorative justice practice into a legal context, which is needed if it is advanced as a full-fledged alternative. In doing so, the socio-ethical grounds underlying restorative justice are brought to the surface in order to show that the ideas go beyond the simple technique of answering to (youth) crime, but may inspire a more comprehensive attitude and policy regarding youth and welfare. The fourth section investigates the feasibility of restorative justice practice, based mainly on systematic empirical research. Finally, we land at the core question of this chapter, whether restorative justice does contribute to the well-being of adolescents who are confronted with the public response to their offending.

Rehabilitative Approach in Youth Justice Under Pressure

A Short Outline of the Belgian Youth Justice History

Of all West European countries, Belgium is probably the archetypical example of a juvenile justice system based on welfare protectionism (Christiaens et al. 2011; Dünkel 2013; Put and Walgrave 2006). Influenced by the discovery of childhood as a separate phase in life and a subject for a growing body of academic research in the early twentieth century, the Child Protection Act of 1912 replaced a traditional and general penal response to (youth) crime with a protectionist answer 'in the best interest of the child.' The idea was that minors' criminality was a symptom of underlying problems and that they could therefore not be held responsible for their acts. They should be 'protected and (re)educated rather than punished' (Christiaens et al. 2011, p. 100). Hence, the Child Protection Act abolished criminal punishment for children under the age of 16. A new Youth Protection Act in 1965 largely confirmed and continued the welfare protectionist approach and was in line with the 'ideals of penal welfarism in vogue in the 1960s' (Cartuyvels et al. 2010, p. 30). Moreover, this new Youth Protection Act integrated minors who committed crimes and minors 'in need of protection' mainly because of poor parenting. Furthermore, and with only a few exceptions, this new Youth Protection Act extended the upper limit of the minimum age of criminal responsibility to the age of 18 (Put et al. 2012).

The option for a welfare-oriented system, however, did not exclude continuous discussion on the foundations of that choice or, more in particular, on how to deal with juvenile delinquency. In fact, Belgium could very well be seen as a 'fairly good example of the hesitations that are reflected in juvenile (criminal) justice developments in Europe' (Cartuyvels et al. 2010, p. 29). Cartuyvels et al. (2010) state that since the 1980s four different critiques on the traditional welfare-oriented and protectionist juvenile justice models can be observed. A first critique tackles the doubtful effectiveness of the welfare system and the apparent gap between the 'welfare model's ideals and its actual results' (Cartuyvels et al. 2010, p. 30). Secondly, the protectionist idea lacks credibility in responding to serious youth crime and 'hard-core' juvenile delinquents. A third critique questions the compliance of protectionist interventions, although in the 'best interest of the child,' with legal safeguards and international standards. And a final and fourth critique, stimulated by a so-called victimological turn in our society (Boutellier 1993), accuses the traditional welfare-oriented system of omitting the victim from all procedures (Cartuyvels et al. 2010, p. 31).

Together with the reform of the Belgian state, these critiques resulted in a reform of the 1965 Youth Protection Act, which became the 2006 Youth Justice Act. The Youth Justice Act reaffirmed the autonomous and independent position (from the criminal justice system) of the youth justice system both in content and in organization. It applies to minors (below 18) who have committed and Act defined as an offence. Only in exceptional cases, for acts committed between the ages of 16 and 18, when the youth protection measures are judged as no longer appropriate, it

is possible to apply criminal law (Put 2010). Furthermore, the Act provides the fundamental principles for the youth justice system and introduces additional legal rights. To a large extent, the Act reaffirmed its protectionist nature and roots. Instead of sanctions, 'measures of care, preservation, and education' do not necessarily refer nor are proportional to the offence at stake. Strictly speaking, the severity of the intervention does not depend on the gravity of the offence but is adapted to the circumstances and situation of the minor. In practice, however, the seriousness of the offence does influence to some extent the nature of the intervention (Put 2010, pp. 279–280).

The Youth Justice Act increased the number of possible interventions from four to twelve, which mainly regulated and legalized the existing variety of interventions in practice. What is important within the scope of this contribution is the fact that the Act also introduced and set out a framework for restorative justice practices in dealing with juvenile delinquency. Moreover, the Act stipulates the order of preference in defining the appropriate intervention, with a priority for 'restorative and constructive' interventions (Put et al. 2012).

Retreat from Welfare

Within the last decades, a neoliberal discourse, neoconservative tendencies, and a so-called punitive turn emerged in almost all Western countries, pressurizing in particular those youth justice systems with a traditional focus on welfare and protection (Snacken and Dumortier 2011; Bailleau et al. 2010). More in general, a retreat from traditional welfarism in favor of a society oriented toward safety, security, and the principle of precaution is promoted (Garland 2001). In the field of penal policy and criminal justice interventions, the dominant rehabilitative approach has eroded and an emphasis on 'retribution, incapacitation, and the management of risk' seems to emerge (Garland 2001, p. 8). In the dawn of a risk society and the rise of the precaution principle, new mechanisms and strategies oriented to efficiency, efficacy, early detection and intervention are developed and fine-tuned, and emerged also within the domain of youth crime and juvenile justice.

In their study on juvenile justice in 10 countries in Europe, Turkey, and Canada, Bailleau et al. (2010, pp. 8–10) report on some common 'principles of change.' The authors observe a rising social intolerance and a trend for more law-and-order policies and practices in these countries. Young people are increasingly seen as 'a primary source of danger and crime' against which society has to protect itself. Populist and punitive discourses promote and pressure youth justice policy and practices away from an approach to protect and rehabilitate 'youth at risk' toward a system emphasizing the danger of a 'youth as risk' category. The result is, according to Bailleau et al. (2010, p. 9), 'the increased surveillance of young people and families by a host of entities and the extension of criminalization to include certain types of behavior that used to be considered to be mere deviations from the norm and/or petty delinquency.' These strategies of surveillance and control are further supported by neoliberal and neoconservative emphasis on accountability, empowerment, and responsibilization.

Parallel to this development, the impact of international conventions and legal safeguards for minors in youth justice systems increased. Compared to (adult) criminal justice, welfare-oriented and more flexible juvenile justice systems 'fail to uphold many of the procedural principles protecting the purported juvenile offender's rights' (Bailleau et al. 2010, p. 15; Cartuyvels and Bailleau 2010). The most prominent of all international standards, ratified by all but two countries, is the 1989 UN Convention on the Rights of the Child (CRC), stating the necessity of a child-oriented approach and focus on 'education, support, and integration into society' for all minors in contact with the law (Doek 2009). A number of international standards addressed more particularly youth justice, such as the so-called Beijing Rules (UN standard minimum rules for the administration of juvenile justice), the Havana Rules (UN rules for the

protection of juveniles deprived of their liberty), and at the European level, the recommendations of the Council of Europe, in particular those concerning 'new ways of dealing with juvenile delinquency and the role of juvenile justice' (Rec (2003)20) and 'juvenile offenders subject to sanctions or measures' (Rec(2008)11) (Doek 2009, pp. 19–20; Dünkel 2013, pp. 146–147).

Belgium is, as mentioned, no exception to these debates. On the contrary, one could even say that the Belgian youth justice system, traditionally known for its outspoken welfare- and protectionist-oriented touch, is even more vulnerable to the above-mentioned critiques. In fact, Put et al. (2012) argue that, ever since the 1965 Youth Protection Act, Belgian authorities were caught in a hold between a revision of the rehabilitative system, a tendency toward more punitive and repressive responses toward juvenile delinquency, and a restorative justice-oriented approach. Put and Walgrave (2006, p. 125) predicted that the youth justice system would be less purely welfare oriented, but 'based more on restorative (and/or punitive) sanctions and focused more on the harm and suffering caused by the offence to victims.' Indeed, the Youth Justice Act introduced in 2006 illustrated in a variety of ways the before mentioned and broader trends in society and the 'hesitations' surrounding juvenile justice developments in Europe. The 2006 reform crystalizes at least five related 'lines of force' that emerged in the preceding period (Cartuyvels and Bailleau 2010, p. 32). The new legislation expresses (1) the need to have a broader array of alternative sanctions available in all steps of the procedure; (2) the introduction and formalization of a restorative logic; (3) the idea of a firm responsibilization of young people and their parents; (4) the trend to be tougher on crime and juvenile delinquency, while at the same time; (5) affirming legal rights and procedural safeguards, not the least because of the growing focus on international standards of human rights. A new reform of the youth justice system is expected in the coming years and will probably continue along previous changes and developments: a further reduction of the traditional welfare-oriented model in favor of a more legalistic approach, a focus on responsibilizing, and sanctioning young offenders and their parents, and an increasing reliance on restorative responses to youth crime (Berghmans 2012; Goedseels 2012).

Focusing on broad trends and general principles might disguise equally important differences between and perhaps even within countries. According to Muncie and Goldson (2006, p. 198), it is assumed 'that developments in any single nation state cannot be fully explored without reference to sub-national, regional and local diversity as well as acknowledging the impact of international and global forces.' Although one could generally agree with the idea that most countries are confronted with a 'retreat from welfare', studying youth justice systems also points to the fact that legislation, policy, and practice are always 'a result of competing internal and external pressures', and therefore, these systems are 'continually in transition and flux' (Bailleau et al. 2010; Muncie and Goldson 2006, p. 196).

Moreover, it is important to distinguish public opinion and political discourse from the juvenile justice system in general, and practices and practitioners within the system more in particular. As Dünkel (2013, p. 146) mentioned, the claim that a 'new punitiveness' prevails within media and political speech indeed draws the attention away from the fact that the practice of many justice systems seems to be fairly resistant to this punitive turn and neoliberal tendencies (Dünkel 2013, pp. 164–165; Muncie 2008). In a similar way and based on their large comparative study, Cartuyvels and Bailleau (2010, p. 265) agreed that a 'dramatization of the political discourse' on youth crime and juvenile justice does not by definition give rise to a 'toughening of juvenile criminal law.' They argue that resistance is indeed being put up 'by those responsible for actual practice on the ground.' It leads them to conclude that traditional welfare-oriented approaches, as in Belgium, seem to erode in favor of mixed models, a 'new complexity' or a 'hybridization of logics' (Cartuyvels and Bailleau 2010, p. 270; Dünkel 2013, p. 152, 164).

Restorative Justice as a 'Third Way'

The Belgian Youth Justice Act 2006 formalized several restorative justice practices that existed until then in a more informal way. An important element was the prioritization of restorative justice answers to juvenile delinquency: mediation between the victim and the offender, facilitated by an impartial third party; restorative conferencing, an 'extended mediation,' including the family and other persons of confidence of both stake-holding parties (in a few versions, the police represent the public interest); and community service, an unpaid service to a public interest. Restorative answers could also include the so-called written project. Under the Belgian Act, the young offender and his family can express and explain in a written proposal to the judge what they will do to repair the harm and avoid further delinquency. These models are considered to be primary responses to youth crime (Cartuyvels and Bailleau 2010; Put et al. 2012). Put and associates (2012) consider these restorative justice practices as a way to assist young offenders in assuming responsibility and, at the same time, to take victims' needs and rights seriously.

Several authors suggested that the emergence and establishment of restorative justice practices is not a coincidence but the outcome of the aforementioned discussions surrounding youth crime and juvenile justice (Dünkel 2013). The restorative justice paradigm and its interventions seemed to settle ongoing debates: It was 'the ideal of a third way between prevention and punishment', meeting the 'objectives and ends of the welfare logic (education, justice, and rehabilitation) with neoliberal or neoconservative emphasis (accountability, empowerment, and responsibilization)' (Bailleau et al. 2010, p. 10, 21). The notion of responsibility is crucial as it fits the broader evolution from traditional welfare to neoliberal workfare policies, with the latter being marked by 'a desire to activate, empower, hold accountable, and control population groups in vulnerable situations' (Bailleau et al. 2010, p. 13; Christiaens et al. 2011). However, while a firm emphasis on the notion and value of 'responsibility' is not necessarily a bad thing, it risks being a potential gateway to increased punitivity within youth justice (Bailleau et al. 2010; Put et al. 2012). Activation, empowerment, and responsibilization could be considered as a constructive way of offering opportunities, but it also incorporates some inherent risks. Mediation and other restorative justice practices tend to pinpoint young offenders (and their parents) as 'responsible agents' in order to hold them accountable for their choices in life (Cartuyvels et al. 2010, p. 48). The downside is the risk of culpabilization (guilt), i.e., the disavowing of all behavior that is not considered to be part of the repertoire of autonomous and responsible moral agents. The paradigm of individual responsibility risks stigmatizing, criminalizing, and excluding those young individuals who are not able, or fit, to 'take up' responsibility and the role of moral agent (Roose 2011). In that perspective, Berghmans (2012) stresses the importance of a form of 'supportive, active responsibility' with young people. It would offer equal chances and opportunities to become responsible citizens, instead of passively blaming young people for not (yet) being responsible.

According to Doak and O'Mahony (2011), the growth of restorative justice practices in general, and mediation in particular, also seems to connect with (some aspects of) international standards and principles. Because of the emphasis on participation and reparation in restorative justice practices, 'international instruments have increasingly viewed restorative- and mediation-based intervention as a legitimate, if not superior, means of delivering justice' (Doak and O'Mahony 2011, p. 1717). In Recommendation (99)19, the Council of Europe explicitly recognizes the importance to involve both victims and offenders actively in resolving cases 'themselves with the assistance of an impartial third party' (Doak and O'Mahony 2011, p. 1718). The recommendation further led to including the importance of mediation and restorative justice into the UN Vienna Declaration on Crime and Justice.

A continuous concern is to indemnify restorative justice against being co-opted by the

rehabilitative or punitive approaches to youth crime. On the one side, Put and associates (2012) warn against the danger of mediation and conferencing deviating from 'pure restorative aims' and becoming a form of alternative offender treatment. It is one of the main sources of skepticism within (part of) the victims' movement (Pemberton 2009). They fear misuse of the victims in an agenda that is mainly offender focused and does not recognize the victims' genuine interests and needs. This fear seems to be at least partly confirmed in the Belgian case (Put et al. 2012). It is, for example, indicative that in Belgium the participation rate of victims in mediation is not only relatively low but also very unequal across judicial districts (Ferwerda and van Leiden 2012). On the other hand, as said before, one could question whether the introduction of restorative justice practices in many jurisdictions is not merely a 'fig leaf', 'seeking to disguise a more repressive youth justice system' (Dünkel 2013, p. 151; Dünkel et al. 2011, p. 1844). In a way, these risks and arguments could be read as a plea for more clarity both in the conception of restorative justice and in the aims, objectives, and methods of future reforms. Restorative justice should be more clearly defined as a third way in response to (juvenile) offending and not as an 'alternative punishment' nor as an 'alternative schedule for rehabilitating' youths. We shall come back to this issue later in this chapter.

Restorative Justice as a Constructive Way for Holding Adolescents Responsible

The Emergence of Restorative Justice

In its modern form, restorative justice re-emerged around 1980. However, the inclusive and deliberative settlement of conflicts and injustices existed long before (Weitekamp 1999; Zehr 1990). Deliberation, compensation, and restitution have always been important ways of responding to injustices, but also violent settlements between families and clans occurred (Schafer 1977). Moreover, ancient civilizations and great spiritual traditions always have promulgated values and principles, which are consistent with the currently advanced principles of restorative justice (Braithwaite 2002; Hadley 2001; Van Ness et al. 2006). It seems obvious, therefore, that the moral values underlying restorative justice and restorative-like practices are deeply rooted in ancient wisdom, even if their predominance in practice may be uncertain.

The origins of restorative justice can be clustered together in three broad trends (Faget 1997; Van Ness et al. 2002). Firstly, victims' movements, often intertwined with feminist themes, claimed an expanded role in criminal justice (Strang 2002). Initially, they held a strict oppositional view on victims' and offenders' interests, whereby they strongly supported the punitive aspect of criminal justice. Many victims' advocates of today, however, understand that a coalition with the traditional criminal justice system is often counterproductive for the victims. Seeking reparation and compensation may result in a more profound and lasting satisfaction. There are some similarities in the development of both the victim and the restorative justice movement (Vanfraechem and Bolivar 2015), but this awareness toward restoration has not necessarily entailed a strong coalition between the victims' movement and the restorative justice. While part of the victims' advocates see the interest of joining the broader restorative justice movement (Cario 2005; Dignan 2005; Peters and Aertsen 1995), others fear, as was mentioned, the misuse of victims in an agenda which is not in their interest (Acorn 2004; Pemberton et al. 2008).

A second source of restorative justice can be found in communitarianism. Communities are seen as a means for restorative justice, because they are advanced 'niches' in which restorative processes can take place. Communities are also seen as an end, as it is believed that achieving restorative processes in a community is constructive for the revival of community life (Sullivan and Tifft 2006). Within the communitarian agenda, restorative justice has been strongly inspired by religious approaches (Hadley 2001;

Zehr 1990) and by the emancipation of indigenous populations, especially in North America and New Zealand. Their community-based, peace-oriented, and deliberation-driven ways of dealing with conflict and norm transgression have deeply influenced restorative practice and thinking (Zellerer and Cunneen 2001).

Thirdly, critical criminology pointed to the counterproductive effects of criminal justice and its incapacity to ensure peace in social life. Critical criminologists partly endorsed the communitarian agenda, but often framed their criticisms in a structuralist, Marxist perspective. Abolitionists argued for doing away with or phasing out of the criminal justice system, in order to replace it by a bottom-up deliberative model of dealing with conflicts (Christie 1981; Hulsman and Bernat de Celis 1984; Bianchi 1994). Inheritors of this tendency proposed restorative justice-like alternatives (de Haan 1990) or have turned to restorative justice as the mainstream alternative to criminal justice (Blad 1996) or to youth justice (Bazemore and Walgrave 1999).

Practices have evolved since the early 1970s. Originally, the isolated initiatives did not refer at all to a restorative justice concept. It is only since the late 1980s and early 1990s that restorative justice as a particular concept has begun to take off. Nowadays, the application of its principles is spreading far beyond criminal matters, penetrating the regulation of disputes and discipline problems in schools, neighborhood conflicts and community antisocial behavior, child welfare and protection matters, labor and business regulation, and even the resolution of conflicts involving systematic political violence. Given its diverse roots and current forms, it is not surprising that restorative justice appears somewhat confused. It is a complex domain, covering a wide realm of practices. It is a challenging subject for legal and normative reflection and debate and a fruitful field for theorizing and empirical research. Restorative justice is also a social movement where 'believers' promote its ideas. Adding to the confusion are apparently similar movements under a variety of banners such as 'transformative justice,' 'relational justice,' 'community justice,' and 'peacemaking justice.'

A Maximalist View of Restorative Justice

Despite its intuitive commonalities, the concept of restorative justice is the subject of intensive debates. In this chapter, we characterize restorative justice as 'an option for doing justice after the occurrence of an offence that is primarily oriented toward repairing the individual, relational, and social harm caused by that offence' (Walgrave 2008, p. 21). This definition, however, is not based on general consensus. It advances the objective of achieving restoration as key to understand restorative justice, whereas many (if not most) other views focus on the deliberative process as the main characteristic (Hoyle 2010). McCold (2004, p. 15), for example, wrote, 'The essence of restorative justice is not the end, but the means by which a resolution is achieved.'

Both conceptions agree that the direct encounter between the victim and the offender is at the center of the restorative practice. Such informal and more or less voluntary encounters indeed may more easily yield a more complete restoration than other processes or procedures. It would be unworldly to believe that such victim-offender encounters can be completely voluntary. The identified suspect understands very well that something will happen to him. He will at least experience pressure by his relatives, the victim, bystanders, and/or by the police. Moreover, he knows that referral to court is a further possibility, whereby his 'free choice' to participate is a limited choice.

Mediation and restorative conferences offer a setting for respectful communication, promoting a genuine examination of the suffering and damage caused, and furthering the expression of remorse, compassion, apologies, and forgiveness. They may lead to an authentic agreement on how to repair or compensate harm in a reasonable way. The restorative potential of these processes is more outspoken for the victim, the offender, and social life than any judicial procedure or sanction and initiation can be.

A voluntary restorative process, however, cannot always be achieved. Here is where the

diversionist and the maximalist approaches propose different options. For diversionists who stick to the deliberative process as the key characteristic, restorative justice stops where the informal dialog appears to be impossible. Of course, restorative processes can also be implemented in prison, after conviction. They are not diversionist, but complementary to the penal justice system.

Diversionists encapsulate restorative justice in a position outside or at the margins of the current judicial system. Their aim is to divert as many cases as possible from that system, without changing the system as such. In practice, the diversionist approach of restorative justice discharges the penal or juvenile justice system from the less serious cases, allowing the system to concentrate on the 'real serious' crime in a traditional manner. Hence, victims of serious crime are excluded from the restorative offer, whereas they might benefit the most from it.

The maximalist version of restorative justice does not stop beyond the reach of voluntary deliberation. It considers the possibility of a mandatory imposition by the judiciary, although this might not lead to full reparation or compensation. Compared to the diversionist approach, maximalist restorative justice extends the restorative objective into the judicial response itself. The current premise that the offender must be punished or re-educated (for juveniles) is replaced by the premise that the consequences of the offence must be repaired as much as possible by the public intervention.

Two reasons are advanced to promote the maximalist version of restorative justice. First, trying to argue for an action or a process without referral to its purpose is like pedaling in the air. We walk to relax, to care for our health, or to watch the beautiful landscape. All actions have a purpose. Equally so for a restorative process, the option for organizing such process is determined by what we hope to achieve by the process. It is expected that mediation or conferencing offers more opportunities for authentic communication and genuine restoration than a traditional judicial procedure does. If that were not the case, no reason was left to set up a difficult and delicate restorative process. Processes that are not meant to remove or to diminish the suffering and damage caused by the offence are simply not part of restorative justice. An exclusive emphasis on the process to characterize restorative justice may lead to a misunderstanding. This is, for example, the reason for the earlier-mentioned concern among victims' advocates. They fear that the victims' experiences may be used as tools to impress the offenders, but not recognized as needs, which must be addressed in their own right. It is only when the restorative outcome is advanced as the main characteristic of restorative justice that such aberrations can be avoided.

Second, the diversionist version of restorative justice does not offer any answer to the problematic character of the current criminal and juvenile justice systems. Within the scope of this chapter, we cannot elaborate on this subject, but it must be clear that current justice systems are subject to severe criticisms. Critical reflection and research have led to the conclusion that the ethical premises of traditional criminal law are highly contestable and that systematic implementation of punitive responses does not yield constructive results for the victim, nor for social peace or the rehabilitation of the offenders (Walgrave 2008). It brought Braithwaite (2005, p. 283) to conclude that current criminal justice is 'the most dysfunctional of the major institutional accomplishments of the Enlightenment.' According to Radbruch (as cited in Tulkens 1993, p. 493) '(t)he best reform of penal justice consists of its replacement, not by a better penal law, but by something else.'

The diversionist model of restorative justice does not explore the possibilities for that 'something else.' It tries to reduce the scope of its implementation, it may try indirectly to modify it softly, but it does not have the ambition to replace it by something else (and better). The latter is exactly what the maximalist approach ambitions to achieve. While recognizing the need of every society for clear norms and norm enforcement, it tries to achieve this without the punitive premise and within the rules of law, which are critical in a constitutional democracy. However, the maximalist position of restorative

justice provokes many questions. First, the meaning of some pivotal concepts such as harm, restoration, and doing justice would need further clarification. Second, we must explore the possibilities for 'restorative norm enforcement' within the rules of law. Third, the social–ethical grounds of restorative justice are to be explained. And finally, the feasibility of restorative justice is to be explored.

The Critical Elements in Restorative Justice

The definition mentioned above contains three basic elements: harm, restoration, and doing justice (Walgrave 2008).

Harm

As said before, the focus on repairing harm and not on what should be done to the offender is the key to understand restorative justice. It is what distinguishes it from punitive and rehabilitative justice approaches. It looks through a distinctive 'lens', in Zehr's term (1990), for defining and solving the problem caused by crime. Crime is defined by the harm it causes and not merely by the transgression of a legal order. The primary response to it should be neither to punish nor to rehabilitate the offender but to set the conditions for repairing the harm as much as possible. Harm includes the material damage, psychological and relational suffering by the victim, social unrest and community indignation, and uncertainty about legal order and about the authorities' capacity to assure public safety as well as the social damage the offender causes to himself.

The only limitation is that the harm considered is caused by the particular offense. Not all restorative justice adherents would accept this limitation. Social exclusion or psychological problems of the offender may be among the causes of the offending behavior, but they are not caused by the offense. Including the offenders' broader needs in a restorative justice response leads to the earlier-mentioned risks of co-optation within the traditional rehabilitative approach and degrading the victim into a tool in service of the offender's rehabilitation. The restorative justice approach does involve the offender primarily not only because something must be done to him, but also because it will serve the goal of restoration. Positive influences on the offender are a secondary objective only. While it is crucial that the offender's needs are addressed, it is not necessarily the restorative justice system itself that has to address these (Walgrave 2015). Including the problems and needs of the offender in the deliberation is important to find out which reparative gesture can reasonably be expected from him, but they are not the subjects of the restoration itself. This discussion is of course especially relevant in youth justice where the rehabilitative concerns and focus on the person of the offender are prominent. We will return to this issue later in this chapter.

Restorative justice addresses crimes, which are also public events. A burglary, for example, is a private and a public affair. Restitution of or compensation for the individual victim's losses could be private and arranged by civil law. Nonetheless, there is also the public side, in the sense that we all are concerned that public authorities intervene after the burglary. If the authorities would not react, citizens' trust in their right to privacy and property would erode and public life would be dominated by mutual threat and fear.

Braithwaite and Petitt (1990) introduced the concept of 'dominion.' Dominion can be understood as the set of assured rights and freedoms. The assurance is dependent on our mutual trust that fellow citizens and the state will take our rights and freedoms serious. The other is an ally in trying to extend and mutually assure dominion as a collective good. A burglary does not diminish the existing legal rights of privacy and property, but it harms the extent to which the victim and his fellow citizens are assured that these rights are respected and taken seriously. A public intervention following a crime is needed in order to enhance assurance by communicating authorities' public disapproval of the norm

transgression and by the pursuit of restoration. The intervention reassures the victim, the public, and the offender of their set of rights and freedoms. Voluntary cooperation by the offender is more effective to restore assurance, but only if it is backed by public institutions. The assurance comes not only from the individual offender's repentance and apologies, but certainly also from the authorities' determination to take the assured set of rights and freedoms seriously.

Restoration

Different processes may lead to a restorative outcome, but not all processes are equally appropriate for it. We already pointed to the important distinction between voluntary processes and coercive procedures. We also argued why processes that consist of voluntary deliberation between victim, offender, and the main stakeholders are preferable. Well-conducted restorative processes offer a powerful sequence of moral and social emotions and exchanges such as shame, guilt, remorse, empathy, compassion, support, apology and forgiveness in the offender, the victim, and other participants (Harris et al. 2004). It may lead to a common understanding of the harm and suffering caused, and to an agreement on how to amend these prejudices. It may enhance the willingness of the offender to fulfill these agreements and lead to satisfaction for the victim, reintegration of the offender, and restored assurance of rights and freedoms in society. Such a sequence is of course the ideal, which is often far from being fully achieved.

The agreement after such processes may include a wide range of actions such as restitution, compensation, reparation, reconciliation, and apologies. The degree of the offender's willingness to undertake such actions is crucial. It expresses the understanding of the wrong committed and a willingness to make up for it. For the victim, it means the restoration of his citizenship as a bearer of rights and possibly also a (partial material) redress. For the larger community, it contributes to the assurance that the offender understands rights and freedoms and is willing to respect them in the future. Even the offender's agreement to undergo a treatment has a restorative significance that expresses his recognition of a problem that he is willing to resolve in accordance with his social environment.

If voluntary processes cannot be achieved or are judged to be insufficient, the possible pressure or coercion on the offender should also serve restoration. Enforced reparative sanctions are to be imposed according to judicial procedures, but these procedures can be oriented to obligations or sanctions with a restorative significance. Examples are material restitution or compensation to the victim, and paying a fine to the benefit of a victims' fund or community service. Compared to the outcomes of deliberative processes, the restorative impact of these sanctions is reduced but might still be preferable over not-at-all-restorative reactions (Van Ness 2002).

Doing Justice

Restorative justice is not only about restoration, but it is also about justice. The notion of 'justice' has two meanings here. First, it refers to a feeling of equity, of being dealt with fairly, according to a moral balance of rights and wrongs, and benefits and burdens. In traditional punitive justice, this balance is achieved by imposing suffering on the offender that is commensurate to the social harm he caused by his crime. In restorative justice, the balance is restored by taking away or compensating for the suffering and harm caused by the crime. Restorative justice then aims at achieving 'procedural fairness' (De Mesmaecker 2014; Tyler 2006; Van Camp 2014) and satisfaction (Van Ness and Schiff 2001) for all parties involved. Victims feel that their victimization has been taken seriously and that the compensation and support are reasonably in balance with their sufferings and losses. Offender's experience that their dignity has not unnecessarily been hurt and that they are given the opportunity to make up for their mistake in a constructive way. All participants, including the community, feel reassured that rights and freedoms are taken seriously by fellow citizens as well as the authorities.

The best way to guarantee that losses are well understood and the methods of reparation are adequate is to leave the decision to those with a direct stake: victims, offenders, and others directly affected. This bottom-up approach is crucial in restorative justice and contrasts with the top-down approach of a criminal or juvenile justice system. However, the state cannot withdraw completely. If it did, state authorities would not guarantee respect for rights and freedoms and therefore would not be able to assure dominion. To restore assurance, the state must guarantee that everything possible is done to respect and restore the intruded-upon dominion. In a voluntary restorative deliberation, the state must be present at least in the background to assure that the deliberation actually takes place and results in an acceptable outcome, to guarantee the power balance in the deliberation and to provide an opportunity to turn to the traditional judicial response if one of the participants feels that his interests are not adequately acknowledged in the deliberative process (Vanfraechem 2007a).

Justice also refers to legality. Restorative justice processes and their outcomes must respect legal safeguards. Legal safeguards protect citizens against illegitimate intrusions not only by fellow citizens, but also by the state. This is obvious in coerced interventions, but it also applies in voluntary settlements. Participation may not be imposed. Agreements must be accepted by the parties and be reasonable in relation to the seriousness of the harm and to the parties' accountability and capacities. The implementation of these rights and legal safeguards in restorative justice is a matter of debate among restorative justice proponents, on which we shall extend in the next section.

A Legal Framework for Restorative Justice

Presenting restorative justice as an alternative to traditional criminal or juvenile justice does not mean rejecting the law and/or legal safeguards. The construction of a judicial system to frame a restorative approach faces a particular challenge: How to combine ample space for informal and confidential deliberation among the main stakeholders, which is a crucial tool for achieving maximum possible restoration, with formality and publicity, needed to allow checks and balances of legal safeguards? The debate on this is one of the most important issues in systematically developing restorative justice (Blad 2013; Braithwaite 2002; Cario 2005; Lauwaert 2009; von Hirsch et al. 2003; Walgrave 2008).

Restorative Justice Legislation

Nowadays, restorative justice practices have been legislated in a great majority of youth justice systems (Dünkel et al. 2015; Mestitz and Ghetti 2005; Miers and Aertsen 2012; Zinsstag and Vanfraechem 2012). The arguments advanced for introducing restorative justice practices are threefold: (1) Juveniles must be held more responsible for what they did, (2) the victims deserve more attention to their interests and needs, and (3) mere punishment and incarceration of juveniles should be avoided as much as possible and be replaced by more constructive responses. In most countries, mediation, conferencing, and even community service are regulated as forms of diversion, addressing less serious offences. Exceptions to this are New Zealand and Northern Ireland where conferencing is at the heart of the mainstream procedure also for serious youth crime (Shearar and Maxwell 2012; Zinsstag and Champan 2012). Belgium is somewhat in-between, as conferencing can be organized for serious youth offending and in theory is the first option to take, although it is in practice not the mainstream pathway toward sentencing (Put et al. 2012). As we have seen, most youth justice systems could be considered as complex or hybrid models, in that they seem to be struggling continuously with the relation between rehabilitative concerns focusing on the juvenile and the authentic attention for the victim's needs and interests (see also Vanfraechem et al. 2012). Clearly, current youth justice systems are not straightforward restorative systems, as it would be conceived in the maximalist

perspective. However, building upon the idea of a maximalist restorative justice system is an important exercise as it may point to the potentials as well as the limits of the applicability of such a restorative justice system.

Conceiving a Restorative Youth Justice System

The goal is to transform the criminal justice system into being restorative instead of punitive or rehabilitative if it concerns youth. A restorative criminal justice system shares a number of characteristics to traditional criminal justice, such as clear limits to social tolerance, the responsibility of the one who transgressed the norm, and the controlled use of coercion if needed. Crucial differences exist, however, such as more focus on the harm to fellow citizens and to social life as the reason for criminalizing behavior; a shift in the objectives of the enforcement, giving priority to the possibilities to repair the harm, to restore the victim and the quality of social life; a modification of the procedures so as to include where possible inclusive deliberative solution-finding at the grass-roots; and a reconsideration of the traditional principles of legal safeguards, such as equality, right of a defense, public control or proportionality, in order to adapt them to the new paradigmatic approach of restorative justice (Walgrave 2008).

How that would work in practice has been represented in the form of a pyramid (Braithwaite 2002; Dignan 2007; Walgrave 2008), with at the broad base ample space for free deliberation among all parties at stake in order to resolve conflicts and tensions in community, and at the narrow top a very reduced possibility for incapacitation if all other ways to cope with serious threats to public life are exhausted. This is in line with international juvenile justice standards proclaiming the principle of subsidiarity and the possibility for deprivation of liberty only as a 'last resort'. The pyramid represents the possibility to increase pressure and coercion gradually, but even at the bottom level the eventuality of coercion is already implicitly present. The knowledge that the community of care, the local and wider community, the public authorities, and finally the criminal justice system may expect, demand, and if necessary enforce a gesture of reparation has an influence on even the most voluntarily accepted deliberative level. For the victim, it is reassuring that victimization is not tolerated and must be repaired. For the offender, it makes clear that he will in any case not escape taking up responsibility. For both, it is reassuring and moderating to know that the legal frame will keep the intervention within limits. For the community at large, it is a confirmation that the authorities take dominion seriously.

In a number of cases, however, deliberation between the main stakeholders is not possible or considered to be unsatisfactory. Further judicial interventions or stepping up in the pyramid can then be considered. These interventions must also serve by priority the objective of restoration or reparation. Wherever and whenever favorable for restoration and possible in terms of public security, 'de-escalation back down the pyramid' (Braithwaite 2002, p. 167) is needed and the cases should be left with, or moved back to, the less coercive levels. This presupposes a moderated and reserved attitude among more coercive agencies and especially in the justice system. The criminal justice system must then transform its punitive premise and procedures in view of proportionate punishments into a coherent priority for restoration in processing and in sanctioning.

Restorative Justice as Inversed Retribution

The traditional retributivist response to crime consists of three elements, i.e., (1) a clear expression of the rejection of the behavior, (2) holding responsible the one who committed the behavior, and (3) an attempt to reinstall a kind of balance, by imposing on the offender an amount of suffering which is proportionate to the seriousness of the crime. The restorative response contains the same three elements, but in an inversed, more constructive manner.

Restorative justice clearly marks the limits of social tolerance, as the reason for the intervention is the offence and the rejection of it is one of the key elements in a restorative process. However, the restorative rejection refers much more than the punitive rejection to the obligation to respect the quality of social life. The rejected wrong is linked directly to the harm and suffering inflicted on fellow citizens and social life in general. As is the case in punitive justice, restorative justice also relies on the responsibility of the offender. Punitive retributivism, however, subjects the offender to a passive responsibility: He is confronted by the system about his responsibility and is obliged to submit to the negative consequences of the deed. Restorative justice, on the contrary, uses an active concept of responsibility where the offender is invited, and if necessary forced, to play an active role by contributing to the reparation of the caused suffering, harm, and social unrest. Whereas passive responsibility is based on retrospection (one is held responsible for what he has done in the past), active responsibility is both retrospective and prospective (one is also held co-responsible for repairing in the future).

Penal justice tries to restore the moral balance (whatever that balance may be) by repaying the offender a proportionate discomfort for what he has done. The supposition is that things are made even as both parties suffer an equal amount of pain. The total amount is doubled, but equally spread, which is considered more just. Restorative justice pursues the restoration of the balance by trying to take away as much harm caused by the crime as possible. The offender has to actively contribute to repairing this harm. That also is a form of repayment or retribution, but a constructive one.

Restorative justice thus appears to be also a form of retributive justice, but in a constructive version, at the service of the quality of social life. The essential difference between the punitive and the restorative options is the premise that an offence must in principle be responded through an intentional infliction of pain. For social–ethical and for instrumental reasons, we do not accept this apriorism.

Legal Safeguards for Restorative Justice

The retributive character in restorative justice, including its retrospective dimension and its pursuit of restoring a balance, is the ground for developing restorative legal safeguards. It must be demonstrated that individual and social harm has been caused. The individual responsibility must be indicated and the response must be in balance with both the harm and the responsibility. These are the building blocks for the construction of legal safeguards.

One cannot, however, simply transpose legal safeguards existing for penal justice to restorative justice. We must indeed take seriously that restorative justice represents a different paradigm with other logics, objectives, processes and procedures, and different actors in different roles and in different relations. The principles to steer the judicial procedures with a view on imposing punishments, such as the rights of defense, equality of all citizens, presumption of innocence, publicity, and other, have to be reconsidered and reformulated. One cannot play basketball with the rules of soccer. The elaboration of specific legal safeguards, appropriate for a justice system that primarily aims at, as much as possible, reparation after the occurrence of a crime, is still being developed. Current legislations of restorative justice practices sometimes present original ideas (Miers and Aertsen 2012), but there is still a long way to go. In line with penal justice, the juridical frame for restorative justice will have to guarantee two fundamental principles: (1) the equivalence of all citizens before public authorities and especially before the justice system and (2) the protection of all citizens against abuses of power by fellow citizens and by the authorities (Walgrave 2008).

Restorative Justice and Social Ethics

Pursuing restoration of individual and social harm and suffering, instead of responding to offending by inflicting additional pain; re-conceiving the response to crime from a

top-down sentencing machine into a bottom-up problem-solving system; and reducing coercion to the strictest possible minimum and giving priority to inclusive deliberation, all these elements witness a particular view on social relations and on governing social life. Why is it forbidden to steal or to commit private acts of violence? Because if it were not forbidden, severe victimizations would occur. The absence of a formal response would provoke counteractions to make things even, leading to an escalation in mutual victimization. Constructive social life would be impossible and be dominated by abuse of power and fear. To avoid such escalation and to make social life livable, civilization has concentrated the use of violence in the central power's hands (Elias 2000). Criminal justice has its roots in the concern for preserving communal life. Hence, what is logically the first concern of the social response to crime? It is to repair—as much as possible and in an orderly way—the harm done to the victim and the damage to social life. Restorative justice recalls the fundamental *raison d'être* of the criminal justice system. Instead of the abstract legal order, the quality of social relations and social life is (re)positioned as the fundamental reason for criminalizing certain behavior. The aim is to restore this quality and not primarily to enforce public order. Both are not contradictory in se, but different emphases are possible.

Individual Liberties Create Ethical Obligations

Each individual has the desire to shape his own life. As such, we must include this desire in our social life. We have no choice but to live together. The behavior of others affects my opportunities, and my behavior has an effect on the lives of others. This creates mutual entitlements and responsibilities. I am entitled to demand an ethical account from the others. The brutality of one neighbor disturbs social life in the neighborhood, which makes other neighbors entitled to demand more decent conduct instead. My individual rights and liberties to make my own choices confront me with my social responsibilities. I can opt for ruthless selfish choices or I can include the interests of others and of social life in the choices I make. Liberties are a crucial good that must be cherished, but the full use of all rights and freedoms is not always ethically advisable. It has to be balanced with the interest of others and of social life in general. This balance is the critical issue of the debate between liberals and communitarians. It cannot be resolved empirically or by new laws and rules. It is a matter of socio-ethical understanding.

Opting for Common Self-interest

Instead of considering others as competitors, I can bundle self-interest with that of others. The others then are seen as allies in a common project for more autonomy and my self-interest is integrated into what might be called 'common self-interest' (Walgrave 2008). It merges into one notion the seeming contradiction we are all living in: We are individuals with particular needs, wishes, and ambitions, but we also are living with others, with whom we cannot but share opportunities and goods. To gain more autonomy, we need each other. Living in a community that gives all its members maximum space, based on respect for plurality and solidarity, is the common self-interest. If we all invest in social life, we all benefit from its high quality. We do not only divide the social benefits, but together we also increase them.

We are not alone to see a version of self-interest as the basic drive in high-quality social life. Putnam (2000, p. 135), for example, writes that our good citizenship is not because we obey 'some impossibly idealistic rule of selflessness, but rather because we pursued self-interest rightly understood.' Braithwaite and Pettit (1990) advance 'dominion' as a social conception of freedom. The mutual assurance that fellow citizens and the state will respect individual rights and freedoms increases the individual enjoyment of those rights and freedoms. In Bloomfield (2008, p. 8), we read, 'one's well-lived life, one's happiness, is not

independent of one's self-respect and one's self-respect is not independent of how one treats others'. Even the neuroscientist Cacioppo and Patrick (2008, p. 55) conclude 'the driving force of our advance as a species has not been our tendency to be brutally self-interested, but our ability to be socially cooperative'.

Common Self-interest in Restorative Justice and in Other Social Fields

The social–ethical philosophy inspiring restorative justice is grounded in basic trust in the potential of people to actively take their responsibility in social issues and it focuses on what binds us, rather than on what divides and threatens. As we shall see in the next section, restorative practice shows that these presuppositions are not naïve. Despite their seemingly opposite interests, both victims and offenders appear to find common ground. They both recognize that they have interest in finding a constructive solution, so that they can live in peace in a supportive social climate. Their self-interest is integrated into the project of common self-interest.

Restorative justice does not, however, have the monopoly to this social–ethical approach. As a movement, restorative justice is rooted into a wider social–ethical ground stream, in a conception of social life and democracy, which is also the basso continuo—the source for many other theories, movements, and practices. In the field of criminology, for example, the Good Lives Model in rehabilitation focuses on 'building offenders' capacity to live personally meaningful and fulfilling lives' rather than seeing the (potential) offender through the risks he represents, as the more traditional risk-need-responsivity model does (Ward et al. 2014, p. 28; cf. infra). Or, a recent book on security issues complaining that criminology was falling 'under the spell of thinking negatively about safety and security' (Schuilenburg et al. 2014, p. 10) and explores more positive views, 'aspects of security that invoke connotations like trust, care or well-being' (Schuilenburg and van Steden 2014, p. 19).

These and other constructive approaches in and outside of criminology are grounded in a common awareness that the quality of social life is depending on how we relate to each other. The other is not considered initially as a threat, but as a companion in the search for a better, more livable world. The quality of our lives is depending on the extent to which we succeed in integrating our pursuit of our self-interest into a project of common interest. This insight is increasingly common in social sciences.

Restorative Justice in Practice

In this paragraph, we summarize some of the main research findings with regard to the experiences of participants in restorative justice practices. Research to evaluate human interventions is always precarious. Systematic reviews and meta-analyses in the 'what works' research tradition, for example, list a number of methodological shortcomings inherent to these studies (Andrews and Bonta 2003), including unclear indication of measurable program objectives, invalid instruments, absence of or inadequate control groups, doubtful external validity, problematic measurement of reoffending, overoptimistic interpretations by committed believers, and lack of attention to undesirable side effects. The same applies to restorative justice research, but that research still has to confront some additional particular methodological problems (Bonta et al. 2007; Shapland et al. 2008; Strang and Sherman 2015; Walgrave 2011). So, for example, selection bias may influence the results: Participants 'opt in' to restorative justice and are thus not comparable to those who do not 'opt in' for such encounters; public prosecutors select those cases they deem appropriate for restorative processes, leaving out those whom they consider inappropriate. The following is mainly based on a number of surveys and meta-analyses, with a particular focus on victim–offender mediation and conferencing, which can be considered as the most typical restorative justice models (Bonta et al. 2007; Kurki 2003; Latimer et al. 2001;

Lemonne and Hydle 2010; McCold 2003; Sherman and Strang 2007; Walgrave 2011).

Do People Want to Meet?

As such restorative encounters are based on voluntarism, the first obvious question is whether victims and offenders are actually willing to communicate and meet each other. Currently, the police and the judicial system make the most referrals for mediation and conferencing. They do certainly not refer all cases. Therefore, the figures mentioned are based not only on the total number of victims or offenders, but also on the total number of those who have been referred for a restorative process.

Research shows that most people are indeed willing to meet when they are well prepared: Although not all victims effectively participate, research on family group conferences showed that only about 4 % explicitly refused participation because they rejected the encounter out of principle (Maxwell and Morris 1994). For both victims and offenders, participation in fact depends on the perceived costs and benefits of participating (Kirkwood 2010). Kirkwood (2010) also found significant differences in participation and agreement rates between several agencies that organized mediation processes. It suggests that the intrinsic quality of the restorative justice process is crucial.

Surveys indicate that between 20 and 80 % of victims are willing to participate in mediation or conferencing. Most programs report over 50 % willingness. Victims' participation depends partly on the nature and the seriousness of the offence. Surviving family members, for example, may not wish to participate after the murder of a family member (Umbreit et al. 2008), although mediations do take place in such cases (Suggnome 2005). Victims' participation rates also depend on offender characteristics: These rates generally tend to be higher with juvenile offenders than with adults, lower if offenders belong to an ethnic minority and higher in the case of first offenders. Victims participate to get answers, to tell the (young) offender what the offence has meant to them or to help prevent new crimes (Maxwell et al. 2004), but also to confront the offender with his responsibility or to receive restitution (Aertsen and Peters 1998). After a meta-survey, Umbreit and associates (2008, p. 56) mention the following common reasons why victims participate: to learn about why the crime happened (see also Pelikan and Trenczek 2008); to help the offender change; to hold him accountable; to avoid a court process; and to see him adequately 'punished,' which often means, for example, restitution or community service. Altruistic motives toward both society and offender in the sense of communicating victim awareness may also be of importance (Van Camp 2011), as well as coming to a dialog and reaching an agreement (Bolivar 2012). A number of victims decide not to participate in a conference because they were not well informed of the meeting, or the place and time did not suit them (Maxwell et al. 2004). Sometimes the victims found the offence too trivial, they considered the matter already resolved, they were afraid of meeting the offender, or they wanted the offender to be truly punished (Umbreit et al. 2008). Although punishment of the offender is mostly not the first concern for victims (Strang 2002), some may nevertheless find it important, depending on the crime and their experiences (Pemberton 2015).

The participation rates of offenders and their reasons for doing so seem to be less researched. Strang and associates (2006) point to participation rates of 58–100 % when studying different conferencing schemes. It has been pointed out that victims participate more freely compared to offenders, which may be related to the fact that offenders know a judicial reaction will follow in any case and they may then consider mediation as 'an easier option' (Immarigeon 1999). Generally, offenders feel well informed and consulted. They nevertheless are not at ease since they find it hard to imagine what the conference will be like (Maxwell et al. 2004), which is the case for victims as well (Vanfraechem 2015). The offenders' reason for participating may not always be clear (Strang et al. 2006). Probably many of them simply hope to come out better

that way than if they went to court. That is not necessarily a problem. As long as it does not lead to secondary victimization for the victims, one can realistically expect and accept that the offender begins a meeting with some calculation. Some projects mention that offenders want to participate in a restorative justice practice to apologize, explain the facts, or offer restitution (Rugge and Cornier 2005). Offenders may also become more involved and less calculating when they participate and proceed in the process (Sherman and Strang 2011).

Satisfaction of the Participants

Satisfaction of the participants is one of the most researched variables in assessments of restorative justice (Schiff 2007). Satisfaction does not mean that the participants are completely happy or enthusiastic. Satisfaction is to be understood in relation to what they expected. Sometimes satisfaction is a kind of relief, because the event went better than they feared. Moreover, satisfaction is a container concept that covers a broad diversity of feelings and subjective evaluations. Satisfaction is the effect of victims feeling that their victimization was taken seriously; that they were listened to and treated respectfully; that their opinion had been taken into account; a feeling of 'procedural justice'; or the feeling that the offender has apologized sincerely. Generally, victims are satisfied with their participation and the outcome of both mediation and conferencing (McCold and Wachtel 1998; Morris and Maxwell 2000; Pelikan and Trenczek 2008; Umbreit et al. 2008). Satisfaction may be related to the fact that they felt involved in the process. This again refers to the theory of procedural justice: Having a say and the perception of being taken into account can have a greater effect on satisfaction than the actual outcome of the process (Tyler 1990; Van Camp 2011). Dissatisfaction can be related to the feeling that the intervention was not useful, and there was no effect on the offender, or the sentence did not take mediation into account (Bolivar 2012). Overall, people tend to be dissatisfied when their initial expectations of the restorative justice process are not met, hence the crucial importance of the preparation phase (Vanfraechem 2007b). When victims were asked whether they had to re-do the process, the majority of victims responded that they would participate in a mediation or conference again (Strang 2002).

Satisfaction rates among offenders are very high (Bonta et al. 2007). McCold (2003) found more feelings of fairness and satisfaction in the programs characterized by the highest degree of stakeholder participation. He also found that the correlation between victim satisfaction and offender satisfaction was high, so that a win–win situation seems to be achieved (Strang 2002). For offenders, being able to explain the facts and offering an apology may be of importance (Rugge and Cornier 2005). Youngsters may feel the conference gives them a certain form of control over the process and they get the opportunity to do something about what has happened (Sherman et al. 1998). Being treated with respect and having a say are important, although solving the conflict may not always be possible (Daly 2003). Generally, offenders who participate tended to be more satisfied with both the process and the outcome, especially when compared to a traditional court procedure (Braithwaite 2002).

What About Reoffending?

As the focus of restorative justice is on ameliorating the harm, preventing recidivism remains a concern but seems not to be a first point of attention in restorative justice (Braithwaite 2002; Hayes 2007; Morris and Young 2000; Walgrave 2008). However, restorative justice would lose its credibility if it turned out to yield more reoffending than the treatment- or punishment-based models of responding to youth crime. Therefore, reoffending is an issue that cannot be avoided, especially not in a chapter in this volume on adolescent health. Despite the earlier-mentioned methodological shortcomings of 'what works' and recidivism research, the general trend is that restorative processes may

yield positive results. Hayes (2007, p. 428) distinguishes two main questions: (1) How does restorative justice compare with traditional justice in preventing future offending? and (2) how are the variable effects of restorative justice related to post-intervention offending?

Bonta et al. (2007) selected 39 studies of restorative justice programs, for a meta-analysis. The overall effect was about a 7 % lower rate of repeat offending, compared with traditional criminal justice handling of cases. There was little variation in the mean effect across samples (adults/juveniles) and types of intervention. Studies published after 1996 reported larger effects than those published earlier and this was attributed to the higher intrinsic quality of the projects. The schemes yielded little effect if they were contextualized within criminal justice sanctions. Those outside the criminal sanction system produced up to 10 % reduction in recidivism. Better results were achieved in programs targeting mostly violent offenders, which is in line with other outcomes reported for violent crimes (Hayes 2004; Sherman et al. 2000) and serious crimes (Sherman 2003). This is paradoxical when one observes that conferences are applied mostly to divert rather benign youth offences from court. Better effects are also achieved with low-risk offenders.

In a meta-analysis on the effect of restorative justice conferences on repeat offending, Sherman et al. (2015, p. 20) conclude that the effects of the conferences on recidivism were 'especially clear as a supplement to conventional justice, with less certainty about its effects when used as a substitute'. Zinsstag and Chapman (2012, p. 183) conclude for Northern Ireland that 'there is a clear trend that restorative responses to youth offending have generally been more effective in reducing reoffending than the long-established court orders', hereby referring to a reoffending rate for youngsters who participated in court youth conferences of 45.4 % and diversionary conferences at 29.4 %, compared to 68.3 % for custodial institutions and 58.8 % for probation orders. Similar to Sherman and Strang (2007), the authors point out that 'youth conference reoffending rates for violent offences are significantly lower than for offences against property'. Furthermore, when participants do reoffend, crimes are generally of a less serious nature (Umbreit et al. 2008; Vanfraechem 2007b).

The best predictors of recidivism seem to be previous experiences and social opportunities of the youngster, rather than the conference itself (Hayes and Daly 2004; Maxwell et al. 2004). However, when all background variables are the same, a well-run conference does make a difference when young offenders see the process as fair, feel remorse and consent to the outcome (Hayes and Daly 2003; Maxwell et al. 2004).

An important element is the follow-up after the conference. If the conference is followed by systematic support or treatment for the offender, the risk of recidivism is much lower (Maxwell et al. 2004). One can indeed not expect that a one-time event could reverse a complex context that may have existed for a long time (Corrado et al. 2003), but mediation or conferences may have a leverage effect and lead the young offender and his network to understand that they must tackle the problems in his life (Vanfraechem 2007b). It brought Bonta and associates to conclude that,

> (i)t may be not the role of restorative justice facilitators to deliver treatment programming; yet it would be useful if they would recognize the need for treatment and the type of programming that would assist in reducing offender recidivism, and make the appropriate referrals for treatment. (2007, p. 117).

Restoration and the Rehabilitation of Offending Youth

While the public intervention after youth offending aims at reducing or eliminating further offending, its objective should be broader through facilitating the pathway toward an integrated membership of social life and a predominantly positive well-being about that. It presupposes a reasonable state of mental health. For many of the juvenile offenders who are involved in restorative

processes, this perspective is not evident. On the contrary, a considerable number of them seem to be drifting away from social integration. The question here is whether restorative justice responses to their offending may help to stop or inverse that negative development.

Most evaluative research focuses on the influence of restorative processes on reoffending, although (absence of) reoffending is not an unambiguous indication of adolescent's degree of well-being. Those who have seen the movie *A Clockwork Orange* by Stanley Kubrick understand that not reoffending is not a guarantee of mental health. Inversely, some juvenile delinquency may be an indication of a normal, even healthy explorative behavior in adolescence. Unfortunately, not much research includes the possible impact of restorative interventions on broader welfare and well-being issues in young offenders. Here, we resort to a number of theoretical suppositions and a few observations.

Theories on Restorative Encounters

Reintegrative shaming is the most popular theory to explain why restorative processes function as they do (Braithwaite 1989). Shaming as such can be stigmatizing, as in most court interventions, resulting in (a risk on) psychosocial identification with non-conformism and further offending. Reintegrative shaming, on the contrary, is focused on the behavior and not on the person and is followed by gestures of reacceptance. It is a powerful emotion that can lead to desistance. This theory has been predominant in the restorative justice literature. Restorative conferences were seen as an ideal scene of 'successful reintegration ceremonies' (Braithwaite and Mugford 1994). Since then, the centrality of the shame emotion in restorative encounters has been nuanced and completed. Other (moral) emotions and dynamics, such as guilt, remorse, and empathy, seem to play an equally important role (Harris et al. 2004; Karstedt 2002; Morris 2002; van Stokkom 2002; Walgrave and Aertsen 1996). Later versions of the theory have completed the concept: It is not shame as such, but 'acknowledged shame', that is the constructive emotion which may lead to accepting responsibility and being prepared to comply. Unacknowledged shame may be turned into blame and anger toward others (Braithwaite and Braithwaite 2001, p. 12).

To reduce the risk that shame remains unacknowledged, the social emotional climate of the experience is crucial. This is where the theory of procedural justice comes in (Tyler 1990). Procedural justice focuses on the subjective sense of being treated fairly, with respect and equity, being taken seriously and being listened to by the authorities. Procedural justice is crucial for belief in the system's legitimacy, for both victims and offenders. It brings about a shift from the motivation to avoid punishment by an external power toward an internal motivation to comply with a legitimate authority. The characteristics of a restorative justice meeting offer better conditions for the stakeholders to feel such procedural justice than traditional court proceedings (Tyler 2006). The empirical assessment, so far, confirms that both victims and offenders feel fairly and respectfully treated in a conference. It is probably the main reason why they acquiesce with the process and with what is agreed. It is a crucial (but not sufficient) basis for both parties to begin to (re)construct their lives as (re)integrated citizens.

In addition to being treated fairly, the experience of being supported and expressions of confidence of loved ones provides a strong platform for a new start. Victims and offenders who can rely on ongoing relationships of informal control and support can benefit in a conference. These 'natural helpers' can be re-activated and empowered in a conference to provide ongoing guidance and assistance, and to support healing and adjustment in the aftermath of the crime and the conference. The idea recalls Hirschi's theory of social bonds (1969), especially the attachment bond. There are indeed reasons to believe that a successful conference may help strengthen social bonds, so that these bonds may act as an informal social platform for reparation and for social reintegration afterward.

If participants experience procedural justice and feel supported by their informal network,

shame can be acknowledged and can become reintegrative. For offenders, it may be the starting point for reconstructing their identity in a more socially conforming version. Maruna (2001) found that desisting from further criminality depends most on the opportunity to 'make good,' meaning to reform the conception of the self as a social-norm-compliant person. Maruna (2001) also presents restorative conferences as redemption rituals and sees the opportunity to repair what has been done wrong as a major chance to build a new identity. In that sense, a restorative justice encounter can be very helpful for the offender to turn the page and commence the way toward social rehabilitation (Bazemore and Maruna 2009). The latter observation brings us to the Good Lives Model.

The Good Lives Model

Ward and Maruna (2007) present the Good Lives Model (GLM) of rehabilitation as an alternative to the risk-need-responsivity (RNR) model. The RNR model is most represented in the so-called 'what works' tradition, a series of meta-analyses of evaluation of treatment and prevention programs that identify mechanisms that may be effective in reducing recidivism.

Ward and Maruna (2007) advance two elements: (1) Rather than asking the question 'what works,' we should ask 'what helps' offenders, and (2) current justice interventions seem to impede rather than stimulate the offender's desisting from crime. The starting point in GLM is the idea that offenders are humans and have similar needs and expectations as non-offenders (feeling integrated, relatedness, creativity, and physical health). Most recidivist offenders, however, are unable to reach these goals on their own. Without a realistic hope that the aspiration can become true, they will not commit themselves into an enduring effort to surpass the crime-prone situation. Appropriate help can foster such hope. According to the GLM, correctional interventions should aim at promoting the individual's goodness, as well as managing and reducing risks (Ward and Maruna 2007). The GLM aims 'to reduce risk alongside building offenders' capacity to live personally meaningful and fulfilling lives' (Ward et al. 2014, p. 28). This approach uses the offender's values in the design of the program and aims to equip him or her with capabilities needed to implement a plan for a better life. Rather than trying to move away from crime, the GLM presumes that promoting human goodness will help to avoid risks and that it is easier to motivate individuals to change when focusing on perceived benefits rather than on what they need to leave behind. Advocates of the GLM believe that human beings can 'only flourish within a community that provides emotional support, material resources, education, and even the means of survival' (Ward and Maruna 2007, p. 117). Therefore, an ecological framework becomes important, taking the offender's context into account. They believe in the offender's own agency and respect the individual's capacity to take up responsibility and make certain decisions for him or herself. Rather than starting solely from the individual's deficits, the GLM looks at the motivation of the individual to have committed an offence and from there, help him to secure moral goods in a socially acceptable way.

As in restorative justice, the idea is that 'all human beings have intrinsic value and (…) their core interests should be taken into account when making important decisions about their lives' (Ward et al. 2014, p. 29). According to the authors, restorative justice can be seen as rehabilitative in a normative manner in that offenders take responsibility for the harm done and want to 'make good' for it. Furthermore, 'attending to the repair and reintegration of the offender [can be viewed] as a community obligation' (Ward et al. 2014, p. 31). Besides rehabilitation, Ward et al. (2014) observe a link between restorative justice and desistance, the latter including all factors that make offenders stay away from crime. Restorative justice can, through the encounter with the victim, lead to empathy in the offender and consequently to an active search for reintegration and reconciliation. Restorative justice can then reinforce the shared values with victims and community, which can have a reintegrative effect (Ward et al. 2014).

Going on the Defensive: Avoiding Further Harm by the Intervention

Criminological literature has made clear that the offence and the public response to offending, may in itself, cause additional social harm to the one who is subjected to this intervention. The literature points to risks for further social exclusion and stigmatization (Gatti et al. 2009; McAra and McVie 2010). This is especially true for the many (young) offenders who already have a long history of social exclusion and marginalization. The theory of societal vulnerability characterizes this history as an accumulation of negative experiences in contact with societal institutions such as schools and police, a lack of prospects in the labor market, and the like, leading to unfavorable social prospects and inapt coping mechanisms (McAra and McVie 2012; Pauwels et al. 2011; Vettenburg et al. 2002; Walgrave and Vanfraechem 2012). This process leads young people to feel detached from the mainstream societal goals and the means to achieve these, whereas adhering to peers and the street life might lead them to an alternative identity and the development of 'criminal capital' (Hagan and McCarthy 1997). The risk is that the judicial intervention just adds a negative experience to the long list and thus would confirm this societal vulnerability process.

Consequently, a primary concern of the public intervention must be to try and involve the offender in a non-stigmatizing, inclusive and reintegrative manner. Or, in line with the GLM, the negative alternative identities should be countered by 'prosocial attainment of primary goods', which is in its turn associated with 'higher levels of well-being, as well as the development of a self-identity and purpose in life' (Ward et al. 2014, p. 28). This resembles the respectful and inclusive dialogs, which are typical in restorative processes like mediation or conferencing that do offer an ideal scene for such an endeavor. That may be the case, indeed, despite some possible risks and drawbacks (Walgrave and Vanfraechem 2012). The particular opportunities for juveniles in a position of societal vulnerability are as follows.

First, the experience of the restorative conference, characterized by a respectful and supportive climate, may have great (re)educative value. For example, this climate keeps the young offender more open for direct and personal confrontation with the victim's suffering. It will make him understand the wrong he has done and recognize the meaning of the norm. The encouragement to make the reparative gestures is at the same time a signal of the belief of the other participants in his positive potentials.

Second, a restorative gesture by the offender can help to stop the negative spiral in which many of them are involved. If, for example, the young offender accepts to work to compensate the harm to the victim, he shows that he is more than a thief or a hooligan. Instead of being labeled as a criminal who has to be punished or treated, he appears as a person with positive value who is willing to make up for what he did wrong. It enhances the chances that he will be appreciated and supported by others, which may open the pathway toward social (re)integration.

Third, such respectful and supportive encounter is also an opportunity for the offender and his family to realize that things are really going wrong and that something must be done. It may be an occasion to accept assistance or treatment. That is much more difficult to accept if assistance is imposed or forced upon the offender. Such duress is mostly experienced as an intrusion, provoking resistance against the offer. More particularly, many young offenders confronted with justice interventions live with parents who have lost control over them, who have given up trying to offer adequate support. Yet, an adequate balance of support and control is crucial in the relation between parents and their children (Rollins and Thomas 1979). The experience of meeting for a conference may help re-establish the relation between the parents and the adolescent. Parents are not treated as the causes of the problem, but recognized as possible parts of the solution (Prichard 2003). The agreements after such a conference, which are backed by official agencies, provide parents new grounds for authority over their children. The follow-up of the agreement often also contains a guidance

plan to help the parents' parenting. It may be the beginning of a new start in the relationship with their son or daughter. Such constructive outcomes are less probable after a judicial procedure and sentence, which mostly point to the parents' shortcomings, putting them in a defensive position.

The process focused on repairing the harm caused, which does not neglect the psychosocial assistance needed for these youngsters. Addressing the harm to the offender may link closely to a rehabilitative approach (Bazemore and Bell 2004). While restorative justice is not the same as rehabilitation, as we made clear in a preceding section, it can nevertheless have rehabilitative effects. For the offender, especially the harm done to social relationships by his crime can be repaired (Llewellyn and Howse 1999). His family and friends may be affected by the crime, and there may be a loss of trust. It is important to rebuild that trust and improve these relationships. The aim of the restorative approach is to restore those relations. Not only is the victim harmed by the crime, but also the community and the offender (who is part of this network of relations) are harmed.

Conclusion

Most, if not all, youth justice systems include the (re)education, the rehabilitation, the treatment, or the welfare of the juvenile offender as an important objective. While reducing reoffending is the most explicit goal, the broader well-being of the young is also, at least implicitly, a goal. In recent decades, these systems have come under pressure. The pressure can partly be attributed to a general sociocultural climate tending to more strict repression and punishment with both adults and adolescents offenders. One must, however, also recognize that traditional welfare-oriented youth justice systems cannot present triumphant results. Whatever social or clinical or (re)educative approach is implemented under the judicial mandate, the reoffending rates remain high. Moreover, many interventions appear to degrade the social position and prospects of the young, rather than improving them.

From a children's rights perspective, the guiding factor of all interventions with children in contact with the law should be 'the well-being of the child' (Kilkelly 2008). We know that adolescence and the transition to adulthood is a period in life characterized by many changes and evolution on the cognitive, physical, relational, and emotional level. These transitions can be a burden to the mental health, the well-being, and well-becoming of adolescents (Ben-Arieh 2008; Cops et al. 2012). Although, generally speaking, the vast majority of our young people are doing well, we also know that this is not the case for all (Jacobs and Cops 2013; Op de Beeck 2010). Moreover, as most attention in contemporary debates on youth justice seem to focus on offending and re-offending, we witness a decrease in youth delinquency rates while the number of young people in need of help because of the problematic and alarming conditions in which they grow up is increasing in most countries. An important minority of young people are experiencing low self-esteem and confidence, negative emotions, depressions, and anxieties. As we know from social psychology, mental health, well-being, and how we feel is to a large extent determined by 'interaction', and we know that life conditions and events can create acute and chronic strain that impacts well-being and mental health in a fundamental way (De Boeck 2014). Generally speaking, those young people coming in contact with the law (either because of what they have done or because of the troubling nature of the conditions in which they live) are also more vulnerable to reduced well-being and mental health problems. A youth justice system that aims at doing justice for young people cannot solely focus on (re)offending while ignoring the well-being of the child or young person. As the well-being of all adolescents depends on their social inclusion, a justice system that addresses youth offending cannot add to the risks of social exclusion. On the contrary, it must aim at enhancing the opportunities for social (re) integration.

We believe that the emergence of restorative justice seems to open up more possibilities for social reintegration. Instead of the continuous

discussion of welfare-oriented versus punishment-based approaches, restorative justice seems to present a possible 'third way' of responding to crime. Besides favorable social–ethical reasons, it also appears to offer considerable potential for both the victim and the offender, it may set the conditions for a decent legal frame, and it appears to be no more of a threat to public safety than other approaches. These observations bring a number of scholars to argue for a systematic priority for restorative justice in response to youth offending. This raises the core question of the chapter: Does restorative justice contribute positively to the reduction of reoffending and to the general well-being of the young people confronted with the system?

While restorative justice is hard to combine with the punitive premise of the current criminal justice system, there is not a principled contradiction with the welfare orientation. One could even say that the welfare orientation in restorative justice is perhaps wider than in traditional youth justice approaches. It also considers the well-being of the victim and other stakeholders, whereas the traditional system focuses solely on the young offender. Theoretical reasons are advanced for positive expectations. They are confirmed by clinical observations. The empirical data available so far do not refute the positive expectations. There is no doubt that restorative justice is a very promising pathway to further explore, especially if one takes into account the general well-being of the young offender and his victim. The conditions are, however, a continuous 'quality control' of the mediations, conferences, and other restorative practices implemented, as well as an accurate scientific follow-up of the theoretical, philosophical, juridical, and psychosocial dimensions of the developments in restorative justice.

Finally, one must be aware that no youth justice system can resolve all problems linked to criminal and other problematic youthful behavior. It is not the justice system, based on the possibility of using repression and coercion, that should come first to mind in designing a policy to foster the well-being and future prospects of its (young) citizens. Criminal justice, and also youth justice, only intervenes as a last resort when all other possibilities to nurture law-abidance among citizens have proven unsuccessful. More can be expected from policies that are based on the same social–ethical ground as restorative justice: a concern for social equity and participation, based on respect and solidarity. This philosophy penetrates policies regarding family, school, living conditions, social opportunities, and welfare problems. Not only would that benefit the social prospects and positive motivation of all young people, but it would also have a tremendous preventative effect. The best youth justice system is the system that has to intervene as little as possible.

References

Acorn, A. (2004). *Compulsory compassion: A critique of restorative justice*. Vancouver: UCB Press.

Aertsen, I., & Peters, T. (1998). Mediation for reparation: The victim's perspective. In E. Fattah & T. Peters (Eds.), *Support for crime victims in a comparative perspective. A collection of essays dedicated to the memory of Prof. F. McClintock* (pp. 229–251). Leuven: Leuven University Press.

Andrews, D., & Bonta, J. (2003). *The psychology of criminal conduct*. Cincinnati: Anderson.

Bailleau, F., Cartuyvels, Y., & De Fraene, D. (2010). The criminalisation of youth and current trends: The sentencing game. In F. Bailleau & Y. Cartuyvels (Eds.), *The criminalisation of youth. Juvenile justice in Europe, Turkey and Canada* (pp. 7–28). Brussel: VUBPress.

Bazemore, G., & Bell, D. (2004). What is the appropriate relationship between restorative justice and treatment? In H. Zehr & B. Toews (Eds.), *Critical issues in restorative justice* (pp. 119–132). Monsey: Criminal Justice Press; Cullompton: Willan Publishing.

Bazemore, G., & Maruna, S. (2009). Restorative justice in the reentry context: Building new theory and expanding the evidence base. *Victims and Offenders, 4*, 375–384.

Bazemore, G., & Walgrave, L. (1999). Restorative juvenile justice: In search of fundamentals and an outline for systemic reform. In G. Bazemore & L. Walgrave (Eds.), *Restorative justice for juveniles. Repairing the harm by youth crime* (pp. 45–74). Monsey, New York: Criminal Justice Press.

Ben-Arieh, A. (2008). Indicators and indices of children's well-being: Towards a more policy-oriented perspective. *European Journal of Education, 43*(1), 37–50.

Berghmans, M. (2012). Verantwoordelijkheid. In G. Decock & J. Put (Eds.). *Jeugdsanctierecht gewikt en gewogen. Toetsing van beleid en praktijk aan de principes van het jeugdsanctierecht* (pp. 19–36). Gent: Larcier.

Bianchi, H. (1994). *Justice as a sanctuary. Towards a new System of crime control*. Bloomington: Indiana University Press.

Blad, J. (1996). *Abolitionisme als strafrechtstheorie*. Amsterdam: Gouda Quint.

Blad, J. (2013). Civilization of criminal justice: Restorative justice amongst other strategies. In D. Cornwell, J. Blad, & M. Wright (Eds.), *Civilising criminal justice. An international restorative agenda for penal reform* (pp. 209–253). Hook: Waterside Press.

Bloomfield, P. (Ed.). (2008). *Morality and self-interest*. Oxford: Oxford University Press.

Bolivar, D. (2012). *Victim-offender mediation and victim's restoration. A victimological study in the context of restorative justice* (Ph.D. thesis). Leuven: University of Leuven.

Bonta, J., Jesseman, R., Rugge, T., & Cornier, R. (2007). Restorative justice and recidivism: Promises made, promises kept? In D. Sullivan & L. Tifft (Eds.), *Handbook of restorative justice. A global perspective* (pp. 108–120). London: Routledge.

Boutellier, H. (1993). *Solidariteit en slachtofferschap. De morele betekenis van criminaliteit in een postmoderne cultuur*. Nijmegen: Sun.

Braithwaite, J. (1989). *Crime, shame and reintegration*. Cambridge: Cambridge University Press.

Braithwaite, J. (2002). *Restorative justice and responsive regulation*. Oxford: Oxford University Press.

Braithwaite, J. (2005). Between proportionality & impunity: confrontation ⇒ truth ⇒ prevention. *Criminology, 43*(2), 283–306.

Braithwaite, J., & Braithwaite, V. (2001). Shame, shame management and regulation. In E. Ahmed, N. Harris, J. Braithwaite, & V. Braithwaite (Eds.), *Shame management through reintegration* (pp. 1–69). Cambridge: Cambridge University Press.

Braithwaite, J., & Mugford, S. (1994). Conditions of successful reintegration ceremonies. Dealing with juvenile offenders. *British Journal of Criminology*, 139–171.

Braithwaite, J., & Pettit, Ph. (1990). *Not just desert. A republican theory of criminal justice*. Oxford: Oxford University Press.

Cacioppo, J., & Patrick, W. (2008). *Loneliness: Human nature and the need for social connection*. New York: Norton and Company.

Cario, R. (2005). *Justice restaurative. Principes et Promesses*. Paris: L'Harmattan.

Cartuyvels, Y., & Bailleau, F. (2010). Youth criminal justice in Europe. At the intersection of protective thinking, a neo-liberal turn, and neo-conservative ideology. In F. Bailleau F. & Y. Cartuyvels (Eds.), *The criminalisation of youth. Juvenile justice in Europe, Turkey and Canada* (pp. 263–284). Brussel: VUB Press.

Cartuyvels, Y., Christiaens, J., De Fraene, D., & Dumortier, E. (2010). Juvenile justice in Belgium seen through the sanctions looking-glass. In F. Bailleau & Y. Cartuyvels (Eds.), *The criminalisation of youth. Juvenile justice in Europe, Turkey and Canada* (pp. 29–58). Brussel: VUB Press.

Christiaens, J., Dumortier, E., & Nuytiens, A. (2011). Belgium. In F. Dünkel, J. Grzywa, P. Horsfield, & I. Pruin (Eds.), *Juvenile justice systems in Europe. Current situations and reform developments* (Vol. 1, 2nd ed., pp. 99–130). Mönchengladbach: Forum Verlag Godesberg.

Christie, N. (1981). *Limits to pain*. Oxford: Martin Robertson.

Cops, D., Op de Beeck, H., Pleysier, S., & Put, J. (2012). Cultureel-religieuze verschillen in de rapportage van het subjectief welbevinden bij Brusselse jongeren. In I. Glorieux, J. Siongers, & W. Smits (Eds.), *Mark Elchardus. Cultuursociologie buiten de lijnen* (pp. 138–157). Leuven: Lannoo Campus.

Corrado, R. R., Cohen, I. M., & Odgers, C. (2003). Multi-problem violent youth: A challenge for the restorative justice paradigm. In E. Weitekamp & H.-J. Kerner (Eds.), *Restorative justice in context: International practice and directions* (pp. 1–22). Cullompton: Willan Publishing.

Daly, K. (2003). Making variation a virtue: Evaluating the potential and limits of restorative justice. In E. Weitekamp & H.-J. Kerner (Eds.), *Restorative justice in context: International practice and directions* (pp. 23–50). Cullompton: Willan Publishing.

De Boeck, A. (2014). Over zelfwaardering, slachtofferschap van (cyber)pesten, en de beschermende invloed van vrienden. In L. Bradt, S. Pleysier, J. Put, J. Siongers, & B. Spruyt (Eds.). *Jongeren in cijfers en letters. Bevindingen uit de JOP-monitor 3 en de JOP-schoolmonitor 2013* (pp. 111–135). Leuven: Acco.

de Haan, W. (1990). *The politics of redress*. London: Sage.

De Mesmaecker, V. (2014). *Perceptions of criminal justice*. London: Routledge.

Dignan, J. (2005). *Understanding victims and restorative justice*. Maidenhead: McGraw Hill, Open University Press.

Dignan, J. (2007). Juvenile justice, criminal courts and restorative justice. In G. Johnstone & D. W. Van Ness (Eds.), *Handbook of restorative justice* (pp. 269–291). Cullompton: Willan Publishing.

Doak, J., & O'Mahony, D. (2011). Developing mediation and restorative justice for young offenders across Europe. In F. Dünkel, J. Grzywa-Holten, P. Horsfield, & I. Pruin (Eds.), *Juvenile justice systems in Europe. Current situations and reform developments* (Vol. 4, 2nd ed., pp. 1717–1746). Mönchengladbach: Forum Verlag Godesberg.

Doek, J. (2009). The UN convention on the rights of the child. In J. Junger-Tas & F. Dünkel (Eds.), *Reforming juvenile justice* (pp. 33–44). New York, Dordrecht: Springer.

Dünkel, F. (2013). Youth justice policy in Europe-between minimum intervention, welfare and new punitiveness. In T. Daems, D. van Zyl Smit, & S. Snacken (Eds.), *European penology?* (pp. 145–170). London: Hart Publishing.

Dünkel, F., Grzywa-Holten, J., & Horsfield, Ph (Eds.). (2015). *Restorative justice and mediation in penal matters in Europe. A stock-taking of legal issues, implementation strategies and outcomes in 36 European countries*. Mönchengladbach: Forum Verlag Godesberg.

Dünkel, F., Grzywa-Holten, J., Pruin, I., & Selih, A. (2011). Juvenile justice in Europe—Legal aspects, policy trends and perspectives in the light of human rights standards. In F. Dünkel, J. Grzywa-Holten, P. Horsfield, & I. Pruin (Eds.). *Juvenile justice systems in Europe. Current situations and reform developments* (Vol. 1, 2nd ed., pp. 1839–1898). Mönchengladbach: Forum Verlag Godesberg.

Elias, N. (2000). *The civilising process. Sociogenetic and psychogenetic investigations*. Revised edition by E. Dunning, J. Goudsbloem, & S. Mennel. Oxford: Blackwell Publishers.

Faget, J. (1997). *La Médiation: essai de politique pénale*. Ramonville Saint Agnes: Erès.

Ferwerda, H., & van Leiden, I. (2012). *De schade hersteld? Een onderzoek naar herstelbemiddeling bij jeugdige delinquenten in Vlaanderen*. Arnhem: Bureau Beke.

Garland, D. (2001). *The culture of control. Crime and social order in contemporary society*. Oxford: Oxford University Press.

Gatti, U., Tremblay, R. E., & Vitaro, F. (2009). Iatrogenic effect of juvenile justice. *The Journal of Child Psychology and Psychiatry, 50*(8), 991–998.

Goedseels, E. (2012). Constructief sanctioneren met maximale kansen voor een herstelrechtelijk aanbod. In G. Decock & J. Put (Eds.), *Jeugdsanctierecht gewikt en gewogen. Toetsing van beleid en praktijk aan de principes van het jeugdsanctierecht* (pp. 55–84). Gent: Larcier.

Hadley, M. (2001). *The spiritual roots of restorative justice*. Albany (NY): Suny Press.

Hagan, J., & McCarthy, B. (1997). *Mean streets. Youth crime and homelessness*. Cambridge: Cambridge University Press.

Harris, N., Walgrave, L., & Braithwaite, J. (2004). Emotional dynamics in restorative conferences. *Theoretical Criminology, 8*(2), 191–210.

Hayes, H. (2004). Assessing reoffending in restorative justice conferences. *Australian and New Zealand Journal of Criminology, 38*(1), 77–101.

Hayes, H. (2007). Reoffending and restorative justice. In G. Johnstone & D. W. Van Ness (Eds.), *Handbook of restorative justice* (pp. 426–444). Cullompton: Willan Publishing.

Hayes, H., & Daly, K. (2003). Youth justice conferencing and reoffending. *Justice Quarterly, 20*(4), 725–764.

Hayes, H., & Daly, K. (2004). Conferencing and re-offending in Queensland. *Australian and New Zealand Journal of Criminology, 37*(2), 167–191.

Hirschi, T. (1969). *Causes of delinquency*. Berkeley: University California Press.

Hoyle, C. (2010). The case for restorative justice. In C. Cunneen & C. Hoyle (Eds.), *Debating restorative justice* (pp. 1–100). Oxford: Hart.

Hulsman, L., & Bernat de Celis, J. (1984). *Peines perdues. Le système pénal en question*. Paris: Centurion.

Immarigeon, R. (1999). Restorative justice, juvenile offenders and crime victims: A review of literature. In G. Bazemore & L. Walgrave (Eds.), *Restorative juvenile justice—Repairing the harm of youth crime* (pp. 305–325). Monsey: Willow Tree Press.

Jacobs, L., & Cops, D. (2013). Het subjectief welbevinden van Antwerpse en Gentse scholieren. In N. Vettenburg, M. Elchardus, J. Put, & S. Pleysier (Eds.), *Jong in Antwerpen en Gent. Bevindingen uit de JOP-monitor Antwerpen-Gent* (pp. 123–146). Leuven: Acco.

Karstedt, S. (2002). Emotions and criminal justice. *Theoretical Criminology, 6*(3), 299–317.

Kilkelly, U. (2008). Youth justice and children's rights: Measuring compliance with international standards. *Youth Justice, 8*(3), 187–192.

Kirkwood, S. (2010). Restorative Justice cases in Scotland: Factors related to participation, the restorative process, agreement rates and forms of reparation. *European Journal of Criminology, 7*(2), 107–122.

Kurki, L. (2003). Evaluating restorative practices. In A. von Hirsch, J. Roberts, A. Bottoms, K. Roach, & M. Schiff (Eds.), *Restorative justice and criminal justice: Competing or reconcilable paradigms* (pp. 293–314). Oxford: Hart.

Latimer, J., Dowden, C., & Muise, D. (2001). *The effectiveness of restorative justice practices: A meta analysis*. Ottawa: Department of Justice.

Lauwaert, K. (2009). *Herstelrecht en procedurele waarborgen*. Apeldoorn: Maklu.

Lemonne, A., & Hydle, I. (2010). The evaluation of restorative justice: Lessons to be learned from a data collection of evaluative programmes in Europe. In I. Vanfraechem, I. Aertsen, J. Willemsens (Eds.), *Restorative justice realities. Empirical research in a European context* (pp. 11–37). Den Haag: Eleven International Publishing.

Llewellyn, J., & Howse, R. (1999). *Restorative justice—A conceptual framework*. Retrieved from http://www.lcc.gc.ca/research_project/99_justice_1-en.asp

Maruna, S. (2001). *Making good: How ex-convicts reform and rebuild their lives*. Washington DC: American Psychological Association Press.

Maxwell, G., Kingi, V., Robertson, J., Morris, A., & Cunningham, C. (2004). *Achieving effective outcomes in youth justice.* Final report, Ministry of Social Development, New-Zealand.

Maxwell, G., & Morris, A. (1994). The New Zealand model of family group conferences. In C. Alder & J. Wundersitz (Eds.), *Family conferencing and juvenile justice: The way forward or misplaced optimism?* (pp. 15–43). Canberra: Australian Institute of Criminology. Retrieved from http://www.aic.gov.au/publications/lcj/family/ch2.pdf

McAra, L., & McVie, S. (2010). Youth crime and justice: Key messages from the Edinburgh Study of Youth Transitions and Crime. *Criminology and Criminal Justice, 10*(2), 179–209.

McAra, L., & McVie, S. (2012). Negotiated order: The groundwork for a theory of offending pathways. *Criminology and Criminal Justice, 12*, 347–375.

McCold, P. (2003). A survey of assessment research on mediation and conferencing. In L. Walgrave (Ed.), *Repositioning restorative justice* (pp. 67–117). Cullompton: Willan Publishing.

McCold, P. (2004). Paradigm muddle: The threat to restorative justice posed by its merger with community justice. *Contemporary Justice Review, 7*(1), 13–35.

McCold, P., & Wachtel, B. (1998). *Restorative policing experiment. The Bethlehem Pennsylvania police family group conferencing project*. Washington, DC: Printing Office.

Mestitz, A., & Ghetti, S. (Eds.). (2005). *Victim-offender mediation with youth offenders in Europe. An overview and comparison of 15 countries*. Dordrecht: Springer.

Miers, D., & Aertsen, I. (Eds.). (2012). *Regulating restorative justice. A comparative study of legislative provision in European countries*. Frankfurt: Verlag fûr Polizeiwissenschaften.

Morris, A. (2002). Shame, guilt and remorse: Experiences from family group conferences in New Zealand. In I. Weijers & A. Duff (Eds.), *Punishing juveniles. Principle and critique* (pp. 157–178). Oxford: Hart.

Morris, A., & Maxwell, G. (2000). The practice of family group conferences in New Zealand: Assessing the place, potential and pitfalls of restorative justice. In A. Crawford & J. Goodey (Eds.), *Integrating a victim perspective within criminal justice. International debates* (pp. 207–225). Aldershot: Dartmouth Publishing Company Limited, Ashgate Publishing Ltd.

Morris, A., & Young, W. (2000). Reforming criminal justice: The potential of restorative justice. In H. Strang & J. Braithwaite (Eds.), *Restorative justice. Philosophy to practice* (pp. 11–31). Aldershot: Dartmouth Publishing Company Limited.

Muncie, J. (2008). The 'Punitive Turn' in Juvenile Justice: Cultures of control and rights compliance in Western Europe and the USA. *Youth Justice, 8*(2), 107–121.

Muncie, J., & Goldson, B. (2006). States of transition: Convergence and diversity in international youth justice. In J. Muncie & B. Goldson (Eds.), *Comparative youth justice* (pp. 196–218). London: Sage.

Op de Beeck, H. (2010). Welbevinden van Vlaamse jongeren. In N. Vettenburg, J. Deklerck, & J. Siongers (Eds.), *Jongeren in cijfers en letters. Bevindingen uit de JOP-monitor 2* (pp. 213–238). Leuven: Acco.

Pauwels, L., Vettenburg, N., Gavray, C., & Brondeel, R. (2011). Societal vulnerability and troublesome youth group involvement. *Journal of International Criminal Justice, 21*(3), 283–296.

Pelikan, C., & Trenczek, T. (2008). Victim offender mediation and restorative justice. The European landscape. In D. Sullivan & L. Tifft (Eds.), *Handbook of restorative justice* (pp. 63–90). London: Routledge.

Pemberton, A. (2009). *The cross-over: An interdisciplinary approach to the study of victims of crime*. Apeldoorn: Maklu.

Pemberton, A. (2015). Changing frames? Restorative justice in the Netherlands. In I. Vanfraechem, D. Bolivar, & I. Aertsen (Eds.), *Victims and restorative justice: Needs, experiences and policy challenges* (pp. 126–152). London: Routledge.

Pemberton, A., Winkel, F. W., & Groenhuijsen, M. (2008). Evaluating victims' experiences in restorative justice. *British Journal of Community Justice, 6*(2), 98–119.

Peters, T., & Aertsen, I. (1995). Restorative justice. In search of new avenues in dealing with crime. In C. Fijnaut, J. Goethals, T. Peters, & L. Walgrave (Eds.), *Changes in society, crime and criminal justice in Europe* (Vol. 1, pp. 311–342). Den Haag: Kluwer Law International.

Prichard, J. (2003). *Juvenile conferencing and restorative justice in Tasmania* (Ph.D. thesis). Hobart: University of Tasmania.

Put, J. (2010). *Handboek Jeugdbeschermingsrecht.* Bruges: die Keure.

Put, J., Vanfraechem, I., & Walgrave, L. (2012). Restorative dimensions in Belgian youth justice. *Youth Justice, 12*(2), 83–100.

Put, J., & Walgrave, L. (2006). Belgium: From protection towards accountability? In J. Muncie & B. Goldson (Eds.), *Comparative youth justice* (pp. 111–126). London: Sage Publications.

Putnam, R. (2000). *Bowling alone*. New York: Simon and Schuster.

Rollins, B., & Thomas, D. (1979). Parental support, power and control techniques in the socialization of children. In W. Burr & R. Hill (Eds.), *Contemporary theories about the family* (pp. 317–364). New York: Free Press.

Roose, R. (2011). Jeugdzorg: een debat voorbij de criminaliteit. In I. Aertsen, T. Daems, A. Haaren, F. Hutsebaut, & J. Maesschalck (Eds.), *Deviante wetenschap. Het domein van de criminologie* (pp. 205–214). Leuven: Acco.

Rugge, T., & Cornier, R. (2005). Restorative justice in cases of serious crime: An evaluation. In E. Elliott & R. M. Gordon (Eds.), *New directions in restorative*

justice. Issues, practice, evaluation (pp. 266–277). Cullompton: Willan Publishing,

Rutter, M., Giller, H., & Hagell, A. (1998). *Antisocial behaviour by young people*. Cambridge: Cambridge University Press.

Schafer, S. (1977). *Victimology. The victim and his criminal*. Reston: Prentice Hall.

Schiff, M. (2007). Satisfying the needs and interests of stakeholders. In G. Johnstone & D. W. Van Ness (Eds.), *Handbook of restorative justice* (pp. 228–246). Cullompton: Willan Publishing.

Schuilenburg, M., & van Steden, R. (2014). Positive security. A theoretical framework. In M. Schuilenberg, R. van Steden, & B. Oude Breuil (Eds.), *Criminology. Reflections on care, belonging and security* (pp. 19–32). The Hague: Eleven International Publishing.

Schuilenburg, M., van Steden, R., & Oude, Breuil B. (Eds.). (2014). *Positive criminology. reflections on care, belonging and security*. The Hague: Eleven International Publishing.

Shapland, J., Atkinson, A., Atkinson, H., Dignan, J., Edwards, L., Hibbert, J., Howes, M., & … Sorsby, A. (2008). *Does restorative justice affect reconviction?* The fourth report from the evaluation of three schemes. Retrieved from http://webarchive.nationalarchives.gov.uk/+/http://www.justice.gov.uk/restorative-justice-report_06-08.pdf

Sherman, L. (2003). Reason for emotion: Reinventing justice with theories, innovations, and research. *Criminology, 41*(1), 1–37.

Sherman, L., & Strang, H. (2007). *Restorative justice: The evidence*. London: Smith Institute.

Sherman, L., & Strang, H. (2011). Empathy for the devil: The nature and nurture of revenge. In S. Karstedt, I. Loader, & H. Strang (Eds.), *Emotions, crime and justice* (pp. 145–167). Oxford: Hart Publishing.

Sherman, L., Strang, H., Barnes, G., Braithwaite, J., Inkpen, N., & Teh, M. M. (1998). *Experiments in restorative policing.* A progress report on the Canberra reintegrative shaming experiments (RISE). Retrieved from http://www.aic.gov.au/rjustice/rise/progress/1998.html

Shearar, A., & Maxwell, G. (2012). Revolution, decline, and renewal: Restorative youth justice in New Zealand. In E. Zinsstag & I. Vanfraechem (Eds.), *Conferencing and restorative justice: International practices and perspectives* (pp. 101–116). Oxford: Oxford University Press.

Sherman, L. W., Strang, H. K., Mayo-Wilson, E., Woods, D. J., & Ariel, B. (2015). Are restorative justice conferences effective in reducing repeat offending? Findings from a Campbell systematic review. *Journal of Quantitative Criminology, 31*, 1–24.

Sherman, L., Strang, H., & Woods, D. (2000). *Recidivism pattern in the Canberra reintegrative shaming experiments (RISE)*. Canberra: Centre for Restorative Justice, Australian National University.

Snacken, S., & Dumortier, E. (2011). Resisting punitiveness in Europe? An introduction. In S. Snacken & E. Dumortier (Eds.), *Resisting punitiveness in Europe? Welfare, human rights and democracy* (pp. 1–20). London: Routledge.

Stattin, H., Kerr, M., & Bergman, L. (2010). On the utility of Moffit's typology trajectories in long-term perspective. *European Journal of Criminology, 7*(6), 521–545.

Strang, H. (2002). *Repair or revenge: Victims and restorative justice*. Oxford: Clarendon.

Strang, H., & Sherman, L. (2015). The morality of evidence. *Restorative Justice: An International Journal*, *3*(1), 6–27.

Strang, H., Sherman, L., Angel, C., Woods, D., Bennett, S., Newbury-Birch, D., et al. (2006). Victim evaluations of face-to-face restorative justice conferences: A quasi-experimental analysis. *Journal of Social Issues, 62*(2), 281–306.

Suggnomè, V. Z. W. (2005). *Waarom? Slachtoffer-dader bemiddeling in Vlaanderen*. Antwerpen-Apeldoorn: Garant.

Sullivan, D., & Tifft, L. (2006). Introduction: The healing dimension of restorative justice: A one-world body. In D. Sullivan & L. Tifft (Eds.), *Handbook of restorative justice* (pp. 1–16). London: Routledge.

Tulkens, F. (1993). Les transformations du droit pénal aux Etats-Unis. Pour un autre modèle de justice. In UCL Law Faculty (Ed.), *Nouveaux itinéraires en droit* (pp. 461–493). Bruxelles: Bruylandt.

Tyler, T. (1990). *Why people obey the law*. New Haven (Conn.): Yale University Press.

Tyler, T. (2006). Restorative justice and procedural justice: Dealing with rule breaking. *Journal of Social Issues, 62*(2), 307–326.

Umbreit, M., Coates, R., & Vos, B. (2008). Victim offender mediation: An evolving evidence-based practice. In D. Sullivan & L. Tifft (Eds.), *Handbook of restorative justice* (pp. 52–62). London: Routledge.

Van Camp, T. (2011). *Is there more to restorative justice than mere compliance to procedural justice? A qualitative reflection from the victims' point of view* (Ph.D. thesis). Montreal: Université de Montréal.

Van Camp, T. (2014). *Victims of violence and restorative practices. Finding a voice*. London: Routledge.

Vanfraechem, I. (2007a). Community, society and state in restorative justice: Some reflections. In R. Mackay, M. Bosjnak, J. Deklerck, C. Pelikan, B. van Stokkom, & M. Wright (Eds.), *Images of restorative justice theory* (pp. 3–91). Frankfurt am Main: Verlag fur Polizei und Wissenschaft.

Vanfraechem, I. (2007b). *Herstelgericht groepsoverleg.* Brugge: die keure.

Vanfraechem, I. (2015). Victims and conferencing. In I. Vanfraechem, D. Bolivar, & I. Aertsen (Eds.), *Victims and restorative justice* (pp. 153–171). London: Routledge.

Vanfraechem, I., & Bolivar, D. (2015). Restorative justice and victims of crime. In I. Vanfraechem, D. Bolivar, & I. Aertsen (Eds.), *Victims and restorative justice* (pp. 48–75). London: Routledge.

Vanfraechem, I., Lauwaert, K., & Decocq, M. (2012). Conferencing on the crossroads between rehabilitation and restorative justice. In E. Zinsstag & I. Vanfraechem (Eds.), *Conferencing and restorative justice: International practices and perspectives* (pp. 189–203). Oxford: Oxford University Press.

Van Ness, D. (2002). The shape of things to come: A framework for thinking about a restorative justice system. In E. Weitekamp & H. J. Kerner (Eds.), *Restorative justice: Theoretical foundations* (pp. 1–20). Cullompton: Willan Publishing.

Van Ness, D., Heetderks, K., & Strong, (2002). *Restoring justice* (2nd ed.). Cincinnati: Anderson.

Van Ness, D., Heetderks, K., & Strong, (2006). *Restoring justice. An introduction to restorative justice* (3rd ed.). Cincinnati: Anderson.

Van Ness, D., & Schiff, M. (2001). Satisfaction guaranteed? The meaning of satisfaction in restorative justice. In G. Bazemore & M. Schiff (Eds.), *Restorative community justice. Repairing harm and transforming communities* (pp. 47–62). Cincinnati: Anderson.

van Stokkom, B. (2002). Moral emotions in restorative justice conferences: Managing shame, designing empathy. *Theoretical Criminology, 6*(3), 339–360.

Vettenburg, N., Walgrave, L., & Van Welzenis, I. (2002). Maatschappelijk kwetsbaarheid: een theorie over systemtische delinquentie foor jongeren. In P. Goris & L. Walgrave (Eds.), *Van kattenkwaad en erger* (pp. 39–76). Antwerpen/Apeldoorn: Garant.

von Hirsch, A., Roberts, J., Bottoms, A., Roach, K., & Schiff, M. (Eds.). (2003). *Restorative justice and criminal justice: Competing or reconcilable paradigms*. Oxford: Hart.

Walgrave, L. (2004). Restoration in youth justice. In M. Tonry & A. Doob (Eds.), *Youth crime and youth justice. Comparative and cross national perspectives: Vol. 31 of Crime and justice. A review of research* (pp. 543–597). Chicago: University of Chicago Press.

Walgrave, L. (2008). *Restorative justice, self-interest and responsible citizenship*. Cullompton: Willan Publishing.

Walgrave, L. (2011). Investigating the potentials of restorative justice practice. *Washington University Journal of Law and Policy, 36*, 91–139.

Walgrave, L. (2015). Restorative justice is not a panacea against all social evils. In I. Aertsen & B. Pali (Eds.), *Critical restorative justice* (in press).

Walgrave, L., & Aertsen, I. (1996). Reintegrative shaming and restorative justice: Interchangeable, complementary or different? *European Journal of Criminal Policy and Research, 4*(4), 67–85.

Walgrave, L., & Vanfraechem, I. (2012). Herstelrecht en maatschappelijke kwetsbaarheid: partners in (solving) crime? In M. De Bie, R. Roose, & M. Vandenbroeck (Eds.), *Maatschappelijk engagement: een besef van kwetsbaarheid. Liber Amicorum Nicole Vettenburg* (pp. 401–417). Gent: Academia Press.

Ward, T., Fox, K., & Garber, M. (2014). Restorative justice, offender rehabilitation and desistance. *Restorative Justice. An International Journal, 2*(1), 24–42.

Ward, T., & Maruna, S. (2007). *Rehabilitation. Beyond the risk paradigm*. London: Routledge.

Weitekamp, E. (1999). History of restorative justice. In G. Bazemore & L. Walgrave (Eds.), *Restorative justice for juveniles. Repairing the harm by youth crime* (pp. 75–102). Monsey: Criminal Justice Press.

Zehr, H. (1990). *Changing lenses. A new focus for crime and justice*. Scottsdale: Herald.

Zehr, H. (2002). *The little book of restorative justice*. Intercourse: Good Books.

Zellerer, E., & Cunneen, C. (2001). Restorative justice, indigenous justice and human rights. In G. Bazemore & M. Schiff (Eds.), *Restorative community justice. Repairing harm and transforming communities* (pp. 245–263). Cincinnati: Anderson.

Zinsstag, E., & Chapman, T. (2012). Conferencing in Northern Ireland: Implementing restorative justice at the core of the criminal justice system. In E. Zinsstag & I. Vanfraechem (Eds.), *Conferencing and restorative justice. International practices and perspectives* (pp. 173–188). Oxford: Oxford University Press.

Zinsstag, E., & Vanfraechem, I. (Eds.). (2012). *Conferencing and restorative justice. International practices and perspectives*. Oxford: Oxford University Press.

Adolescent Sexual Health and Sexuality Education

8

Margo Mullinax, Sanyukta Mathur and John Santelli

Introduction

The sexual health needs of adolescents have been a central focus of the public health community. Adolescence is a unique time of physical and psychological growth and, for many, a time when sexual and romantic exploration begins. The public health community, given their concern about the negative consequences of unprotected sex, such as teenage pregnancy, have identified risk and protective factors related to the sexual health of adolescents (Kirby et al. 2005b; Mmari and Blum 2009). Increasingly, attention is being focused on protective aspects of adolescent sexual health and recognition that adolescents have sexual rights. The agreement on a right to information and good health services related to sexual health and the understanding of sexuality as a central part of being human has become the foundational rationale for sexuality education. The main cornerstone of sexuality education is, arguably, formal SBSE. Given the high rates of primary and secondary school enrollment worldwide, SBSE is important because of the ability to reach numerous adolescents and young adults in a formal educational setting. SBSE involves teaching youth information, skills, and attitudes related to their sexual health and sexual rights. SBSE has evolved over the past decade resulting in two main curriculum types: comprehensive sexuality education programs (CSE) and abstinence-until-marriage (AUM) curriculums (Kirby 1992; Kirby et al. 1994, 2005a, 2007). Overall, SBSE has been proven effective in positively influencing sexual health-related behaviors, and researchers have identified key characteristics across effective programs. Still, introduction of sexuality education into schools is often controversial, and the public health community has worked to create enabling a supportive environment for SBSE. Beyond SBSE, there are other channels of sexuality education designed to reach vulnerable youth, who might not be associated with formal systems like the educational system.

In this chapter, we begin by defining sexual health and elaborating on the definition of sexual rights. We first explore adolescence as a time of growth and development, as well as the unique aspects of adolescent sexual health. Then, data on prevalence of adolescent sexual behaviors are provided. Next, we begin to talk about the public health approach to adolescent sexuality, including a discussion of risk and protective factors related to adolescent sexual health.

In the beginning of the chapter, we also seek to explain key definitions and documents related to adolescent sexuality. Then, we move onto the

M. Mullinax (✉)
HIV Center for Clinical and Behavioral Studies, Columbia University and New York State Psychiatric Institute, New York, USA
e-mail: mbm2174@cumc.columbia.edu

S. Mathur · J. Santelli
Department of Population and Family Health, School of Public Health, Columbia University, New York, USA

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_8

history of school-based sexuality education, types of programs, and the effects of school-based sexuality education on sexual health outcomes. Key examples and characteristics of effective programs are outlined. Finally, we briefly discuss other forms of sexuality education and steps for moving the sexuality education agenda forward.

Defining Sexual Health

Increasingly, attention has been given to the sexual health and rights of adolescents. In fact, several international agreements have been adopted in recent years that affirm the right of all adolescents to receive sexual and reproductive health information, education, and services (McGoldrick 1991).

Sexual health is closely linked to reproductive health, but has increasingly become considered an important right on its own. In 2002, the World Health Organization (WHO) revised their definition of sexual health based upon advice of key experts:

> Sexual health is a state of physical, emotional, mental, and social wellbeing… not merely the absence of disease, dysfunction, or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination, and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled (WHO 2006, p. 4).

WHO defines six key elements of sexual health (WHO/RHR 2010, p. 3).

- Sexual health is about wellbeing, not merely the absence of disease.
- Sexual health involves respect, safety and freedom from discrimination and violence.
- Sexual health depends on the fulfilment of certain human rights.
- Sexual health is relevant throughout the individual's lifespan, not only to those in the reproductive years, but also to both the young and the elderly.
- Sexual health is expressed through diverse sexualities and forms of sexual expression.
- Sexual health is critically influenced by gender norms, roles, expectations and power dynamics.

Increasingly, adolescents are being seen as a transitional developmental period, rather than just one point in time (Spear 2000). Consequently, the focus on positive approaches to sexual health is a reoccurring theme found in WHO documents. For example, in a WHO report on sexual health, it advised program managers, policy-makers, and care providers to promote the "potentially positive roles sexuality can play in people's lives" (WHO 2006). WHO pays special attention to context of sexual development in adolescence and defines this as an important point for developing lifelong sexual health. Along these lines, in WHO documents, adolescent sexual health is closely linked to social justice, human rights, and gender equity. It is understood that sexual health cannot be obtained without the protection of human rights.

Key to the WHO definition of sexual health is their definition of sexuality (WHO 2006, 4):

> …a central aspect of being human throughout life encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious and spiritual factors.

Sexual health is an essential component of general health, but it is often defined by the avoidance of adverse health outcomes such as unintended pregnancy and transmission of sexually transmitted infections (STIs), particularly human immunodeficiency virus (HIV), sexual violence, and harmful practices (e.g., female genital mutilation) (WHO/RHR 2010). A WHO publication, in 2000, compiled an overview of sexual concerns and problems that need to be addressed (PAHO/WHO 2000). Key among the issues and concerns are human rights related to sexual health, sexual pleasure, eroticism (see below), and sexual satisfaction, diseases (HIV/AIDS, STIs, RTIs), violence, female genital mutilation, sexual dysfunction, and mental health-related to sexual health. Given this, the

focus of many adolescent sexual health programs is on the prevention of risky sexual behaviors. The United States Centers for Disease Control (CDC) defines risky sexual behaviors as follows: having sexual intercourse without a condom, having intercourse without contraceptives, and having sex with multiple partners (CDC 2012a). Research shows, however, that adolescents have relatively high rates of condom and contraceptive use, although condom and contraceptive use differs from region to region.

Beyond negative health outcomes, the public health community has increasingly focused on affirmative measures of sexual health as a part of holistic sexuality models (Sandfort and Ehrhardt 2004). Affirmative sexual health models focus not only on negative outcomes, but also attend to sexual pleasure, satisfaction, and well-being. Oftentimes, affirmative models of sexual health overlap with sexual rights paradigms that argue a right to sexuality, especially for women (Correa and Petchesky 1994). There has been a call for research that better delineates sexual goals and needs, especially those of women (Higgins and Hirsch 2008). Affirmative models of sexuality have been embraced by many feminist scholars and labeled "sex-positive" or the pro-sexuality movement. Sex-positive articles and papers emphasize the need for consensual and safe practices while opposing legal and moral constraints on sexuality. Previous research tended to ignore sexual goals and sexual pleasure, which are important components of sexual health decision-making (Higgins and Hirsch 2008). Research shows that sexual pleasure is a principal motivation for sexual behavior (Pinkerton et al. 2003; Rye and Meaney 2007) and that relationship satisfaction and quality of sexual experience are linked (Byers 2005; Sprecher and Cate 2004). The importance of studying sexuality within an affirmative framework is further strengthened by evidence that masturbation and sexual satisfaction are associated with more traditional measures of sexual health (e.g., prevention of STIs and unwanted pregnancies) (Diamond and Savin-Williams 2009; Higgins et al. 2011). At a rapidly increasing rate, researchers are linking measures of sexual satisfaction to clinical interventions and research (McClelland 2011). More importantly, a few public health practitioners have given increased recognition to understanding quality of sexual experiences as a part of wellness and as important in its own right (Byers 2005; Higgins et al. 2011).

The definition of human rights has been expanded to include sexual health components and is elaborated as sexual rights. In 2002, the WHO declaration of sexual rights states:

> Sexual rights embrace human rights that are already recognized in national laws, international human rights documents and other consensus statements. They include the right of all persons, free of coercion, discrimination, and violence, too:
> - the highest attainable standard of sexual health, including access to sexual and reproductive health care services;
> - seek, receive, and impart information related to sexuality;
> - sexuality education;
> - respect for bodily integrity;
> - choose their partner;
> - decide to be sexually active or not;
> - consensual sexual relations;
> - consensual marriage; and
> - decide whether or not, and when, to have children; and pursue a satisfying, safe and pleasurable sexual life.
>
> The responsible exercise of human rights requires that all persons respect the rights of others (WHO 2006, p. 5).

Other organizations, such as the International Planned Parenthood Foundation (IPPF) and the World Association for Sexual Health (WAS), have also created charters and declarations related to sexual rights. A large part of all of these documents is the recognition of the right to information and knowledge related to sexual health. The above definition obviously was created with adults in mind, and few documents on sexual rights focus on the rights of adolescents. The right of the child to sexual health information, however, has been acknowledged by the United Nations Convention on the Rights of the Child (Parker et al. 2009). The call for sexuality education emerged in the twentieth century from the perspective of human rights including sexual rights and roles. The understanding of sexuality as a central part of being human and the right to sexuality information is the foundational rationale for sexuality education (Parker et al. 2009).

Sexual Health of Adolescents

Puberty

The onset of adolescence is typically marked by puberty (i.e., the emergence of secondary and sexual characteristics) (Haworth et al. 2012). Puberty characteristics are typically defined as follows:

- For males: increase in penis and testicular size, minor voice changes, development of sperm (i.e., spermarche), public, axillary, and facial hair growth, and growth spurts (Haworth et al. 2012).
- For females: breast development (i.e., thelarche), pubic (i.e., pubarche) and axillary hair growth, widening of hips, and weight gains. Toward the end of puberty, women begin menstruation (i.e., menache) (Haworth et al. 2012).

These rapid physical changes are triggered by the hypothalamus, which increases secretions that cause the pituitary gland to release large amounts of gonadotropin hormones (Yarber et al. 2013). Gonadotropins are chemically identical in boys and girls. In girls, gonadotropins act on the ovaries to produce more estrogen, and in boys, they cause the testes to increase testosterone production. While puberty is the stage in which people become capable of reproduction, it is important to note that sexuality is something that can be observed in infancy and childhood (Yarber et al. 2013).

Puberty is also a point of fundamental restructuring of cognitive, information-processing systems (Steinberg 2005). Brain growth, in general, occurs in adolescents as youth become more capable of abstract and metacognitive reasoning (Dixon-Mueller 2011). The brain development that occurs during adolescence is focused on particular regions of the brain. These regions are key to regulation of behavior and emotions and to the evaluations of risk and reward (Steinberg 2005). During adolescence, significant growth and change occurs to parts of the brain associated with planning, metacognition, self-evaluation and regulation, and the coordination of affect and cognition. As adolescents mature in age, they develop more cognitive and emotional control to make goal-directed actions (Yurgelun-Todd and Killgore 2006). Around the age of 15, "sensation-seeking" drives may intensify while the development of the parts of the brain linked to judgments and impulse control continues to mature well into early adulthood (Dixon-Mueller 2011). We know that as age increases, impulsive behavior decreases (Casey et al. 2005; Steinberg 2005). Research is beginning to suggest that the development of regulatory competence may lag behind changes in arousal and motivation during puberty (Steinberg 2005). In other words, biological maturity may precede physiological maturity. The study of cognitive development in adolescents is increasingly recognizing the real-world context of cognition in which adolescent thinking is a function of social, emotional, and cognitive processes (Steinberg 2005). For example, there is substantial evidence that adolescents engage in risky behaviors despite knowing the risks involved, which suggests that adolescent behaviors are influences by social context, as well as consideration of consequences.

Typically, the normal range for puberty is 9–15 years old, with slight differences by sex (Haworth et al. 2012). For example, the mean age of beginning growth for girls is 9 years of age, but is 11 for boys (Neinstein 2008). However, research indicates changing trends in puberty, particularly among girls (Kaplowitz et al. 2001). Figure 8.1 shows the decline in age of puberty across several countries. Compared to 40 years ago, girls now experience first menarche, on average, a few months earlier and develop breasts one or two years earlier (Steingraber 2007). Precocious puberty is defined, as the appearance of the physical and hormonal signs of puberty at an earlier age than is considered typical. These trends are more accelerated among African American females (Sørensen et al. 2012). Almost, no studies have attempted to determine trends of timing of boys' puberty; subsequently, firm conclusions are difficult to establish (Walvoord 2010). While trends in first menarche have begun to level off since the 1990s, new data from the USA indicated recent decrease in the age of breast growth (Parent et al. 2003). One hypothesis for this earlier onset is increased nutrition and,

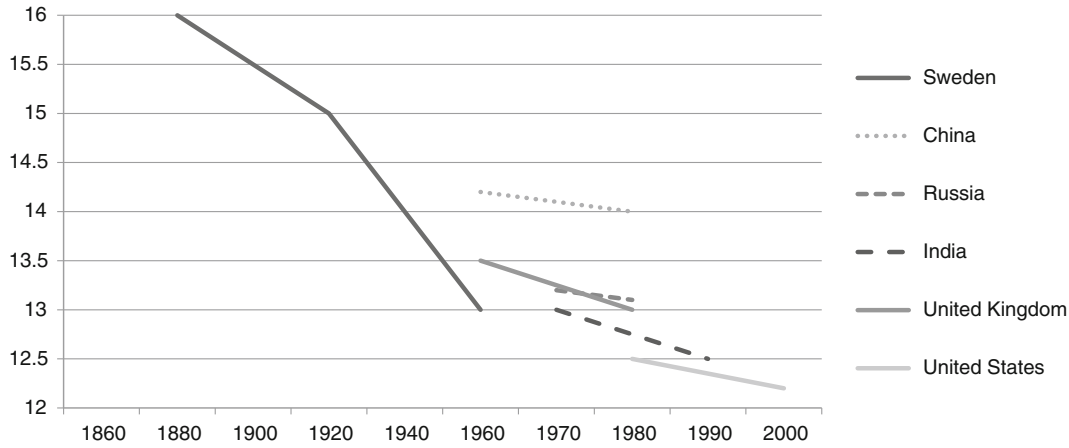


Fig. 8.1 Secular trends in age at menarche. Graph represents rough trends and not exact data points

specifically, increased body mass index (Jeffery et al. 2012; Kaplowitz et al. 2001). There has also been growing concern about the possible effect of endocrine-disrupting chemicals (EDCs) (i.e., compounds that alter or disrupt the hormone processes) on the timing of puberty (Diamanti-Kandarakis et al. 2009; Walvoord 2010). There are numerous types of EDCs: chemicals found in pesticides, fungicides, insecticides, and industrial chemicals such as lead, mercury, and PCBs (Colborn et al. 1993). Chronic stress and acute stress, often related to home life, have also been shown to be linked to earlier menses (Belsky et al. 1991; Ellis and Garber 2000; Tremblay and Frigon 2005). Recent research has questioned if these trends are the result of variability between decades rather than a linear decrease (Walvoord 2010; Yarber et al. 2013). Interestingly, even though there have been increases in nutrition and well-being of adolescents in South Africa, puberty initiation for urban black South African adolescents has remained stable over the last 10–15 years (Jones et al. 2009). That said the age of first menarche among this population has been shown to be starting earlier. Overall, age of menarche seems to vary depending on interrelated factors such as economic development over nineteenth and twentieth centuries, socioeconomic status, heredity, and nutrition (Neinstein 2008).

Gender Socialization and Interpersonal Relationships

Gender socialization, which begins at birth, takes on new meaning for girls and boys during puberty as they become more conscious of their bodies (Dixon-Mueller 2011). Some youth may exhibit gender-nonconforming identities and behaviors, referred to a transgender person (Grossman and D'augelli 2006). Transgender youth are a vulnerable population, as they often experience more negative health outcomes and may be invisible in health systems. For example, substance abuse is higher among gay, lesbian, bisexual, transgender, and questioning youth (Jordan 2000). Transgender youth report, in high numbers, being verbally and physically harassed in US schools (Russell et al. 2011). Furthermore, transgender-related school victimization is strongly linked to young adult mental health issues, like elevated levels of depression, and risk for STDs and HIV. Due in part to the stigma transgender youth face, many transgender youth report trouble finding housing and jobs and may turn to high-risk behaviors like sex work (Garofalo et al. 2006). Transgender youth report a lack of access to healthcare services, as well.

Adolescence is also a time of new romantic feeling and/or sexual attractions. Adolescence

may be a time of sexual self-exploration and identify formation (Neinstein 2008). Most teens say they have had some level of romantic involvement with a peer (Neinstein 2008). Romantic relationships are a part of both intimacy and identity development for adolescents, and relationships during adolescence may influence subsequent relationships (Bouchey and Furman 2003). Conceptualization and duration of romantic relationships change from adolescence to adulthood. For most adolescents, relationships may be short term and often notions of romance are idolized (Montgomery and Sorell 1998). The change in definitions of relationships is evidenced by the fact that many early adolescents report being in love even though they have rarely spoken to the object of their desire and have no relationship with the person. Older adolescents, in contrast, report falling in love at a later age than would be reported if they held to the earlier belief of first love. During adolescence, a large part of dating may be socializing with a partner and with peers. Most research on dating and romantic attachment, however, has focused on middle-class heterosexuals in North America and should not be considered representative of all adolescent trajectories (Bouchey and Furman 2003).

During adolescence, sexual orientation may become more of a salient issue. Many adolescents experience feelings of attraction for their peers of the same gender, and for some, this continues to grow into romantic attraction (Chandra et al. 2011). Adolescents that identify as being gay, lesbian, or bisexual often face increased stigma (Rotheram-Borus et al. 1994). Same-gender adolescent sexual experiences do not necessarily signal a lesbian, gay, or bisexual identity (Blumenfeld and Raymond 1988; Savin-Williams 1989). Conversely, adolescents may identify as lesbian, gay, or bisexual without having sexual experiences (Ryan and Futterman 1998; Savin-Williams 1989). Overall, there is a diversity of experiences related to adolescent sexuality. Increasingly, youth are developing expanding lists of sexual identities beyond notion of gay, bisexual, and heterosexual that include challenges to notions of gender identity dichotomy and focus on partner characteristics (Savin-Williams 2001). Research also shows that sexual identity may change over time and within different contexts (Baldwin et al. 2014).

Sexual Behaviors in Adolescents

Most young people begin to explore their sexuality during adolescence. This exploration may take many forms. It varies from masturbation, to oral sex, to vaginal and anal sexual activity. The majority of adolescents report sexual fantasies (Crockett et al. 2003). Hormonal changes during puberty cause a dramatic increase in sexual drive and sexual interests. Adolescents may explore these interests alone or with a partner. However, this does not necessarily translate into behaviors. Not all adolescents engage in sexual behaviors, and the age of initiation varies, but as age increases, so does the number of adolescents who report some form of sexual activity. In general, establishing rates of adolescent sexual activity is hard, given underreporting of behaviors, sometimes associated with guilt, and the constraints of doing research with minors. The majority of documentation of sexual behaviors among adolescents is from the USA and Western Europe. Internationally, the picture of initiation of sexual behaviors is similar. Many countries collect a Demographic and Health Surveys (DHS), which can be used to assess sexual behaviors. This data show that around the world sexual activity begins for most men and women about the same time (15–19 years) (Wellings et al. 2006). However, there are some regional and gender variations, and in developing nations, girls, especially, tend to initiate sexual behaviors at younger ages. Over the past few decades, premarital sexual activity within the bounds of a committed, loving partner has become increasingly accepted (Martin et al. 2001). Along similar lines, cohabitation has become normalized in many parts of the world and is seen, by many, as a given stage in relationship development (Roseneil 2006). The age of marriage has been delayed among many cohorts; however, there is a large range of diversity with regard to marital trajectories (Bramlett and Mosher 2002). Similar to the USA, many other countries show

trends toward a delay in marriage and increase in acceptability of premarital sex (Bearinger et al. 2007). During the past few decades, age at marriage has risen most rapidly in Asia, the Middle East, and some parts of Latin America (Blum and Nelson-Mmari 2004). Changes, however, are less striking in sub-Saharan Africa, where early marriage is still particularly prevalent and may be recourse for girls orphaned by HIV (Blum and Nelson-Mmari 2004).

A Range of Sexual Behaviors

We often think of sex as only sexual intercourse; however, there is a wide range of sexual behaviors (Yarber et al. 2013). Autoeroticism consists of sexual activities that involve only oneself (e.g., fantasy and masturbation). Sexual behaviors with others may range from touching, kissing, oral-genital sex, sexual intercourse, anal eroticism (i.e., sexual activities involving the anus), and anal intercourse. These behaviors are commonly practiced by opposite-sex and same-sex couples (Lindberg et al. 2008). Oftentimes, sexual behaviors are divided into non-coital and coital (i.e., vaginal–penile intercourse) behaviors. Individuals and couples may also use erotic aids, such as sexy toys (e.g., vibrators and dildos) during sexual intercourse (Yarber et al. 2013).

Examples of common sexual terms:

- Mutual masturbation—masturbation together with a partner
- Tribidism—pressing of the bodies with genital thrusting and rubbing
- Fellatio—men's penis is take into partner's mouth
- Cunnilingus—women's genitals are stimulated by partner's tongue and mouth
- Analingus—licking of the anal region
- Vaginal–penile intercourse/penile–vaginal intercourse—insertion of the penis into the vagina

While sexual behaviors are often reported in isolation, it is important to recognize that any given sexual encounter may include complex combinations of genital and non-genital contact (Hensel et al. 2008). Additionally, the sequence of behaviors may vary per encounter and for different adolescents.

Kissing

Most teens aged 13–14 report that kissing is normal for couples in their age, while other forms of sexual intimacy, including deep kissing (i.e., a kiss involving the tongue), are not the norm (Neinstein 2008). By ages 15 and 16, teens report most couples typically kiss and deep kiss.

Masturbation

Rates of masturbation among adolescents are hard to establish, and masturbation is considered to be a highly underreported given high reports of associated guilt (Kaestle and Allen 2011). Men are much more likely to report ever masturbating and more frequent masturbation (Pinkerton et al. 2003). Among males in the USA, at age 14 years, 62.6 % of males reported at least one prior occurrence, whereas 80 % of 17-year-old males reported ever having masturbated and females of 43.3 % at age 14 report ever masturbating and 58 % at age 17 (Robbins et al. 2011). Very few studies have explored non-penetrative sexual behaviors internationally. A study of college students in China showed that 30 % of males and 25.8 % reported engaging in kissing and 21.9 and 15.3 %, respectively, reported masturbation (Zhang et al. 2002). One study from Uganda in 1999 found that among 464 Ugandans aged 10–24, 23 % of males and 29 % of females report petting. Very few reported masturbation (7 % males, 4 % females) (Ndyanabangi et al. 2003). A nationally represented survey from China, completed in 2000, found 13 % of women and 35 % of men reported

masturbation in the preceding year, with the prevalence for people in their 20s the highest and close to European and US levels (Das et al. 2009). Still, masturbation is a normal part of sexual development and increases with age. Adolescents may also engage in mutual masturbation (i.e., genital sexuality activity with a partner) (Feldmann and Middleman 2002).

Oral Sex

Almost everywhere, sexual activity begins in the later teenage years, aged 15–19 (Wellings et al. 2006). Females generally report higher rates than males of giving oral sex, although rates of recent oral sex (both given and received) are low among adolescents (4.3 % for female partners of young men and 6.6 % for male partners of young women) (Fortenberry et al. 2010). Studies of US adolescents have found that 20–55 % have engaged in oral sex (Leichliter et al. 2007). The National Survey of Family Growth (NSFG) found that half of female adolescents and two-thirds of male adolescents had participated in heterosexual oral sex (Chandra et al. 2005). Initiation of oral sex is often close to initiation of vaginal intercourse. Within six months of an adolescent's first oral sexual encounter, 82 % of adolescents in the NSFG also engaged in vaginal sex (Lindberg et al. 2008).

Penile–Vaginal Intercourse

Overwhelmingly, trends show people in the 2nd half of the twentieth-century USA were engaging in premarital intercourse more so than in previous generations. By their 19th birthday, seven in ten teenagers of both sexes have had heterosexual vaginal intercourse (Abma et al. 2004). Over 90 % of married men and about 85 % of married women report engaging in sexual intercourse before their wedding (Chandra 2011). Globally, the proportion of women who report early intercourse, before age 15, has decreased significantly since the 1970s, as has rates of child marriage (Bearinger et al. 2007). While there has been a decrease in early marriage that reduced the number of girls sexually experiences under the age of 15, sexual debut of girls under the age of 14 is still common in some developing nations (Dixon-Mueller 2011). For example, one in five women 20 to 24 years of age in sub-Saharan African countries reported first intercourse before the age of 15 (Dixon-Mueller 2011). In the Caribbean, about 40 % of male and 9 % of female students aged 10–18 surveyed in the DHS study said they were 12 years or younger when they first had sexual intercourse (Dixon-Mueller 2011). The 2006–2010 National Survey of Family Growth (NSFG), US-based data, reported few women aged 15–24 have had sex (Finer and Philbin 2013). This is especially true for younger adolescents, with less than 1 % of 11-year-old girls, about 1 % of 12-year-old girls, 2 % of 13-year-old girls, and 5 % of 14-year-old girls having had penile–vaginal intercourse. Among youth 12 and younger, if sexual activity occurs, it is often non-consensual (Finer and Philbin 2013). While these proportions increase with age, in the USA, the overall number of teens having sex remains low at older ages: 19 % of 15-year-old females and 32 % of 16-year-old females have had sex. Figures for young males are similarly low, although slightly higher than their female counterparts (2 % at 12, 5 % at 13, 10 % at 14, 22 % at 15, and 35 % at 16 have had sex). The majority of data on sexual behaviors from developing countries have focused on Africa and are tied to HIV prevention data collection mechanisms (Wellings et al. 2006). For youth aged 15–19, in Kenya, 33 % of females and 53 % of males report sexual experiences. In Romania, 22 % of females and 45 % of males report sexual experience (Bearinger et al. 2007). For women, the median age of first intercourse is lower in regions where early marriage is the norm (e.g., South Asia, Central, West, and East Africa) and higher in Latin America and some countries in the Middle East and Southeast Asia (Wellings et al. 2006). For men, sexual initiation is not related to marriage and trends of early sexual initiation have remained stable or increased (in several Latin America and African countries) (Wellings et al. 2006).

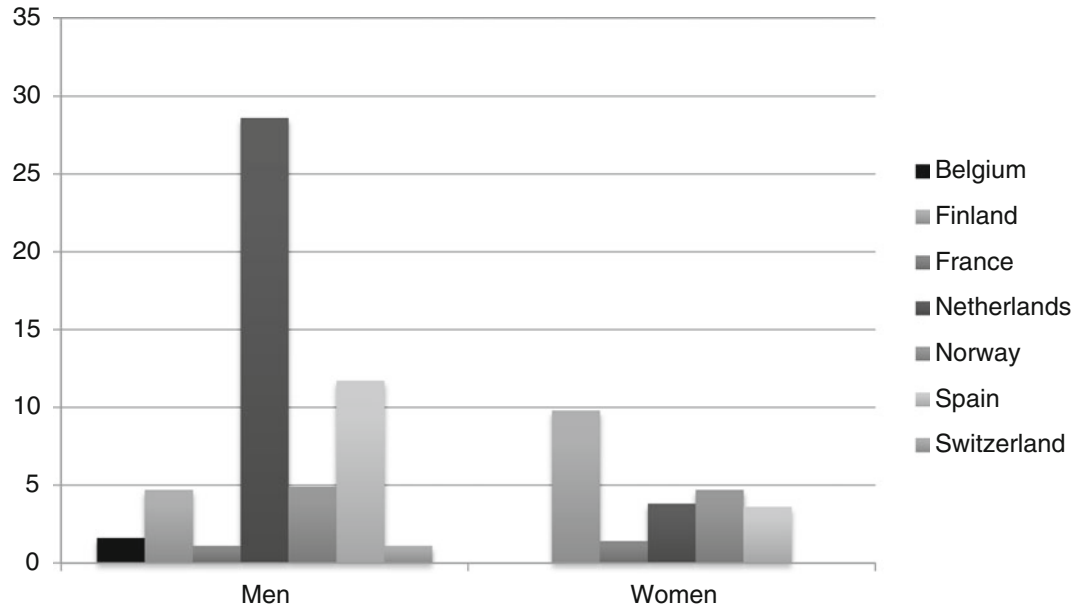


Fig. 8.2 Proportion of lifetime homosexual behavior among 18–19-year-olds in selected countries. *Source* Sandfort (1998). Homosexual and bisexual behavior in European countries

Anal Intercourse

Rates of lifetime anal intercourse for youth 14–17 are generally low (overall, 4.7 % for penile–anal intercourse and 5.5 % for vaginal–anal) (Fortenberry et al. 2010). The NSFG found that 1 in 10 female and male adolescents 15–19 years old had ever engaged in heterosexual anal sex (Chandra et al. 2005). In Great Britain, 25 % of 16–44-year-olds reported lifetime anal sex (Johnson et al. 2001). Rates of anal intercourse among adolescents are difficult to confirm. Almost exclusively, these rates come from the USA and UK.

Same-Sex Behaviors

There are even fewer statistic related to same-sex behaviors among adolescents. Based on a US survey of 13,570 adolescents, only 117 adolescents reported exclusively same-sex relationships in the past 18 months (1.2 % of the same who reported a romantic relationship) (Halpern et al. 2004). Another US survey of 4000 high school students reported at least one same-sex experience in their lifetime (Halpern et al. 2004). Students who report same-sex-only partners have been found to be at a higher risk for substance abuse (Udry and Chantala 2002). These reports did not specify the types of experiences. Given the ways in which sexual identity is socially and culturally constructive, comparative research on same-sex behaviors internationally is difficult (Sandfort 1998). Additionally, restrictive policies hinder even conducting research on these topics in many settings (Sandfort 1998). As a result, reports of same-sex behaviors vary greatly from country to country, as shown in Fig. 8.2.

Sexual Health Outcomes

Adolescent sexual health has been and continues to be a focus of public health. The public health community is interested in tracking sexual behaviors of adolescents mainly because of related health outcomes—unintended pregnancy and sexually transmitted infections (STIs). An unintended pregnancy is either a mistimed or unwanted pregnancy (Santelli et al. 2003). If a woman did not want to become pregnant at the

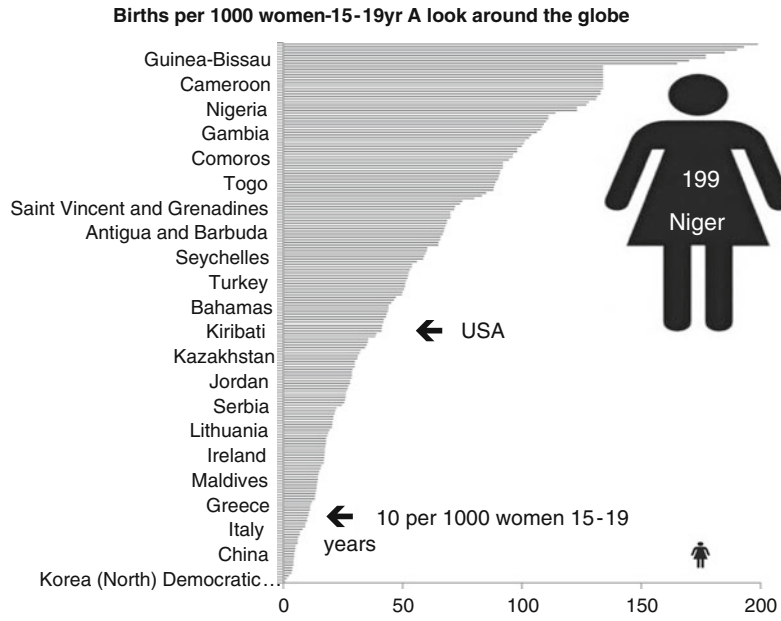


Fig. 8.3 Teen birthrates from around the world. *Source* Annual Review of Public Health (Santelli)/ World Bank

time of conception, but did want to become pregnant in the future, the pregnancy is considered mistimed. If a woman did not want to become pregnant at conception or at any time in the future, the pregnancy is considered unwanted (Zolna and Lindberg 2012). Among adolescents, most unintended pregnancies are mistimed. Of course, for many women who get pregnant when not planning on doing so at the time but in the future, the pregnancy might just be considered a happy surprise (Higgins et al. 2008). Even though the median age at first sex is relatively consistent worldwide, there are wide variations in teen fertility rates. Figure 8.3 shows how teen pregnancy rates vary worldwide.

Between 2001 and 2006 in the USA, unintended pregnancies increased from 79 to 83 % among women aged 18 and 19 years and from 59 to 64 % among women aged 20–24 years (CDC 2012b). The age of childbearing has also shifted to older ages, with maternal age positively correlated with educational levels (Hayford 2009). The well-publicized delay in childbearing has been occurring almost exclusively among women with more education (Isen and Stevenson 2010). Between 2008 and 2009, the birthrates for women aged 20–24 fell seven percent (103.0 births per 1000 women in 2008 to 96.3 in 2009), the largest percentage decline for this age group since 1973 (Hamilton et al. 2009). Around the world, teen fertility has dropped dramatically during the second half of the twentieth century, although Fig. 8.3 demonstrates how rates continue to vary worldwide. Still, the public health community continues to address adolescent sexual health with a focus on preventing pregnancy and sexually transmitted infections (STIs).

Risk and Protective Factors Related to Sexual Health

It is important to note that several factors contribute to pregnancy and STI rates. Research has highlighted certain factors that increase the chance of positive health outcomes and behaviors, called protective factors, and factors that tend to lead to more negative health outcomes and behaviors, referred to as risk factors (Kirby 2001). Protective and risk factors include individual-level factors, peer and partner-level factors, family and household-level factors, school and community-level factors, and larger organization, environmental, and structure factors (Mmari and Blum 2009). Adolescent health issues often have the similar risk and protective

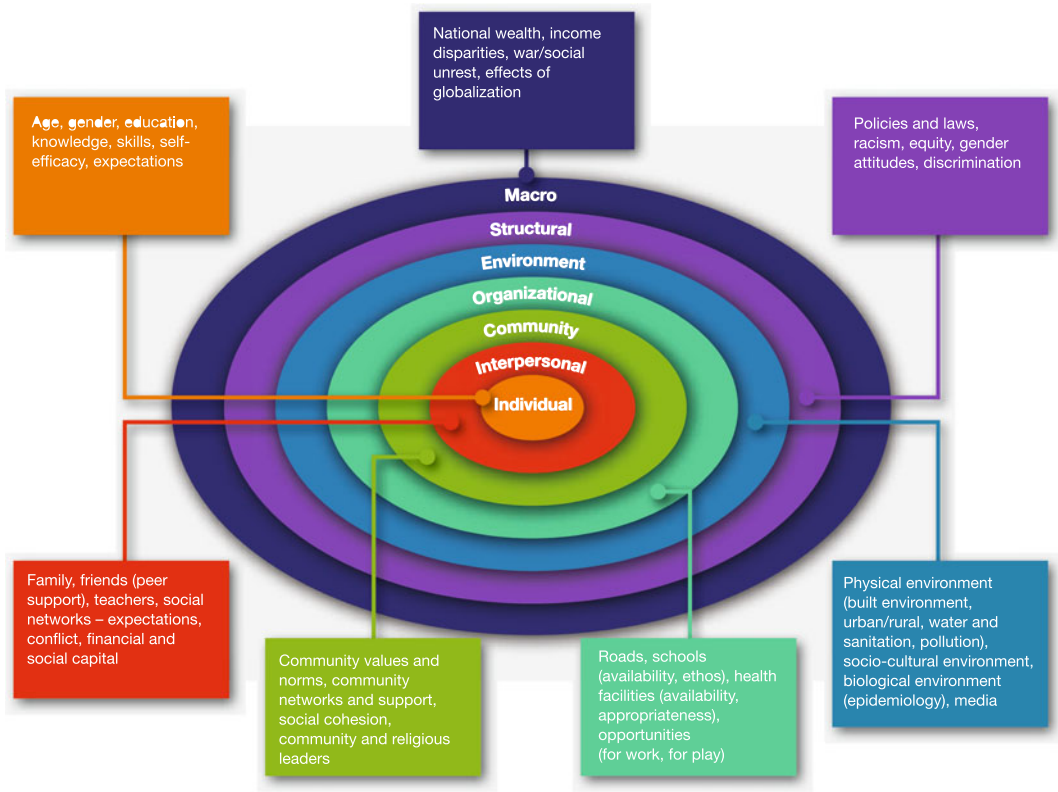
factors (World Health Organization 2014). For example, parents can play an important role in adolescent's health, both positive and negative. Risk and protective factors do not occur in isolation (Mmari and Blum 2009). Rather, proximal factors acting directly to cause the health outcome in question and distal factors, on the other hand, eventually lead to disease (WHO 2013). For example, poverty and schooling policies may be distal factors that eventually lead to early initiation of sexual intercourse, which in turn is a risk factor for negative sexual health outcomes.

Building on existing social ecological models (Sweat and Denison 1995), the WHO has identified key determinants of adolescent health and development (World Health Organization 2014). The WHO framework identifies seven broad groupings of determinants–individual, interpersonal, community, organizational, environmental, structural, and macro.

FIGURE FROM WHO 2014 document on the determinants of adolescent health and development.

Individual factors play a role in influencing adolescent and teen's sexual behaviors. Individual factors may include things such as gender, age, knowledge, goal, self-efficacy, and expectations. For example, girls are biologically more likely to contract a sexually transmitted infection (STI) than boys (Mmari and Blum 2009). Additionally, the use of alcohol and drugs, younger age at first sex, having a higher number of sexual partners, and not using contraception at first sex are related to negative sexual health outcomes. Personality and attitude traits influence adolescent sexual and reproductive health (Kirby et al. 2005). For instance, research suggests a large correlation of education with pregnancy rates—higher education is negatively correlated with pregnancy rates (Lleras-Muney 2005; Zolna and Lindberg 2012).

Interpersonal or relationship factors are also very important to consider. WHO documents define interpersonal factors such as family, friends (peer support), teachers, social networks, financial, and social capital (World Health Organization



2014). Connection to family influences adolescent sexual and reproductive health (Kirby et al. 2005b). For example, living with both parents and having father present in the household are both protective factors associated with condom use. Teens whose parents are more educated are less likely to become pregnant than those whose parents have less education (Kirby et al. 2005b). Additionally, teens that feel connected to and supported by their parents and have parental monitoring are less likely to initiate sex early. In contrast, family abuse, family alcohol and drug abuse, and family members engaging in risk-taking behaviors all predict teens being more likely to have unprotected sex and become pregnant (Mmari and Blum 2009). In a survey of 10 international studies examining the relationship between adolescent perceptions of their peers' sexual behaviors and their own sexual experience, all 10 studies reported a positive relationship between participant's peers' sexual behaviors and their own sexual experience (Mmari and Blum 2009). This could be related to peer pressure, or it might be people seeking friends with similar attitudes and experiences. Additionally, adolescents might misperceive their friends' sexual behaviors. Components of romantic relationships can also be protective or harmful. In fact, partner characteristics have been found to be much more influential for reported condom use than peer characteristics (Mmari and Blum 2009). For example, when the romantic partner is three years or older, adolescents and teens are more likely to have sex (Kirby et al. 2005b). Adolescents who talk to sexual partners about HIV or condoms are also more likely to use condoms, too (Mmari and Blum 2009).

More distal, community-level factors also influence adolescent sexual and reproductive health. Community factors include values and norms, community network and support, social cohesion, community, and religious leaders (World Health Organization 2014). Few studies have studied school- and community-level factors, and therefore, there are no conclusive results on how these factors have premarital sexual activity (Mmari and Blum 2009).

Organization-level determinants are related to roads, schools, health facilities, and opportunities for work or pay. Involvement in paid work, for example, influences adolescent sexual and reproductive health (Kirby et al. 2005b). School is a key protective factor, with things like being enrolled in school, having high educational aspirations, and having a high grade point average all increasing the likelihood that an adolescent is not engaging in premarital sex (Mmari and Blum 2009).

An evaluation of research conducted in the USA found environmental factors to have the greatest influence on teenagers' sexual behaviors (Kirby et al. 2005b). Environmental factors include things such as the physical environment (built environment, urban/rural, water, sanitation, and pollution), sociocultural environment, biological environment, and media.

Outside of the local community context, adolescent sexual and reproductive health is also influenced by structural systems (e.g., policies and laws, racism, equity, gender, attitudes, and discrimination) and macro-level factors (e.g., national wealth, income disparities, war/social unrest, and effects of globalization) that influence adolescent health and well-being. For instance, structural elements, like laws regarding age of sexual consent, can protect or negatively affect young people's social and sexual transition, whereas overarching systems of gender inequality that deny young women access to social and economic resources are likely to be a key distal factor influencing adolescent health.

Again, these risk and protective factors should not be considered independently, but multidimensional and multidirectional—often intersecting to affect health outcomes and behaviors. For example, adolescents of low socioeconomic status are at a greater risk for substance abuse (Hanson and Chen 2007), earlier initiation of sexual intercourse, and adolescent pregnancy and childbirth (Santelli et al. 2000). Socioeconomic status appears to have a stronger effect on sexual and reproductive health outcomes among racial minority groups (Dehlendorf et al. 2010; Hayward et al. 1992).

In the USA, compared to non-Hispanic white teens, African American and Hispanic teens are more likely to have sex at an earlier age, to have more sexual partners, to become pregnancy, and to contract an STI. However, it is important to understand that results based on race are largely attributed to other less easily measured distal variables not as easily measured (Winker 2004). For example, race tends to be used as a proxy for socioeconomic status, education level, and unmeasured confounders such as cultural, social, and environmental influences. Some scholars argue that class, rather than race, has a stronger effect on health outcomes (Isaacs and Schroeder 2004). Racial disparities often become eliminated in studies when adjusted for class variables (Kawachi et al. 2005). This is not to say that race and class cannot act independently and interactively to produce health disparities (Kawachi et al. 2005).

School-Based Sexual Education (SBSE)

Sexuality education is defined as an age-appropriate, culturally relevant approach to teaching about sex and relationships by providing scientifically accurate, realistic, and non-judgmental information (UNESCO 2009). Sexuality education provides opportunities to explore one's own values and attitudes and to build decision-making, communication, and risk reduction skills about many aspects of sexuality.

Among all the sectors that play a role in adolescents' health, education is key, and schools are place where adolescents can access important health services and skills-based information (World Health Organization 2014). Youth learn about sexuality informally, through their parents and peers, and formal processes, such as sexual health education and health service programs. Sexual socialization is the process through which an individual acquired understanding of ideas, beliefs, values, and codes of conduct related to sexuality (Shtarkshall et al. 2007). Sexual socialization begins when we are babies and extends throughout adulthood. From a young age, children are exposed to messages about modesty and nudity. For example, children learn about proper conduct and sexuality attitudes through their parents' response to childhood masturbation and parental displays of affection between each other. Oftentimes, these messages and instructions are gender specific. Sexual socialization also takes place outside of the home. This may include messages from religious institutions, community norms, and even mass media. In this way, youth learn about sexuality very informally, and oftentimes, these issues remain unaddressed in a formal environment. The main cornerstone of sexuality education is, arguably, formal SBSE (UNESCO 2009; Ross et al. 2006). SBSE involves teaching youth information, skills, and attitudes related to their sexual health and sexual rights. SBSE is important because of the ability to reach numerous adolescents and young adults in a formal curriculum. Worldwide in 2012, 91 % of primary school age children were enrolled in school (although average enrollment in West and Central Africa is much lower at 73 %) (UNICEF 2012). Enrollment of older youth, while lower percentages, is also high; based on the 2012 UNICEF numbers, 83 % of lower secondary school age children are in school worldwide. Additionally, SBSE reaches large numbers of young people before they become sexually active. SBSE might occur in school as part of the formal curriculum, or it might be outside of the formal curriculum and administered as an optional class led by an invited visitor.

History of SBSE

In the early 1900s, there was concern about youth engaging in premarital sex and high rates of venereal disease (VD), and in response, schools began VD education (Kirby 1992; Kirby et al. 1994). In the 1970s, there was a shift in focus related to expanded knowledge about rates

of unintended pregnancy and the associated consequences. Then, in the 1980s, as acquired immunodeficiency syndrome (AIDS) became a major concern, the response of schools dramatically increased and expanded, including providing condoms in some schools.

In the early 1990s, Kirby (1992) described "four generations" of in-school sexual education curriculum that have been developed for adolescents:

1. Focused on increasing knowledge and emphasize risk and consequences of pregnancy.
2. Placed emphasis on values clarification and skill development, especially decision-making and communication skills.
3. Focus on abstinence-only programs in the USA.
4. Focus on HIV/AIDS education.

Kirby (1992) described each generation and related evaluations. The first generation of sexual education programs was based on the premise that if youth had expanded knowledge about sexual activity and the consequences of sexual behaviors (e.g., pregnancy and childbearing), teenagers would rationally choose to delay sexual initiation and avoid unprotected intercourse. While most of these programs were not evaluated, we know now that increased knowledge does not necessarily translate into behavioral changes. Gradually, in addition to a focus on information, the second generation of sex education focused on "I" messages related to values clarification and effective communication skills to improve the communication of values. Kirby shows that sexuality education programs, emphasizing general promotion of values clarification with no specific content related to unprotected sex, had little effect on sexual health outcomes. In the 1970s and 1980s, sexual education courses focused on increasing acceptance of others sexual practices and specific clarification of student's values. This version resulted in an increase in student's clarity but made little difference in sexual or contraceptive use behavior. While most evaluations were inconclusive, there was little impact on the high rate of teenage pregnancy.

The next generation of sexual education curriculum took a totally different approach to the first two generations of sexual curriculum. Some were concerned that promoting sexual abstinence until marriage, and discussing contraception with youth, was sending conflicting messages. During this period, sexual curricular developers began to emphasize AUM or "abstinence-only." More recently, sexuality curriculums, according to Kirby (1992), were focused on HIV/AIDS prevention. According to Kirby, HIV/AIDS programs tended to be developed independently from previous work and therefore did not incorporate lessons learned. The traditional focus has been on prevention of HIV among young people through a discussion of individual-level HIV-risk factors. For example, programs aim to increase young people's knowledge of HIV/AIDS, promote delay in sexual debut, encourage the use of condoms with non-marital partners, and reduce the number of sexual partners including concurrent partnerships.

Current Programs

Moving forward from these programs, curriculums are now attempting to use previous evaluation studies to incorporate the successes and failures of past programs. Increasingly, the focus on SBSE is on theoretical approaches and evidence-based practices. SBSE, in general, has come under numerous criticisms over the past decade. The focus on individual-level behaviors has been criticized as inadequate (Ross et al. 2006; Speizer et al. 2003). First of all, there has been a call for more attention to gender and the ways education can promote gendered notions of

sexuality. For example, a focus on the dangers and risks associated with adolescent sexuality has excluded a discourse on desire and pleasure, especially related to young women's sexuality (Fine and McClelland 2006). In addition to issues of gender, many have criticized SBSE for excluding racial minorities and ignoring the interplay of gender, race, class, and sexuality on the sexual lives of adolescents (Bay-Cheng 2003). Finally, SBSE curriculums traditionally promote definitions of normal sex as heterosexual and coital (Bay-Cheng 2003).

Types and Focus of SBHE Curriculums

Current SBSE curriculums have been divided into two main types: comprehensive sexuality education programs (CSE) and abstinence-until-marriage (AUM) curriculums. CSE programs focus on a wide range of sexual behaviors, including risk reduction methods like condom use, whereas AUM programs focus primarily on sexual abstinence outside of marriage and fidelity within marriage (Santelli et al. 2006; Underhill et al. 2007; Chin et al. 2012; Kirby 2008). AUM has been particularly popular among social and religious conservatives, but abstinence is also recognized as a behavioral prevention strategy by the United States Public Health Service (Healthy People 2010). Based on international agreements and principles of CSE, United Nations Population Fund (UNFPA) has outlined 9 components that should be included in all CSE programs:

1. Basis in the core universal values of human rights.
2. Integrated focus on gender.
3. Thorough and scientifically accurate information.
4. A safe and healthy learning environment.
5. Linking to sexual and reproductive health services and other initiative that address gender, equity, empowerment, and access to education and social or economic assets for young people.
6. Participatory teaching methods for personalization of information and strengthened skills in communication, decision-making, and critical thinking (UNFPA 2014, 10–15).

Additionally, a third category of SBSE expands CSE to focus on a wider perspective of sexual growth and development (Parker et al. 2009). These programs are often referred to as "holistic sexuality education." While comprehensive programs may also be considered holistic, this third type of program is different in the underlying philosophy. Instead of focusing on problem solving related to a prevention orientation, holistic sexuality education programs often have the underlying philosophy of sexuality as a source of personal enrichment. WHO has outlined 7 key principles on which holistic sexuality education is based:

1. Sexuality education is age-appropriate with regard to the young person's level of development and understanding, and culturally and socially responsive and gender-responsive. It corresponds to the reality of young people's lives.
2. Sexuality education is based on a (sexual and reproductive) human rights approach.
3. Sexuality education is based on a holistic concept of well-being, which includes health.
4. Sexuality education is firmly based on gender equality, self-determination, and the acceptance of diversity.
5. Sexuality education starts at birth.
6. Sexuality education has to be understood as a contribution toward a fair and compassionate society by empowering individuals and communities.

7. Sexuality education is based on scientifically accurate information (Parker et al. 2009).

The emphasis on school-based education varies worldwide. For example, in a review of 83 SBSE curriculums worldwide (65 in developed nations and 18 in developing nations), 52 % focused on preventing only STD/HIV, 31 % focused on preventing both STD/HIV and pregnancy, and 17 % focused only on teen pregnancy (Kirby et al. 2007).

Several people have attempted to evaluate the effectiveness of US-based AUM versus CSE. Most AUM curricula rigorously evaluated have failed to demonstrate efficacy in delaying initiation of sexual intercourse, in reducing number of partners, in increasing condom use, or in promoting secondary abstinence (i.e., cessation of sexual intercourse among sexually experienced youth). AUM curriculum have been decried as withholding lifesaving information; promoting sexist and racist stereotypes; and being insensitive and unresponsive to lesbian, gay, bisexual, transgendered, and questioning (LGBTQ) youth (Santelli et al. 2006). Content analyses have also identified problems with the medical and scientific accuracy of information provided within commonly used AUM curricula. These inaccuracies often revolve around misinformation on condoms. A study explores the political, social, and economic forces that influenced US state decisions to accept or reject "abstinence-only" funding. States that rejected the funds had strong advocates for CSE and raised concerns about the efficacy and medical accuracy of AUM curriculums (Raymond et al. 2008). In contrast, states that accepted funds had little public dialogue and ignored public opinion polls favoring more comprehensive approaches.

Effect of SBSE on Sexual Health Outcomes

Overall, SBSE has been proven effective in positively impacting sexual health-related behaviors. In a 2009 review of 87 studies, evaluating the effect of SBSE curriculums around the world (29 from developing countries, 47 from the USA, and 11 from other developed countries) showed that SBSE had a direct positive impact on behaviors that related to pregnancy and transmission of STIs (UNESCO 2009). However, many of the programs had no impact, and even the effective programs tended to not dramatically reduce risky sexual behaviors. For example, 40 % of programs were found to increase condom use, while 60 % had no impact. Notably, no programs hastened sexual initiation, decreased condom use, nor increased the number of sexual partners. Many evaluations of SBSE do not include biological outcomes (e.g., HIV incidence and pregnancy rates) (Mavedzenge et al. 2014). The few that include biological measurements have found no significant effects on HIV incidence, STI prevalence, or pregnancy rates, even though the same programs demonstrated positive self-reported behavioral change. However, many CSE programs have been demonstrated in well-designed efficacy trials to improve knowledge and behavioral intentions and to reduce HIV-risk behaviors, by delaying initiation of sexual intercourse, reducing the number of sexual partners, and increasing condom use (Kirby and Ecker 2009; Underhill et al. 2007; Chin et al. 2012; Kirby 2008).

Table 8.1 Seventeen characteristics for effective curricular programs

Content of curriculum
1. Created safe social environment for youth participants
2. Focused on at least one of three health goals—prevention of HIV, of other STIs, and/or of unintended pregnancy
3. Focused narrowly on specific sexual behaviors that lead to these health goals (e.g., abstaining from sex, using condoms); gave clear messages about these behaviors; and addressed how to avoid situations that might lead to these behaviors
4. Targeted several psychosocial risk and protective factors affecting these behaviors (e.g., knowledge, perceived risks, attitudes, perceived norms, self-efficacy)
5. Included multiple activities to change each of the targeted risk and protective factor
6. Used teaching methods that actively involved youth participants and helped them to personalize the information
7. Made use of activities appropriate to the young people's culture, developmental level, and previous sexual experience
8. Addressed topics in a logical order
1. Selected educators with desired characteristics and provided training in curriculum
2. Secured at least minimum support from appropriate authorities (e.g., ministry of health, school district, community organization)
3. If needed, implemented activities to recruit youth and overcome barriers to their involvement in program
4. Implemented virtually all curriculum activities with fidelity
Curriculum implementation
Adapted from: (Kirby et al. 2005a)

A more recent 2014 review of 64 SBSE education studies in low- and middle-income countries further confirmed that SBSE is an effective strategy for reducing HIV-risk-related behaviors (Fonner et al. 2014). Students who had been exposed to SBSE (the majority of the curriculums under review were CSE administered in primary schools) had significantly greater HIV knowledge and higher self-efficacy related to refusing sex or using a condom. Two of the SBSE interventions, one in Tanzania and one in Kenya, had long-term follow-up, and both found sustained knowledge after three years. Additionally, behavioral changes were identified: The students who received SBSE had fewer sexual partners and delayed initiation of sex. The 2014 review also identified commonalities across interventions producing the most significant changes in behavior, including community-based components that involved local resources and activities outside of the school environment (e.g., youth-friendly trainings for healthcare providers, condom distribution, and community and parent involvement in the intervention design).

Many community-based sexuality education programs are based on peer-educator models. Evaluation studies, to the contrary, show that adults may be more effective in administering sexuality education. Nevertheless, teams of peer and adult educators have the best outcome among the models evaluated (Mavedzenge et al. 2014; Mellanby et al. 2001).

Effective Curriculums

Kirby et al. (2007) have defined 17 characteristics for effective curricular programs and classified them into three groups: (1) components of curriculum development (e.g., engagement of multiple stakeholders ensures that needs of target population are met and that the program is consistent with community values); (2) the content of the curriculum (e.g., has clear health goals,

Tables 8.2 Examples of tables of contents topics from 3 SBSE curriculums

• Sexual health and well-being require human rights • Gender • Sexuality • Interpersonal relationship • Communication and decision-making • The body, puberty, and reproduction • Sexual and reproductive health • Advocating for sexual health, rights, and gender equality	• Gender • Sexual and reproductive health and HIV • Sexual rights and sexual citizenship • Pleasure • Violence • Diversity • Relationships	• Reproductive health • Puberty • HIV/AIDS • STIs • Gender • Misconceptions about sex • Refusing temptations • Saying no to sex • STI: going to the clinic
Population council (sexuality, group, International Sexuality and HIV Curriculum Working Group 2009)	International planned parenthood federation (IPPF) (IPPF 2006)	MEMA kwa Vijana, A South Africa program for standard 5

focused on specific behaviors, addresses multiple risk and protective factors, creates a safe and supportive environment, uses instructionally sound teaching methods); and (3) the approach to implementation (e.g., have support of appropriate authorities, use appropriate facilitators, implement activities with fidelity) (Table 8.1).

Characteristics of effective education programs
Curriculum development
1. Involved people with different backgrounds in theory, research, and sex education
2. Planned specified health goals and identified behaviors affecting those goals, risk and protective factors affecting those behaviors, and activities to address those factors
3. Assessed relevant needs and assets of target group
4. Designed activities consistent with community values and available resources (e.g., staff skills, staff time, space, supplies)
5. Pilot-tested curriculum activities

While SBSE programs tend to have overlapping components, curriculums and approaches still vary widely. Many organizations have designed their own curriculum, and this variety becomes evident upon examining their table of content topical focus. It is also important to note that studies have found a gap between what is written and what is actually taught (UNESCO and UNFPA 2012) (Table 8.2).

These are just three examples of curriculum; for more example curriculums from East and Southern Africa, see curriculum reviews by UNESO and UNFP (UNESCO and UNFPA 2012).

A Supportive Environment for SBSE

The argument against SBSE is often focused on the role of government in family life, parental control over sexual information, and what constitutes appropriate adolescent behavior (Donovan 1998). In 2009, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) published "Technical Guidance on Sexuality Education" (UNESCO 2009). This document is an evidence-informed approach for schools, teachers, and health educators to enable them to advocate for an enabling environment for SBSE and is a source for developing curriculum. In addition to outlining the rationale for SBSE, the document provides common concerns about the provision of sexuality education and potential responses to alleviate doubts. For example, critics often say that sexuality education should come from the parents. UNESCO recommends reaffirming that parents have an important role in sexuality education and can be a great source of information while also emphasizing the role of SBSE is "to support and complement the role of parents" by providing a safe and supportive

learning environment and the tools and materials to deliver good quality sexuality education.

A great success story of scaling up a life skills-based education in a conservative environment is Pakistan (the term life skills was chosen to help preempt resistance to contested terms like sexuality). From 2004 until 2013, a CSE program was introduced by Rutgers WPF (formerly known as the World Population Foundation [WPF]) Pakistan in 1188 schools, and from 2006 to 2010, a total of 92,649 students received the curriculum (Svanemyr et al. 2015). Some key steps were part of the success of this program. In 2008, the curriculum was adapted, with input from Islamic scholars, for implementation in Islamic boarding schools. The rollout of the curriculum incorporated the media and advocacy campaigns that included key stakeholders: parents, teachers, school administrators, Muslim scholars, and education departments. The curriculum has been revised several times according to feedback from these groups, and teacher training has been an important part of implementation from the beginning.

In 2010 as part of the WHO Regional Office for Europe, the Standards for Sexuality Education in Europe were created (Federal Centre for Health Education BZgA 2010). This is a framework for policy-makers, education administrators, health authorities, and educational specialists. This document provides a background on sexuality education in Europe. It provides definitions and concepts and describes the rational for sexuality education. It also defines principles and outcomes of sexuality education. Likewise, the target groups and partners in the sexual education process are identified. Lastly, it specifies target information, skills, and attitudes that should be taught at different age levels. The age at which sexuality education starts is often debated and is very different across countries (Parker et al. 2009). Advocates and critics alike often talk about "age-appropriate" or "developmental-appropriate" sexuality education. The goal, basically, is to adapt the curriculum to fit the developmental stage of the child. A classic example is the difference in response to the question, "Where do babies come from?" If asked by a 12-year-old versus a 5-year-old, the response to the 12-year-old needs to be far more comprehensiveness. With regard to age-appropriate curriculums, the European standard includes a matrix of information, skills, and attitudes on a variety of sexual health topics that should be taught at each age (Federal Centre for Health Education BZgA 2010; Parker et al. 2009). For instance, related to the topic of sexuality and rights, WHO/Europe recommends teaching 0–4-year-olds the information that they have the right to ask questions about sexuality, the skills to express needs and wants, and the attitudes that "my body belongs to me." For children 4–6 years old, addressing the same topics, educators would review the same areas with students but also teach information about, "There are some people who are not good," and help students develop skills enabling them to talk to a trustworthy adult when in trouble. By 6–9 years old, the student would receive information about the right of self-expression, learn to ask for help and information, and develop feelings of responsibility for oneself and others. A 9–12-year-old learning about sexuality and rights would begin to learn about sexual rights and responsibilities, how they are defined, and how to act within these rights and responsibilities. Between 12 and 15 years old, the student is helped to develop skills to acknowledge sexual rights for oneself and others. After that, older students will be assisted to develop skills related to understanding human rights language, claiming their sexual rights, recognizing violations of sexual rights, and know how to speak out against discrimination and gender-based violence.

The public health community has built a large body of evidence against the US policy supporting AUM—a policy that has affected SBSE around the world. While enacted by a conservative Congress under President William Clinton (1993–2001), abstinence became the leading federal government strategy for dealing with adolescent sexuality under President George W. Bush (2001–08). The US promotion of AUM has impacted international funding and donor priorities when it became a key component of President's Emergency Plan for AIDS Relief (PEPFAR) (Santelli et al. 2006, 2013). Launched in 2003, PEPFAR was initially a five-year, $15 billion program of treatment and prevention in countries with a high prevalence of HIV. Beginning in 2006, PEPFAR specified that 33 % of all prevention funds (and two-thirds of funds for sexual transmission) would be earmarked for AUM programs (Dietrich 2007; Lantos and Hyde 2008). After 2006, all HIV prevention programs funded under PEPFAR were required to follow specific guidance on ABC (ABC—Abstinence, Being faithful, and Condom use) issued that year by the Office of the United States Global AIDS Coordinator (OGAC). The Obama Administration ended the majority of federal support for AUM in 2009 and shifted funding to science-based approaches to teen pregnancy prevention. Although PEPFAR no longer enforces the funding restrictions about separate abstinence and faithfulness programs, the ABC language still features prominently on Web sites and in public health promotion documents.

Reaching Vulnerable Groups

Beyond schools, sexual health education programs for youth take place in a variety of settings—including health facilities and communities (e.g., community mobilization and outreach) (Ross et al. 2006; Speizer et al. 2003). These types of programs are especially important for reaching vulnerable youth; community-based care and programs are important for reaching orphans, youth living on the streets, and other youth disconnected from formal educational systems (Thurman et al. 2008). Reaching these youth is especially important given that vulnerable youth often experience economic hardships and other risk factors that may increase their risk of negative health outcomes (Zweig 2003).

Public health educational campaigns might also take place through mass media (Ross et al. 2006; Speizer et al. 2003). A systematic review of 15 international programs (11 from Africa, 2 from Latin America, 1 from Asia, and 1 from multiple countries) found media—programs can have a positive influence on HIV-related outcomes. Data showed programs were effective in increasing HIV knowledge, improving condom self-efficacy, influencing some social norms, increasing the amount of interpersonal communication, increasing condom use, and boosting awareness of health providers. In this review, fewer significant effects on sexual behavior were found (e.g., delaying sexual initiation and decreasing number of sexual partners).

One example of a sexuality education mass media campaign targeting adolescents is the Straight Talk program in Uganda, implemented in 1993 (Adamchak et al. 2007). In addition to school-based activities, Straight Talk used three main media platforms: multilingual Straight Talk radio shows, multilingual Straight Talk newspapers, and an English language Young Talk newspaper. Evaluation of the media components suggested that greater exposure to Straight Talk resulted in significant associations with higher reproductive health knowledge for both men and women, and each incremental exposure is associated with increased knowledge. Additionally, exposure resulted in more balanced attitudes toward condoms and more communication with parents about adolescent sexual and reproductive health issues.

Moving Forward

Compared to the youth of past generations, young people today are entering puberty earlier, postponing marriage and childbearing, are more likely to have sex before marriage, and spend a prolonged period in education and training (Boonstra 2011; Willoughby and Dworkin 2009). Given these postponements in marriage and childbearing, the time period between adolescence and adulthood is typified by exploration and freedom from the normative responsibilities experiences by earlier generations (Arnett 2000). The increasing acceptance of a longer transition period before assuming traditional adult obligations, with less well-defined milestone trajectories, increases demographic variability during emerging adulthood (aged 18–25) (Arnett 2000). For instance, emerging adults report high mobility in residential status. Emerging adulthood is also characterized by a distinct subjectivity—emerging adults are uncertain about their status, seeing themselves as neither adolescent nor adult (Arnett 2000). Given these demographic shifts, the landscape of adolescent sexual health is changing.

In response to these changes and with an increasing recognition of the right of adolescents to sexual health and information, there is a crucial need for sexuality education. Sexuality education curriculum has improved over several generations, and research shows that school-based sexuality education has a role to play in public health prevention of adolescent risk and protective behaviors. However, many adolescents still do not receive sexuality education, and there are a wide variety of related policies worldwide (Boonstra 2011). Additionally, many adolescents miss the most common type of sexuality education (school-based programs) because of their vulnerable status. It is imperative that the public health community continues to advocate for sexuality education using scientific evidence and look for tools to provide sexuality education that meets the needs of all youth.

References

Abma, J. C., Martine, G. M., Mosher, W. D., & Dawson, B. S. (2004). Teenagers in the United States: Sexual activity contraceptive use and childbearing 2002. *Vital and Health Statistics. Series 23: Data from the National Survey of Family Growth, 24*, 1–48.

Adamchak, S. E., Kiragu, K., Watson, C., Muhwezi, M., & Nelson, T. (2007). *The straight talk campaign in Uganda: Impact of mass media initiatives*. Summary report.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469–480. doi: 10.1037/0003-066X.55.5.469

Baldwin, A., Dodge, B., Schick, V., Hubach, R. D., Bowling, J., Malebranche, D. … Fortenberry, J. D. (2014). Sexual self-identification among behaviorally bisexual men in the Midwestern United States. *Archives of Sexual Behavior,* 47, 1–12.

Bay-Cheng, L. Y. (2003). The trouble of teen sex: The construction of adolescent sexuality through school-based sexuality education. *Sex Education: Sexuality, Society and Learning, 3*(1), 61–74.

Bearinger, L. H., Sieving, R. E., Ferguson, J., & Sharma, V. (2007). Global perspectives on the sexual and reproductive health of adolescents: Patterns, prevention, and potential. *The Lancet, 369*(9568), 1220–1231.

Belsky, J., Steinberg, L., & Draper, P. (1991). Childhood experience, interpersonal development, and reproductive strategy: An evolutionary theory of socialization. *Child Development, 62*(4), 647–670.

Blum, R. W., & Nelson-Mmari, K. (2004). The health of young people in a global context. *Journal of Adolescent Health, 35*(5), 402–418.

Blumenfeld, W. J., & Raymond, D. C. (1988). *Looking at gay and lesbian life.* New York: Philosophical Library.

Boonstra, H. D. (2011). Advancing sexuality education in developing countries: Evidence and implications. *Guttmacher Policy Review, 14*(3), 17–23.

Bouchey, H. A., & Furma, W. (2003). Dating and romantic experiences in adolescence. *Blackwell Handbook of Adolescence*, 312–329.

Bramlett, M. D., & Mosher, W. D. (2002). *Cohabitation, marriage, divorce, and remarriage in the United States* (pp. 1–32). National Center for Health Statistics.

Byers, E. S. (2005). Relationship satisfaction and sexual satisfaction: A longitudinal study of individuals in long-term relationships. *Journal of Sex Research, 42*(2), 113–118.

Casey, B., Tottenham, N., Liston, C., & Durston, S. (2005). Imaging the developing brain: What have we learned about cognitive development? *Trends in Cognitive Sciences, 9*(3), 104–110.

CDC. (2012a). Sexual risk behavior: HIV, STD & teen pregnancy prevention. *Adolescent and School Health.*

Retrieved February 11, 2013 from http://www.cdc.gov/HealthyYouth/sexualbehaviors/

CDC. (2012b). Unintended pregnancy prevention. *Reproductive Health*. Retrieved February 11, 2013 from http://www.cdc.gov/reproductivehealth/UnintendedPregnancy/index.htm

Chandra, A. (2011). *Sexual behavior, sexual attraction, and sexual identity in the United States: Data from the 2006–2008 National Survey of Family Growth*. US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.

Chandra, A., Martinez, G. M., Mosher, W. D., Abma, J. C., & Jones, J. (2005). *Fertility, family planning, and reproductive health of US women: Data from the 2002 National Survey of Family Growth* (Vol. 25, pp. 1–160). Vital and Health Statistics. Series 23, Data from the National Survey of Family Growth.

Chandra, A., Mosher, W. D., Copen, C., & Sionean, C. (2011). National health statistics reports. *National Center for Health Statistics, 2006–2008*.

Colborn, T., vom Saal, F. S., & Soto, A. M. (1993). Developmental effects of endocrine-disrupting chemicals in wildlife and humans. *Environmental Health Perspectives, 101*(5), 378.

Correa, S., & Petchesky, R. (1994). Reproductive and sexual rights: A feminist perspective. *Health, Empowerment, and Rights. Nueva York: Harvard Center for Population and Development Studies and International Womens Health Coalition*, 109–110.

Crockett, L. J., Raffaelli, M., & Moilanen, K. L. (2003). *Adolescent sexuality: Behavior and meaning*. Faculty Publications, Department of Psychology, p. 245.

Das, A., Parish, W. L., & Laumann, E. O. (2009). Masturbation in urban China. *Archives of Sexual Behavior, 38*(1), 108–120.

Dehlendorf, C., Marchi, K., Vittinghoff, E., & Braveman, P. (2010). Sociocultural determinants of teenage childbearing among Latinas in California. *Maternal and Child Health Journal, 14*(2), 194–201.

Diamanti-Kandarakis, E., Bourguignon, J. P., Giudice, L. C., Hause, R., Prins, G. S., Soto, A. M. …, Gore, A. C. (2009). Endocrine-disrupting chemicals: An Endocrine Society scientific statement. *Endocrine Reviews, 30*(4), 293–342.

Diamond, L. M., & Savin-Williams, R. C. (2009). Adolescent sexuality. *Handbook of adolescent psychology*.

Dietrich, J. W. (2007). The politics of PEPFAR: The president's emergency plan for AIDS relief. *Ethics and International Affairs, 21*(3), 277–292.

Dixon-Mueller, R. (2011). *The sexual and reproductive health of younger adolescents*. Research issues in developing countries. Background paper for a consultation.

Donovan, P. (1998). School-based sexuality education: The issues and challenges. *Family Planning Perspectives,* 30, 188–193.

Ellis, B. J., & Garber, J. (2000). Psychosocial antecedents of variation in girls' pubertal timing: Maternal depression, stepfather presence, and marital and family stress. *Child Development, 71*(2), 485–501.

Federal Centre for Health Education BZgA. (2010). *Standards for sexuality education in Europe: A framework for policy makers, educational and health authorities and specialists*. Cologne: Federal Centre for Health Education, BZgA, World Health Organization Regional Office for Europe and BZgA.

Feldmann, J., & Middleman, A. B. (2002). Adolescent sexuality and sexual behavior. *Current Opinion in Obstetrics and Gynecology, 14*(5), 489–493.

Fine, M., & McClelland, S. I. (2006). Sexuality education and desire: Still missing after all these years. *Harvard Educational Review, 76*(3), 297–338.

Finer, L. B., & Philbin, J. M. (2013). Sexual initiation, contraceptive use, and pregnancy among young adolescents. *Pediatrics, 131*(5), 886–891.

Fonner, V. A., Armstrong, K. S., Kennedy, C. E., O'Reilly, K. R., & Sweat, M. D. (2014). School based sex education and HIV prevention in low-and middle-income countries: A systematic review and meta-analysis. *PLoS ONE, 9*(3), e89692.

Fortenberry, J. D., Schick, V., Herbenick, D., Sanders, S. A., Dodge, B., & Reece, M. (2010). Sexual behaviors and condom use at last vaginal intercourse: A national sample of adolescents ages 14 to 17 years. *The Journal of Sexual Medicine, 7*(s5), 305–314.

Garofalo, R., Deleon, J., Osmer, E., Doll, M., & Harper, G. W. (2006). Overlooked, misunderstood and at-risk: Exploring the lives and HIV risk of ethnic minority male-to-female transgender youth. *Journal of Adolescent Health, 38*(3), 230–236.

Grossman, A. H., & D'augelli, A. R. (2006). Transgender youth: Invisible and vulnerable. *Journal of Homosexuality, 51*(1), 111–128.

Halpern, C. T., Young, M. L., Waller, M. W., Martin, S. L., & Kupper, L. L. (2004). Prevalence of partner violence in same-sex romantic and sexual relationships in a national sample of adolescents. *Journal of Adolescent Health, 35*(2), 124–131.

Hamilton, B. E., Martin, J. A., & Ventura, S. J. (2009). Births: Preliminary data for 2009. National Vital Statistics Reports, p. 59.

Hanson, M. D., & Chen, E. (2007). Socioeconomic status and health behaviors in adolescence: A review of the literature. *Journal of Behavioral Medicine, 30*(3), 263–285.

Haworth, N., Gordon, S., & Jones, L. (2012). Changing trends in puberty: Implications for chiropractic practitioners. *Journal of Clinical Chiropractic Pediatrics, 13*(1), 951–957.

Hayford, S. R. (2009). The evolution of fertility expectations over the life course. *Demography, 46*(4), 765–783.

Hayward, M. D., Grady, W. R., & Billy, J. O. (1992). The influence of socioeconomic status on adolescent pregnancy. *Social Science Quarterly, 73*, 750–772.

Hensel, D. J., Fortenberry, J. D., & Orr, D. P. (2008). Variations in coital and noncoital sexual repertoire among adolescent women. *Journal of Adolescent Health, 42*(2), 170–176.

Higgins, J., & Hirsch, J. (2008). Pleasure, power, and inequality: Incorporating sexuality into research on contraceptive use. *American Journal of Public Health, 98*(10), 1803.

Higgins, J., Hirsch, J., & Trussell, J. (2008). Pleasure, prophylaxis and procreation: A qualitative analysis of intermittent contraceptive use and unintended pregnancy. *Perspectives on Sexual and Reproductive Health, 40*(3), 130–137.

Higgins, J., Mullinax, M., Trussell, J., Davidson, J. K., Sr., & Moore, N. (2011). Sexual satisfaction and sexual health among university students in the United States. *American Journal of Public Health, 101*(9), 1643.

International Sexuality and HIV Curriculum Working Group. (2009). *It's all one curriculum: Guidelines and activities for a unified approach to sexuality, gender, HIV, and human rights education.* NY: Population Council.

IPPF. (2006). *IPPF framework for comprehensive secuality education (CSE)*. London: International Planned Parenthood Federation.

Isaacs, S. L., & Schroeder, S. A. (2004). Class—the ignored determinant of the nation's health. *New England Journal of Medicine, 351*, 1137–1142.

Isen, A., & Stevenson, B. (2010). *Women's education and family behavior: Trends in marriage, divorce and fertility*. National Bureau of Economic Research.

Jeffery, A. N., Metcalf, B. S., Hosking, J., Streeter, A. J., Voss, L. D., & Wilkin, T. J. (2012). Age before stage: Insulin resistance rises before the onset of puberty a 9-year longitudinal study (EarlyBird 26). *Diabetes Care, 35*(3), 536–541.

Johnson, A. M., Mercer, C. H., Erens B., Copas, A. J., McManus, S., Wellings, K. … Nanchahal, K. (2001). Sexual behaviour in Britain: Partnerships, practices, and HIV risk behaviours. *The Lancet, 358*(9296), 1835–1842.

Jones, L. L., Griffiths, P. L., Norris, S. A., Pettifor, J. M., & Cameron, N. (2009). Is puberty starting earlier in urban South Africa? *American Journal of Human Biology, 21*(3), 395–397.

Jordan, K. M. (2000). Substance abuse among gay, lesbian, bisexual, transgender, and questioning adolescents. *School Psychology Review, 29*(2), 201–206.

Kaestle, C. E., & Allen, K. R. (2011). The role of masturbation in healthy sexual development: Perceptions of young adults. *Archives of Sexual Behavior, 40*(5), 983–994.

Kaplowitz, P. B., Slora, E. J., Wasserman, R. C., Pedlow, S. E., & Herman-Giddens, M. E. (2001). Earlier onset of puberty in girls: Relation to increased body mass index and race. *Pediatrics, 108*(2), 347–353.

Kawachi, I., Daniels, N., & Robinson, D. E. (2005). Health disparities by race and class: Why both matter. *Health Affairs, 24*(2), 343–352.

Kirby, D. (1992). School-based programs to reduce sexual risk-taking behaviors. *Journal of School Health, 62*(7), 280–287.

Kirby, D. (2001). Understanding what works and what doesn't in reducing adolescent sexual risk-taking. *Family Planning Perspectives, 33*, 276–281.

Kirby, D., Laris, B., & Rolleri, L. (2005a). *Impact of sex and HIV education programs on sexual behaviors of youth in developing and developed countries.* Family Health International, YouthNet Program.

Kirby, D. B., Laris, B., & Rolleri, L. A. (2007). Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world. *Journal of Adolescent Health, 40*(3), 206–217.

Kirby, D., Lepore, G., & Ryan, J. (2005b). Sexual risk and protective factors. Factors affecting teen sexual behavior pregnancy childbearing and sexually transmitted disease: Which are important? Which can you change?

Kirby, D., Short, L., Collins, J., Rugg, D., Kolbe, L., Howard, M. …, Zabin, L. S. (1994). School-based programs to reduce sexual risk behaviors: A review of effectiveness. *Public Health Reports, 109*(3), 339.

Lantos, T., & Hyde, H. (2008). *United States global leadership against HIV/AIDS, tuberculosis, and malaria reauthorization act of 2008: President's emergency plan for AIDS relief.*

Leichliter, J. S., Chandra, A., Liddon, N., Fenton, K. A., & Aral, S. O. (2007). Prevalence and correlates of heterosexual anal and oral sex in adolescents and adults in the United States. *Journal of Infectious Diseases, 196*(12), 1852–1859.

Lindberg, L. D., Jones, R., & Santelli, J. S. (2008). Noncoital sexual activities among adolescents. *Journal of Adolescent Health, 43*(3), 231–238.

Lleras-Muney, A. (2005). The relationship between education and adult mortality in the United States. *The Review of Economic Studies, 72*(1), 189–221.

Martin, P. D., Martin, D., Martin, M., Baizan, P., Aassve, A., Billari F. …, Ramisetty-Mikler, S. (2001). Adolescent premarital sexual activity cohabitation and attitudes toward marriage. *Adolescence, 36*(143), 601–609.

Mavedzenge, S. N., Luecke, E., & Ross, D. A. (2014). Effective approaches for programming to reduce adolescent vulnerability to HIV infection, HIV risk, and HIV-related morbidity and mortality: A systematic review of systematic reviews. *JAIDS Journal of Acquired Immune Deficiency Syndromes, 66*, S154–S169.

McClelland, S. (2011). Who is the "Self" in self reports of sexual satisfaction? Research and policy implications. *Sexuality Research and Social Policy, 8*(4), 304–320. doi:10.1007/s13178-011-0067-9

McGoldrick, D. (1991). The United Nations convention on the rights of the child. *International Journal of Law, Policy and the Family, 5*(2), 132–169.

Mellanby, A. R., Newcombe, R. G., Rees, J., & Tripp, J. H. (2001). A comparative study of peer-led and adult-led school sex education. *Health Education Research, 16*(4), 481–492.

Mmari, K., & Blum, R. (2009). Risk and protective factors that affect adolescent reproductive health in developing countries: A structured literature review. *Global Public Health, 4*(4), 350–366.

Montgomery, M. J., & Sorell, G. T. (1998). Love and dating experience in early and middle adolescence:

Grade and gender comparisons. *Journal of Adolescence, 21*(6), 677–689.

Ndyanabangi, B., Kipp, W., Odit, J., Mwijuka, B., & Mirembe, R. (2003). Reproductive health behavior among adolescents and young adults in a semi-urban district in Uganda. *Journal of Health and Population in Developing Countries*, 14.

Neinstein, L. S. (2008). *Adolescent health care: A practical guide* (Vol. 414). Lippincott Williams & Wilkins.

PAHO/WHO. (2000). List of sexual health concerns and problems. *Sexual Health Issues.* Retrieved February 12, 2014 from http://www.who.int/reproductivehealth/topics/sexual_health/issues/en/

Parent, A.-S., Teilmann, G., Juul, A., Skakkebaek, N. E., Toppari, J., & Bourguignon, J. P. (2003). The timing of normal puberty and the age limits of sexual precocity: Variations around the world, secular trends, and changes after migration. *Endocrine Reviews, 24*(5), 668–693.

Parker, R., Wellings, K., & Lazarus, J. V. (2009). Sexuality education in Europe: An overview of current policies. *Sex Education, 9*(3), 227–242.

Pinkerton, S., Cecil, H., Bogart, L., & Abramson, P. R. (2003a). The pleasures of sex: An empirical investigation. *Cognition and Emotion, 17*(2), 341–353. doi:10.1080/02699930302291

Pinkerton, S. D., Bogart, L. M., Cecil, H., & Abramson, P. R. (2003b). Factors associated with masturbation in a collegiate sample. *Journal of Psychology and Human Sexuality, 14*(2–3), 103–121.

Raymond, M., Bogdanovich, L., Brahmi, D., Cardinal, L. J., Fager, G. L., Frattarelli, L. C. …, Kantor, L. M. (2008). State refusal of federal funding for abstinence-only programs. *Sexuality Research and Social Policy, 5*(3), 44–55.

Robbins, C. L., Schick, V., Reece, M., Herbenick, D., Sanders, S. A., Dodge, B., et al. (2011). Prevalence, frequency, and associations of masturbation with partnered sexual behaviors among US adolescents. *Archives of Pediatrics and Adolescent Medicine, 165*(12), 1087–1093.

Roseneil, S. (2006). On not living with a partner: Unpicking coupledom and cohabitation. *Sociological Research Online, 11*(3).

Ross, D. A., Dick, B., & Ferguson, J. (2006). *Preventing HIV/AIDS in young people: A systematic review of the evidence from developing countries*. UNAIDS Inter-agency Task Team on Young People.

Russell, S. T., Ryan, C., Toomey, R. B., Diaz, R. M., & Sanchez, J. (2011). Lesbian, gay, bisexual, and transgender adolescent school victimization: Implications for young adult health and adjustment. *Journal of School Health, 81*(5), 223–230.

Rotheram-Borus, M. J., Hunter, J., & Rosario, M. (1994). Suicidal behavior and gay-related stress among gay and bisexual male adolescents. *Journal of Adolescent Research, 9*(4), 498–508.

Ryan, C., & Futterman, D. (1998). *Lesbian & gay youth: Care & counseling*. New York: Columbia University Press.

Rye, B., & Meaney, G. (2007). The pursuit of sexual pleasure. *Sexuality and Culture, 11*(1), 28–51. doi:10.1007/bf02853934

Sandfort, T. (1998). Homosexual and bisexual behaviour in European countries. *Sexual behaviour and HIV/AIDS in Europe*, 68–105.

Sandfort, T. G., & Ehrhardt, A. A. (2004). Sexual health: A useful public health paradigm or a moral imperative? *Archives of Sexual Behavior, 33*(3), 181–187.

Santelli, J., Ott, M. A., Lyon, M., Rogers, J., & Summers, D. (2006). Abstinence-only education policies and programs: A position paper of the Society for Adolescent Medicine. *Journal of Adolescent Health, 38*(1), 83–87.

Santelli, J., Rochat, R., Hatfield-Timajchy, K., Gilbert, B. C., Curtis, K., Cabral, R. …, Group, U. P. W. (2003). The measurement and meaning of unintended pregnancy. *Perspectives on Sexual and Reproductive Health, 35*(2), 94–101. doi:10.2307/3097785

Santelli, J. S., Lowry, R., Brener, N. D., & Robin, L. (2000). The association of sexual behaviors with socioeconomic status, family structure, and race/ethnicity among US adolescents. *American Journal of Public Health, 90*(10), 1582.

Santelli, J. S., Speizer, I. S., & Edelstein, Z. R. (2013). Abstinence promotion under PEPFAR: The shifting focus of HIV prevention for youth. *Global Public Health, 8*(1), 1–12.

Savin-Williams, R. C. (1989). Gay and lesbian adolescents. *Marriage and Family Review, 14*(3–4), 197–216.

Savin-Williams, R. C. (2001). A critique of research on sexual-minority youths. *Journal of Adolescence, 24*(1), 5–13.

Shtarkshall, R. A., Santelli, J. S., & Hirsch, J. S. (2007). Sex education and sexual socialization: Roles for educators and parents. *Perspectives on Sexual and Reproductive Health, 39*(2), 116–119.

Sørensen, K., Mouritsen, A., Aksglaede, L., Hagen, C. P., Mogensen, S. S., & Juul, A. (2012). Recent secular trends in pubertal timing: Implications for evaluation and diagnosis of precocious puberty. *Hormone Research in Paediatrics, 77*(3), 137–145.

Spear, L. P. (2000). The adolescent brain and age-related behavioral manifestations. *Neuroscience and Biobehavioral Reviews, 24*(4), 417–463.

Speizer, I. S., Magnani, R. J., & Colvin, C. E. (2003). The effectiveness of adolescent reproductive health interventions in developing countries: A review of the evidence. *Journal of Adolescent Health, 33*(5), 324–348.

Sprecher, S., & Cate, R. M. (2004). Sexual satisfaction and sexual expression as predictors of relationship satisfaction and stability. In J. H. Harvey, A. Wenzel, & S. Sprecher (Eds.), *Handbook of sexuality in close relationships*. Mahwah, NJ: Lawrence Erlbaum Associates.

Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences, 9*(2), 69–74.

Steingraber, S. (2007). The falling age of puberty in US girls. *Published by the Breast Cancer Fund*.

Svanemyr, J., Baig, Q., & Chandra-Mouli, V. (2015). Scaling up of life skills based education in Pakistan: A case study. *Sex Education (ahead-of-print)*, 1–14.

Sweat, M. D., & Denison, J. A. (1995). Reducing HIV incidence in developing countries with structural and environmental interventions. *Aids, 9*, S251–S257.

Thurman, T. R., Snider, L. A., Boris, N. W., Kalisa, E., Nyirazinyoye, L., & Brown, L. (2008). Barriers to the community support of orphans and vulnerable youth in Rwanda. *Social Science and Medicine, 66*(7), 1557–1567.

Tremblay, L., & Frigon, J. Y. (2005). Precocious puberty in adolescent girls: A biomarker of later psychosocial adjustment problems. *Child Psychiatry and Human Development, 36*(1), 73–94.

Udry, J. R., & Chantala, K. (2002). Risk assessment of adolescents with same-sex relationships. *Journal of Adolescent Health, 31*(1), 84–92.

UNESCO. (2009). *International technical guidance on sexuality education: An evidence-informed approach for schools, teachers and health educators.* UNESCO.

UNESCO & UNFPA. (2012). *Sexuality Education: A ten-country review of school curricula in East and Southern Africa.* United Nations Educational, Scientific and Cultural Organization (UNESCO) and The United Nations Population Fund (UNFPA). Retrieved from http://unesdoc.unesco.org/images/0022/002211/221121e.pdf

UNFPA. (2014). *UNFPA operational guidance for comprehensive sexuality education: A focus on human rights and gender*. New York: UNFPA. Retrieved from http://www.unfpa.org/sites/default/files/pub-pdf/UNFPA%20Operational%20Guidance%20for%20CSE%20-Final%20WEB%20Version.pdf

UNICEF. (2012). UNICEF data: Monitoring the situation of children and women. Retrieved July 4, 2015 from http://data.unicef.org/education/primary

Walvoord, E. C. (2010). The timing of puberty: Is it changing? Does it matter? *Journal of Adolescent Health, 47*(5), 433–439.

Wellings, K., Collumbien, M., Slaymaker, E., Singh, S., Hodges, Z., Patel, D., et al. (2006). Sexual behaviour in context: A global perspective. *The Lancet, 368* (9548), 1706–1728.

WHO. (2006). *Defining sexual health: Report of a technical consultation on sexual health.* January 28–31, 2002. Geneva: WHO.

WHO. (2013). *Research for universal health coverage: World health report 2013*. World Health Organization. Retrieved from http://www.who.int/whr/2013/report/en/

WHO/RHR. (2010). Developing sexual health programmes: A framework for action. Retrieved February 12, 2014 from http://www.who.int/reproductivehealth/publications/sexual_health/rhr_hrp_10_22/en/

Willoughby, B. J., & Dworkin, J. (2009). The relationships between emerging adults' expressed desire to marry and frequency of participation in risk-taking behaviors. *Youth and Society, 40*(3), 426–450.

Winker, M. A. (2004). Measuring race and ethnicity: Why and how? *Journal of American Medical Association, 292*(13), 1612–1614.

World Health Organization. (2014). Health for the world's adolescents: A second chance in the second decade. Summary.

Yarber, W. L., Sayad, B. W., & Strong, B. (2013). *Human sexuality: Diversity in contemporary America.* New York: McGraw-Hill.

Yurgelun-Todd, D. A., & Killgore, W. D. (2006). Fear-related activity in the prefrontal cortex increases with age during adolescence: A preliminary fMRI study. *Neuroscience Letters, 406*(3), 194–199.

Zhang, L., Gao, X., Dong, Z., Tan, Y., & Wu, Z. (2002). Premarital sexual activities among students in a university in Beijing, China. *Sexually Transmitted Diseases, 29*(4), 212–215.

Zolna, M., & Lindberg, L. D. (2012). *Unintended pregnancy: Incidence and outcomes among young adult unmarried women in the United States, 2001 and 2008.* Alan Guttmacher Institute.

Zweig, J. M. (2003). *Vulnerable youth: Identifying their need for alternative educational settings.* Urban Institute.

'Adolescent' Sexual and Reproductive Health: Controversies, Rights, and Justice

9

Catriona Ida Macleod

Introduction

'Adolescents'[1] and sex, adolescents and contraception, adolescents and pregnancy, adolescents and abortion: A mix of notions that evoke varied social responses and significant controversy, depending on the context. Debates abound concerning a range of questions, including whether young people should be exposed to formal sexuality education, whether diversity in gender expression and sexual orientation should be tolerated, whether contraception should be made freely available to teenagers, what should be done about pregnancy during adolescence, and whether, in contexts where abortion is legal, girls who are minors should be able to decide on the abortion themselves. It is within these kinds of debates, the HIV pandemic, and localized social dynamics that center on gender, race, class, religion, location, and ability that public sexual and reproductive health (SRH) interventions take place.

I start this chapter with an outline of the major global public health approach to adolescent SRH: the health and human rights framework. I then briefly overview some of the key issues concerning sexuality education, contraception, pregnancy, abortion, HIV, and lesbian, gay, bisexual (LGB)[2] issues among adolescents. Owing to space constraints, this overview cannot hope to capture all the nuances of the debates. I therefore home in on questions surrounding taken-for-granted assumptions and health injustices. With this as a backdrop, I argue for a sexual and reproductive justice approach that draws from transnational feminism. Such an approach would focus on health injustices, analyze gendered power relations that cohere around sexuality and reproduction among adolescents, highlight the intersectionality of race, class, location, religion, ability, and sexual orientation in health outcomes, and deconstruct normative frameworks and taken-for-granted assumptions.

[1] I have placed 'adolescents' in scare quotes in this first instance of use in recognition of the historical contingency and socially constructed nature of the social category of 'adolescence'. How 'adolescence' is conceptualized has significant implications for how sexual and reproductive issues among young people are understood and how interventions are designed (for further discussion, see Macleod 2011). For ease of reading, however, I do not persist in the use of scare quotes. I ask the reader to understand that I deploy the term in a deconstructed form, that is I simultaneously recognize the construction of the category as a social 'reality' and problematize it as necessarily fundamental to human development.

[2] I concentrate here on LGB issues on the basis of their speaking to sexual orientation directly. Transgender, transsexual, and intersex issues, while important, speak more to gender diversity which is not the focus of this chapter.

C.I. Macleod (✉)
Critical Studies in Sexualities and Reproduction, Psychology Department, Rhodes University, Grahamstown, South Africa
e-mail: c.macleod@ru.ac.za

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_9

Sexual and Reproductive Health and Rights

The International Conference on Population and Development (ICPD) held in Cairo in 1994 under the aegis of the United Nations was seen as a landmark event in setting the agenda for programs of action in relation to SRH globally, including for young people. The ICPD saw SRH as a state of physical, mental, and social well-being rather than the absence of disease. As such, it called for the educational and service needs of adolescents to be met in order for young people to deal positively and responsibly with sexuality, and for reproductive health services to be made available through the primary healthcare system to people of all ages, including young people. Using the language of human and health rights, the ICPD called on states to invest in the health of adolescents (United Nation 1995).

This rights-based framework has persisted with the United Nation's Commission on Population and Development issuing a resolution seventeen years later following intergovernmental negotiation. This resolution called for an entrenchment of the rights of young people to the following: comprehensive sexuality education; decision making regarding sexuality; access to SRH services; and control of their sexuality without the threat of violence, discrimination, or coercion (United Nations 2012).

Chandra-Mouli et al. (2015), in a review article reflecting on the progress made with respect to adolescent SRH twenty years on from the ICPD, argue that the rationale for focusing on adolescent health and rights has to do with young people facing particular risks that may have consequences not only for their immediate future but also for the rest of their lives. They note that a number of countries have implemented adolescent SRH programs since 1994, through both governmental and non-governmental avenues, not only for public health and human rights motives, but also for economic reasons.

Reviewing articles from a special issue of the *Journal of Adolescent Health* focusing on ICPD for the past 20 years, Chandra-Mouli et al. (2015) indicate that key recommendations are to link sexuality education and SRH services; strengthen youth-friendly SRH education; address gender inequality; and target early adolescence (ages 10–14 years). They note the challenges as follows: a lack of evaluation of activities that promote young people's participation in SRH programs; a lack of knowledge of the optimal level of intensity and duration for a program to have an effect; difficulties with taking effective programs to scale without compromising quality; the failure of programs to reach marginalized groups; insufficient knowledge on how young people are using technology to communicate about sexuality.

What is interesting in this list of recommendations and challenges is the inclusion of gender inequality as an issue that requires addressing and the concern that programs do not reach marginalized groups of adolescents. The argument I put forward in this chapter is that these kinds of inequities, including the structural barriers and normative frameworks on which they are based, are fundamental to adolescent SRH. In the following sections, I highlight some of these inequities as well as some of the normative assumptions that underpin various aspects of adolescent SRH.

Sexuality Education: The Persistence of Instrumentalist Aims

Formal sexuality education has been around for about a century, depending on location. In the USA, for example, it was introduced in the early decades of the twentieth century, with the initial aim of resolving the problems of venereal disease, prostitution, and sexual degeneracy through changing the sexual attitudes and behaviors of young people (Moran 2000).

Sex education has taken on various forms, focused on different aspects of sexuality (Wilson 2011), and has been supported or opposed by various rationales in the United States and elsewhere over the years. What have remained constant, however, are what Moran (2000) calls 'the instrumentalist goals' of sex education, viz., the idea that various social problems can be solved by changing the sexual behavior of young people

and that adolescents are at high risk for the development of various sexual and reproductive dangers and diseases. As Moran (2000) puts it:

> Even as they have reckoned with the novel crises of "teenage pregnancy" and AIDS in the aftermath of the sexual revolution, sex educators have navigated by familiar stars. The dominance of danger and disease in thinking about adolescent sexuality, a deep faith in the instrumentalist model of sex education, and a conviction that adolescence is somehow a thing apart from adult society – these are the unchanging boundaries of the universe within which sex education continues to be conceived (p. 217).

Much public health research emphasizes the effectiveness of sexuality education programs in reaching these kinds of instrumentalist goals. For example, in a review of North American school-based sexuality education programs, Kirby et al. (2011, p. 339) found that 'Not all sex and AIDS education programs had significant effects on adolescent sexual risk-taking behavior, but specific programs did delay the initiation of intercourse, reduced the frequency of intercourse, reduced the number of sexual partners, or increased the use of condoms or other contraceptives.'

One of the major debates, particularly in the USA, is the effectiveness of abstinence-only versus comprehensive sexuality education in reaching the instrumentalist goal of delaying sexual debut and protecting young people from sexual and reproductive difficulties (Donovan 2011). Researchers indicate that a definite answer is difficult to supply owing to the paucity of studies that compare these two types of interventions (Bennett and Assefi 2005). However, recent studies show that teaching about contraception did not increase sexual activity and that adolescents exposed to comprehensive sexuality education had reduced rates of pregnancy compared to those who received abstinence-only or no sex education (Kohler et al. 2008). Abstinence-only programs have also been critiqued for over-emphasizing young women's vulnerability, framing sexual restraint as a moral necessity (Froyum 2010), withholding information, promoting questionable and inaccurate opinions about sexuality, and violating the human rights of young people (Kantor et al. 2008; Santelli et al. 2006).

The instrumentalist orientation of much sexuality education (comprehensive or abstinence only) has, however, come in for significant critique in the last couple of decades. Authors have argued that discourses of victimization and individual morality dominate in the curriculum, while the discourse of desire is largely absent (Connell 2005). Normal teenaged sex is implicitly defined as heterosexual and coital (Bay-Cheng 2003). The interplay between gender, race, class, and sexuality is underplayed, with many programs in fact reproducing sexist, racist, and classist notions of sexuality (Bay-Cheng 2003). Whatley (2011, p. 59) argues, 'The school curriculum has in effect become a dumping ground for problems the wider society has been unable to solve, as teachers are expected to prevent students from being sexually active or, failing that, from getting pregnant and from contracting AIDS.' Opportunities for interweaving democratic civic action and critical sexual and reproductive citizenship in sexuality education are missed (Ashcraft 2008; Macleod and Vincent 2014).

Contraception: Potential Coercion, Unmet Need, Barriers, and Gender

The reported rate of contraceptive usage among young people who are sexually active varies according to the region. For example, research in Africa suggests that this rate is 32 %, while a study of Canadian and European youth found a rate of 82 % (Blanc et al. 2009). However, it appears that contraceptive usage among teenagers in low- and middle-income countries is increasing faster than among older women. Nevertheless, younger women experience more contraceptive failure and are more likely to discontinue contraception a year after starting than older women (Blanc et al. 2009).

Public health research on teenagers and contraception has focused on two broad issues: the most suitable form of contraception to reduce

SRH problems, and young people's knowledge, attitudes, and practices in relation to contraception. In terms of the types of contraception, authors argue that prescribing long-acting reversible contraception (LARC), such as intrauterine devices (IUDs) and long-acting injections and implants, may be most suitable as teenagers have difficulty with the daily regimen of oral contraception (Winner et al. 2012; Yen et al. 2010). There is little research on IUDs among young women, although the research that there is shows continued usage of the IUDs and low cumulative pregnancy rates (Deans and Grimes 2009). In their research in the USA, Whitaker et al. (2008) found that most young women were unaware of IUDs, but that they expressed positive attitudes to IUDs after receiving some education about them.

Long-acting injectable and implant contraception is somewhat more controversial than IUDs as these may have negative side effects, such as reducing skeletal health. However, some authors argue that these are reversible in adolescents (Tolaymat and Kaunitz 2007). Given the possible short- and long-term effects of LARCs, concerns have been raised concerning their being used in coercive ways with marginalized women (including adolescents) and as a remedy for a perceived social problem (in this case adolescent pregnancy) (Gehlert and Lickey 1995; Lucke and Hall 2012).

An important concept in contraceptive use is the notion of unmet need. Unmet need is when women are 'married/in a union or sexually active, able to conceive a pregnancy, do not want to have a child (or another child) in the next two years or at all and are not using a method of contraception (modern or traditional)' (Russo and Steinberg 2012, p. 158). Rates of unmet need differ around the world, with women in low- and middle-income countries and poorer women within countries experiencing higher rates (Russo and Steinberg 2012). Women who experience discrimination on the basis of race, gender, or class are less likely to use contraception or to use the contraceptive method of their choice than women who are not subject to such discrimination (Kossler et al. 2011). Similarly, adolescents experience high levels of unmet need, as indicated by Kennedy et al. (2011) in their review of the demographic and health surveys of East Asia and the Pacific.

Barriers to young people using contraception have been reasonably well documented. For example, in a systematic review of qualitative research in low- and middle-income countries, Williamson et al. (2009) found that young people's use of hormonal methods was limited by lack of knowledge, obstacles to access, and concern over side effects, especially fear of infertility. In terms of structural barriers, Kennedy et al. (2011) found in their review that adolescent women have less access to contraceptive information and services than adult women.

To counteract these acknowledged trends, adolescent-friendly service initiatives, in which services are rendered in a way that is acceptable to young people and that encourages them to use the services, have been set up in a number of countries (Tylee et al. 2007). Although these initiatives have met with some success, they have also been critiqued for continuing to treat adolescence as an underdeveloped stage, for idealizing traditional family forms, and for viewing sexuality as negative and dangerous for girls, and pregnancy as wholly deleterious (Goicolea et al. 2010).

Research shows that contraceptive usage and negotiation is deeply gendered. For example, fear of infertility and other effects such as weight gain as a result of oral contraception and LARCs is embedded in particular notions of femininity, which include the slim and reproductive female body as the only legitimate body (Ekstrand et al. 2005). This fear of infertility may lead young women in some contexts to seek abortion, even under unsafe conditions, rather than use contraception [see Otoide et al. (2001) research in Nigeria].

Condom use is limited by association with disease and promiscuity, but also by greater male control over sexual interactions (Williamson et al. 2009). Young women in Sweden indicate that sexual partners are frequently unwilling to use condoms and that negotiating usage was difficult (Thorsén et al. 2006). This is echoed in South African research, where male participants spoke of tricking women into having sex, lying

to the women about using condoms, and coercing women into sex or using violence to force sex (MacPhail and Campbell 2001). Researchers have indicated that the notion of romantic love can render young people, particularly young women, ineffective in negotiating contraceptive usage (East et al. 2007).

An unexamined assumption in much of the work on contraception, however, is that the responsibility for contraception lies, in the main part, with women. Researchers have referred to this as the feminization of contraception. Wigginton et al. (2014) show in their research how contraception usage, in particular the Pill, fits with discourses of heterosexuality and gendered understandings of the role of women in managing fertility.

Pregnancy: Consequences, Intervention, and Barriers

About 20,000 teenagers give birth every day across the world (Williamson 2014), making pregnancy and childbirth among young women almost the norm. The demographic distribution of adolescent pregnancy, however, reveals social and reproductive health inequities. According to the United Nations Population Fund report on adolescent pregnancy, in all regions of the world, impoverished, poorly educated, and rural teenagers are more likely to become pregnant than their wealthier, better educated, urban counterparts. In addition, young women from ethnic minorities or marginalized groups (who have few opportunities and poor access to SRH) are at high risk for pregnancy. About 95 % of adolescent pregnancies occur in low- and middle-income countries, with 90 % of these occurring within marriage (Williamson 2014).

Pregnancy among teenaged women is commonly seen as a social problem, as indicated in the World Health Organization (2011) book on preventing early pregnancy and poor reproductive outcomes in low- and middle-income countries in which it is stated that 'adolescent pregnancy' contributes to maternal, perinatal, and infant mortality, and to a vicious cycle of poverty and ill-health. Other consequences, as listed in public health literature, are as follows: the disruption of schooling; poor child outcomes in terms of health, emotional development, and learning; welfare dependency; contribution to higher fertility rates in certain countries; and the association of teenage pregnancy with HIV (Macleod 2011).

There is some dispute, however, about whether it is age, in and of itself, that leads to these outcomes or other factors, in particular socioeconomic status. Some scholars have argued that research on the consequences of 'teenage pregnancy' fails to adequately account for confounding variables, such as socioeconomic status, ethnicity, marital status, lifestyle factors, family structure, parity, and prenatal and other health care. Geronimus (2003), in summarizing well-designed comparative studies, concludes that the outcomes of pregnancy among adolescents are 'slightly negative, negligible, or positive' (p. 881) in relation to those among older women.

Given this, the question arises as to why, despite evidence to the contrary, the narrative of the negative consequences of teenage pregnancy childbearing persists. I have argued elsewhere (Macleod 2011) that this is related to particular understandings of adolescence as a transitional stage, a conceptualization deeply rooted within a colonialist discourse that equates the development of the individual with the development of civilization. This equation, although not overtly favored anymore, continues to occupy the notion of adolescence. It accounts for the construction of the risky teenager who is constantly a potential threat to her own well-being but also to the body politic (society as a whole). This threat of degeneration that 'adolescence' implies, as I argue elsewhere, that, no matter contrary evidence, teenagers who reproduce are constantly contributing to a range of social problems.

Having said this, however, it is still important that young women receive support during and after their pregnancies (as should be argued for women of any age). Interventions with pregnant teenagers include promoting early detection of the pregnancy and use of antenatal care, and support to return to school, where suitable and

desired. Barriers to antenatal care for young women (in relation to the care that is provided to older women in the same circumstances) center mostly on health service provider attitudes and actions, which are frequently negative regarding pregnancy among adolescents (Breheny and Stephens 2007; Warenius et al. 2006). Health service providers are often reluctant to discuss issues relating to sexuality and reproduction with young women (WHO 2007) and may view the young women as deficient mothers (Breheny and Stephens 2007). This may lead young women to be distrustful of the health services providers and thus less likely to follow their advice (Breheny and Stephens 2007). Return rates to school differ depending on local circumstances with major reasons for non-return being the need to care for the child. Research in South Africa found that the chances of return to school diminish over time, with non-return being almost certain after four years of absence (Grant and Hallman 2006).

Abortion: Unsafe Abortion, and Decision Making

The World Health Organization (2007) estimates that 30–60 % of pregnancies among teenagers end in abortion. In countries such as Sweden and the Netherlands, where there is unrestricted access to good quality abortion services together with good contraceptive services, abortions remain limited (WHO 2007). However, abortion is legally restricted or severely restricted in many countries, resulting in young women resorting to unsafe abortion, defined as a procedure performed by people lacking the necessary skills or in an environment not meeting the minimal medical standards (or both).

Unsafe abortion is a major reproductive health concern particularly in low- and middle-income countries with an estimated 22 million women undergoing unsafe abortion each year and an estimated 13 % of maternal mortalities being the result of unsafe abortion (WHO 2007). An estimated 15 % of unsafe abortions occur among women aged 15–19 (Shah and Åhman 2012). In low- and middle-income countries, a significant percentage of women reporting to hospitals or clinics for complications resulting from abortion are below the age of 20 (WHO 2007).

While dire health consequences are most common in countries where abortion legislation is restrictive, in countries where abortion is legal and available, a major controversy surrounds the question of whether minors should be able to obtain an abortion without parental consent. Proponents of parental consent argue that in such a decision, the advice and counseling of an older and wiser person are required, particularly as teenagers lack the cognitive skills to predict the long-term consequences (Trad 1998). Opponents counter that requiring young people to gain parental permission for an abortion may itself have extremely adverse effects, including family conflict and rejection, delays in obtaining the abortion either because of parental consent or because of the judicial bypass system (that operates in the some states of the USA), and an increase in the number of women accessing unsafe abortion (Rodman 1991). In addition, they argue that in understanding decision making, context needs to be considered, with the competence to make a decision being specific to the area under consideration (Adler et al. 2003).

HIV: Discrepancies, Antiretrovirals (ARVs), and Barriers

In 2012, it was estimated that 2.1 million adolescents were living with HIV (Mavedzenge et al. 2014). Adolescents living in low- and middle-income countries are disproportionately burdened by the global HIV/AIDS pandemic (Hudelson and Cluver 2015). Within countries, it is generally marginalized groups of people who are most at risk. For example, in South Africa, a country with one of the highest rates of HIV infection, the latest National Prevalence,

Incidence and Behavior Survey (Shisana et al. 2014) revealed HIV prevalence rate discrepancies along the following lines: location (people living in rural locations and informal settlements have a higher prevalence than those in urban formal settlements), race (black people have higher prevalence than white people), and gender (women are at higher risk than men—the teenage population, the estimated HIV prevalence among females is eight times higher than that of their male counterparts). Of great concern globally is that there has been a 50 % increase in HIV-related deaths among youth 10–24 years of age from 2005 to 2012 (Lall et al. 2015).

Adherence to ARVs among HIV-positive adolescents differs significantly from 16 to 99 % across countries (Hudelson and Cluver 2015). Although studies do not reveal clear factors associated with adherence, it appears that gender, knowledge of serostatus (positive or negative for a particular antibody), family structure, ART regimens, how treatment is administered, attitudes about medication, healthcare provision, location, mental health, and adherence to clinic appointments play a role (Hudelson and Cluver 2015; Lall et al. 2015).

Authors argue that as a result of the barriers that adolescents experience in accessing services, new infections and poor outcomes when infected are common (Mavedzeng et al. 2014). In light of this, interventions that are specifically designed for adolescents are called for. Recent evidence suggests that in-school interventions and interventions aimed at geographically specific communities can have positive effects on HIV outcomes among adolescents (Mavedzenge et al. 2014). A relatively new intervention is the cash transfer program implemented mostly in low- and middle-income countries to overcome the structural problems of poverty. Studies show a decrease in sexual activity among recipients and some decrease in HIV infection (Pettifor et al. 2012). Given the costs involved and the implication that one should be paid for adjusting one's behavior, the possibility of scaling this program up to be implemented beyond pilot projects seems minimal.

LGB Issues: Homophobia and Heteronormativity

In the context of heteronormative policy, legislation, and social practices, a major public health concern for adolescents who identify as lesbian, gay, and bisexual (LGB) is the support provided to these young people not only in relation to SRH but also in developing healthy and affirmed identities. The possibility for this kind of support varies widely across the world depending on legislative and social contexts. Contrasts include countries (e.g., Uganda and Nigeria) where homosexuality is outlawed and countries (e.g., South Africa) where gay rights are enshrined in the constitution.

Clearly in countries where there are entrenched and overt homophobia and restrictive legislation, young people have great difficulty in exploring alternative sexualities or moving outside of heteronormative life courses without experiencing potentially severe consequences. Nevertheless, erotic same-sex spaces are often forged, without the young people necessarily taking on the identity of lesbian, gay, or bisexual (Dankwa 2009; Epprecht 2013).

Even in countries where there is relative openness around LGB issues, heteronormative practices and discourses still underpin much of young LGB people's experiences. For example, in the USA, Sadowski's (2012) research shows how families, schools, and communities contributed to the silencing of expression by gay or queer-identifying young men, and Dhaenens (2012) shows how the popular television show *Glee* represents gay youth as victims and as aspiring to heteronormative values. There is little research conducted on the influences of parents of LGB teenagers on their sexual behavior, substance use, violence/victimization, and what are the negative forces, rather than positive, influences (Bouris et al. 2010).

Sexual and Reproductive Health Justice: Transnational Feminism

The above discussion highlights two main themes. First, there is an uneven distribution of SRH difficulties among adolescents both globally and within countries: Adolescents in low- and middle-income countries, adolescents from poorer communities and rural locations, minority groups, and less educated adolescents are more likely to experience a range of difficulties than their wealthier, more educated counterparts living in urban areas and in high-income countries. These difficulties include unmet need for contraception and being less likely to use contraception of their choice, more likely to experience unplanned and unwanted pregnancies, more likely to undergo unsafe abortion, more likely to be infected by HIV, and more likely to be experience overt homophobia. Second, a number of normative assumptions underpin many understandings and interventions with regard to adolescent SRH. Formal sexuality education, for the most part, emphasizes danger and disease and rests on the instrumentalist goal of solving social problems through individual behavior change. Contraceptive usage is deeply feminized, both within public health interventions and in interpersonal interactions. The automatic assumption of adolescent pregnancy as a social problem and individual disaster rests fundamentally on an adolescent-as-transition discourse, as do the concerns around young women being able to make the decision to terminate their pregnancies without parental consent or guidance. Heteronormative and gendered discourses and practices are deeply entrenched in understandings of, responses to, and the experiences of sexuality and reproduction among young people.

It is in light of these inequities and normative assumptions that I advocate the use of a sexual and reproductive justice approach with regard to adolescent SRH. Drawing from a social justice framework, a sexual and reproductive justice approach seeks to illuminate the complex array of social, economic, cultural, and healthcare possibilities and challenges that serve to either enhance or impede conditions within which women and men experience sexuality and reproduction (Gilliam et al. 2009). Sexual and reproductive justice arguments, while not eschewing public health and human rights approaches, extend the debate to foreground the social reality of inequities and the power relations that cohere around these inequities. They highlight the complex interlinking of health with economic, legal, labor, immigration and migration, welfare, housing, and policy issues (Bailey 2011).

In viewing international public health responses to adolescent SRH from a sexual and reproductive justice perspective, we need to highlight not only inequities that cohere around axes of differentiation within countries, but also global power relations on which not only economic relations center but also health inequities. A useful theoretical resource in this respect is transnational feminism. Transnational feminism attunes its pronouncements on liberatory practices and discourses to social and historical conditions. The racial, geographical, economic, and class-based differences between women, all of which have central implications in terms of their access to health resources and their experiences of reproductive justice, are recognized. There is a refusal to see women as a single oppressed class across time and space. Rather advocacy efforts are molded to the nuances of gendered power relations within a particular context. Simultaneously, transversal relations of commonality particularly around sexuality and reproduction are sought. Feminist practice, thus, becomes a matter of alliances around central chains of equivalence rather than one of unity around a universally shared interest (such as promoting 'choice') (Macleod 2011).

What would be the implications of a sexual and reproductive justice approach that draws from transnational feminism in terms of adolescent SRH? A definitive answer to this question is neither possible nor, perhaps, desirable. Instead, I highlight a few examples of possible directions, particularly in terms of how adolescent reproduction is conceptualized and how interventions are implemented.

As indicated above, the standard response to adolescent pregnancy is to view it as a social

problem that requires solving through the substantive preventive measures. Revisionist authors, however, argue that particularly among young women in disadvantaged circumstances, negative outcomes are not necessarily related to age and that having children in these circumstances while younger may, in fact, be advantageous in terms of childcare possibilities and support for the mother (Geronimus 2003). Elsewhere (Macleod 2011), I have argued for substituting the signifier 'adolescent pregnancy' (or 'teenage pregnancy') with 'unwanted pregnancy.' The signifier 'adolescent pregnancy' foregrounds the young woman who is pregnant: the adolescent who breaches (middle class, white) developmental norms. The specifier 'unwanted pregnancy,' on the other hand, re-introduces the fact that pregnancy is only possible within a gendered relationship and that it occurs within a set of social circumstances. A pregnancy is 'unwanted' because a woman is located within a particular nexus of conditions (ranging from interpersonal relations and local context to macro-level structural and policy issues) that make the possibility of childbearing extremely difficult.

In terms of intervention, there is, by now, quite extensive debate concerning various interventions. For example, in terms of emancipatory sexuality education, a number of authors have suggested alternatives to current sexuality education programs including the following: using works of art to discuss desire, eroticism, and sexual norms (Addison 2006); incorporating an ethics of rights and responsibilities along various dimensions of sexuality (Dixon-Mueller et al. 2009); tailoring programs to fit with the contexts of young people's lives (Abel and Fitzgerald 2006); introducing an ethics of pleasure into programs (Allen 2007); including positive aspects of sexuality along with the risk management dimension, thereby viewing adolescent sexuality as developmentally normative (Tolman and Mcclelland 2011); concentrating on gender, power, and rights in sexuality education (Haberland and Rogow 2015); integrating a critical sexual and reproductive citizenship framework into sexuality education (Macleod and Vincent 2014). As will be noted, these suggestions do not cohere around a single theme, and debates between scholars thinking through and working with the possibilities of emancipatory sexuality education abound.

Of course, as we start implementing programs that could be seen as furthering sexual and reproductive justice among adolescents, further difficulties may arise. I have already alluded to some of the critiques of the adolescent-friendly clinic initiative. Along the same lines, many schooling programs have been instituted to retain pregnant and parenting teenagers in school. These programs can be seen as enhancing reproductive justice in terms of granting young women access to educational opportunities and the possibility of future access to production. Evaluations of these kinds of programs are mixed, however. Some show positive results (Sadler et al. 2007), and others find minimal impact on increasing rates of educational attainment among these young mothers (Baytop 2006). A critique of these programs is that they may re-exclude teenagers by segregating them in alternative settings or fail to provide them with sufficient support (such as on-site childcare) in regular school settings (Kelly 2000).

As indicated above, transnational feminist approach to SRH would seek, on the one hand, to identify transversal relations of commonality. In terms of SRH among adolescents, this would include a recognition of the following: (1) sexuality in young people's lives, and of reproduction in some young people's lives, (2) the imperative of preventing sexual and reproductive difficulties, (3) the promotion of access to health care, (4) the intersection of mental and SRH, and (5) the pivotal role of localized gendered power relations in molding young people's lives. On the other hand, such an approach requires that programs be attuned to local specificities.

The latter requirement is important in terms of the kinds of globalized public health interventions that are instituted in a range of countries. HIV is a case in point. HIV affects people in low- and middle-income countries disproportionately. Betancourt et al. (2013) argue for interventions that promote resilience among HIV-infected and

affected adolescents. Studies show that family and parental support, lack of stigma, and social inclusion promote resilience and that community sensitization campaigns, school-based awareness programs, family interventions, and peer-to-peer support programs can be effective in promoting resilience (Betancourt et al. 2013). How support is rendered within a community, the cultural discourses and practices underpinning stigma, and the social mechanisms of inclusion and exclusion will differ from place to place. These specificities, in particular the gendered dynamics underpinning them, need careful consideration in any of the interventions mentioned.

Interventions that assist young pregnant women are another case in point. For example, in India, many of the pregnancies among young women occur within the context of early marriage (Nath and Garg 2008), whereas in other countries such as South Africa, marriage occurs late, and therefore, early pregnancy usually occurs outside of marriage (Makiwane and Udjo 2006). The gendered, social, and cultural dynamics underpinning pregnancy in these two diverse contexts need careful consideration in interventions.

Understanding that these kinds of cultural discourses and social practices filter into healthcare practices is an important component of a sexual and reproductive justice approach. Health service providers live in the same social milieu as the patients that they see and are equally well cultural beings. This can be seen in relation to post-abortion care offered in countries where abortion is very restrictive and women mostly resort to unsafe abortion. Researchers have found that post-abortion care is woefully inadequate in some African countries owing to service providers' resistance, based on moral outrage, in offering these services (Abdella et al. 2013; Clark et al. 2010).

Conclusion

The basic argument developed in this chapter is that a focus on adolescent SRH must always be located within contextual healthcare inequities that fracture along multiple lines of differentiation. If we place the SRH of young women and men at the center of public health concerns, then attention needs to be drawn to overt as well as subtle injustices that are inherent in the healthcare and social systems within which young women and men are located. These injustices simultaneously cohere within structural barriers and in social and cultural discourses and practices that serve to reinforce gendered, racialized, class-, religion-, and location-based power relationships. While the human and health rights approach to SRH has been useful in advocating for particular programs of action, it is also limited in its focus on individual, indivisible rights. In addition, the framework is inadequate to the task of interweaving the individual with the social both in conceptualizing what we mean by SRH and in planning interventions. I argue in this chapter for a sexual and reproductive justice approach that draws from transnational feminism. This approach has the advantage of fore-fronting inequities rather than individual behavior or cognitions while at the same time allowing for nuanced and localized analyses of power relations and practices. It enables an assessment of transversal chains of equivalence concerning SRH issues across multiple locations and spaces, while at the same refusing the universalization that is inherent in a rights approach. If in-depth inquiries about discursive and social practices that serve to maintain particular power relations are affected, these inquiries can inform progressive and liberatory interventions.

Acknowledgments This work is based on research supported by the South African Research Chairs initiative of the Department of Science and Technology and National Research Foundation of South Africa, Grant Number 87582. Thank you to Kim Barker who commented on an earlier version of the paper.

References

Abdella, A., Fetters, T., Benson, J., Pearson, E., Gebrehiwot, Y., Andersen, K., …, Tesfaye, S. (2013). Meeting the need for safe abortion care in Ethiopia:

Results of a national assessment in 2008. *Global Public Health, 8*(4), 417–434. doi:10.1080/17441692.2013.778310

Abel, G., & Fitzgerald, L. (2006). 'When you come to it you feel like a dork asking a guy to put a condom on': Is sex education addressing young people's understandings of risk? *Sex Education, 6*(02), 105–119.

Addison, N. (2006). Acknowledging the gap between sex education and the lived experiences of young people: A discussion of Paulo Rego's The Pillowman (2004) and other cautionary tales. *Sex Education, 6*(4), 351–365.

Adler, N. E., Ozer, E. J., & Tschann, J. (2003). Abortion among adolescents. *American Psychologist, 58*(3), 211.

Allen, L. (2007). Examining dominant discourses of sexuality in sexuality education research. *International Studies in Sociology of Education, 17*(1/2), 163–180.

Ashcraft, C. (2008). So much more than "Sex Ed": Teen sexuality as vehicle for improving academic success and democratic education for diverse youth. *American Educational Research Journal, 45*, 631–667. doi:10.3102/0002831207313344

Bailey, A. (2011). Reconceiving surrogacy: Toward a reproductive justice account of Indian surrogacy. *Hypatia, 26*(4), 715–741. doi:10.1111/j.1527-2001.2011.01168.x

Bay-Cheng, L. Y. (2003). The trouble of teen sex: The construction of adolescent sexuality through school-based sexuality education. *Sex Education, 3*(1), 61–74. doi:10.1080/1468181032000052162

Baytop, C. (2006). Evaluating the effectiveness of programs to improve educational attainment of unwed African American teen mothers: A meta analysis. *The Journal of Negro Education, 75*(3), 458–477.

Bennett, S. E., & Assefi, N. P. (2005). School-based teenage pregnancy prevention programs: A systematic review of randomized controlled trials. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 36*(1), 72–81. doi:10.1016/j.jadohealth.2003.11.097

Betancourt, T. S., Meyers-Ohki, S. E., Charrow, A., & Hansen, N. (2013). Annual research review: Mental health and resilience in HIV/AIDS-affected children—A review of the literature and recommendations for future research. *Journal of Child Psychology and Psychiatry and Allied Disciplines, 54*, 423–444. doi:10.1111/j.1469-7610.2012.02613.x

Blanc, A. K., Tsui, A. O., Croft, T. N., & Trevitt, J. L. (2009). Patterns and trends in adolescents' contraceptive use and discontinuation in developing countries and comparisons with adult women. *International Perspectives on Sexual and Reproductive Health, 35*(2), 63–71. doi:10.1363/3506309

Bouris, A., Guilamo-Ramos, V., Pickard, A., Shiu, C., Loosier P. S., Dittus, P., …, Waldmiller, J. M. (2010). A systematic review of parental influences on the health and well-being of lesbian, gay, and bisexual youth: Time for a new public health research and practice agenda. *The Journal of Primary Prevention, 31*(5–6), 273–309. doi:10.1007/s10935-010-0229-1

Breheny, M., & Stephens, C. (2007). Irreconcilable differences: Health professionals' constructions of adolescence and motherhood. *Social Science and Medicine, 64*, 112–124.

Chandra-Mouli, V., Svanemyr, J., Amin, A., Fogstad, H., Say, L., Girard, F., et al. (2015). Twenty years after international conference on population and development: Where are we with adolescent sexual and reproductive health and rights? *Journal of Adolescent Health, 56*(1), 1–6. doi:10.1016/j.jadohealth.2014.09.015

Clark, K. A., Mitchell, E. H. M., & Aboagye, P. K. (2010). Return on investment for essential obstetric care training in Ghana: Do trained public sector midwives deliver postabortion care? *Journal of Midwifery and Women's Health, 55*(153), 153–161. doi:10.1016/j.jmwh.2009.12.012

Connell, E. (2005). Desire as interruption: Young women and sexuality education in Ontario, Canada. *Sex Education, 5*(3), 253–268. doi:10.1080/14681810500171433

Dankwa, S. O. (2009). "It's a silent trade": Female same-sex intimacies in post-colonial Ghana. *NORA—Nordic Journal of Feminist and Gender Research, 17*(3), 192–205. doi:10.1080/08038740903117208

Deans, E. I., & Grimes, D. A. (2009). Intrauterine devices for adolescents: A systematic review. *Contraception, 79*(6), 418–423. doi:10.1016/j.contraception.2008.12.009

Dhaenens, F. (2012). Teenage queerness: Negotiating heteronormativity in the representation of gay teenagers in Glee. *Journal of Youth Studies, 1–4*(3), 1–14. doi:10.1080/13676261.2012.718435

Dixon-Mueller, R., Germain, A., Fredrick, B., & Bourne, K. (2009). Towards a sexual ethics of rights and responsibilities. *Reproductive Health Matters, 17*(33), 111–119.

Donovan, P. (2011). School-based sexuality education: The issues and challenges. *Family Planning Perspectives, 30*(4), 188–193. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/9711458

East, L., Jackson, D., O'Brien, L., & Peters, K. (2007). Use of the male condom by heterosexual adolescents and young people: Literature review. *Journal of Advanced Nursing, 59*, 103–110. doi:10.1111/j.1365-2648.2007.04337.x

Ekstrand, M., Larsson, M., Von Essen, L., & Tydén, T. (2005). Swedish teenager perceptions of teenage pregnancy, abortion, sexual behavior, and contraceptive habits—A focus group study among 17-year-old female high-school students. *Acta Obstetricia et Gynecologica Scandinavica, 84*(10), 980–986.

Epprecht, M. (2013). *Sexuality and social justice in Africa, rethinking homophobia and forging resistance*. London: Zed Books.

Froyum, C. M. (2010). Making "good girls": Sexual agency in the sexuality education of low-income black

girls. *Culture, Health & Sexuality, 12*(1), 59–72. doi:10.1080/13691050903272583

Gehlert, S., & Lickey, S. (1995). Social and health policy concerns raised by the introduction of the contraceptive Norplant. *The Social Service Review*, 323–337.

Geronimus, A. T. (2003). Damned if you do: Culture, identity, privilege, and teenage childbearing in the United States. *Social Science and Medicine, 57*(5), 881–893.

Gilliam, M. L., Neustadt, A., & Gordon, R. (2009). A call to incorporate a reproductive justice agenda into reproductive health clinical practice and policy. *Contraception, 79*(4), 243–246. doi:10.1016/j.contraception.2008.12.004

Goicolea, I., Wulff, M., San Sebastian, M., & Öhman, A. (2010). Adolescent pregnancies and girls' sexual and reproductive rights in the amazon basin of Ecuador: An analysis of providers' and policy makers' discourses. *BMC International Health and Human Rights, 10*(12), doi:10.1186/1472-698X-10-12

Grant, M. J., & Hallman, K. K. (2006). Pregnancy-related school dropout and prior school performance in KwaZulu-Natal, South Africa. *Studies in Family Planning, 39*(4), 369–382. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/19248721

Haberland, N., & Rogow, D. (2015). Sexuality education: Emerging trends in evidence and practice. *Journal of Adolescent Health, 56*(1), S15–S21.

Hudelson, C., & Cluver, L. (2015). Factors associated with adherence to antiretroviral therapy among adolescents living with HIV/AIDS in low- and middle-income countries: A systematic review. *AIDS Care, 27*(7), 805–816. doi:10.1080/09540121.2015.1011073

Kantor, L. M., Santelli, J. S., Teitler, J., & Balmer, R. (2008). Abstinence-only policies and programs: An overview. *Sexuality Research and Social Policy, 5*(3), 6–17. Retrieved from http://link.springer.com/10.1525/srsp.2008.5.3.6

Kelly, D. M. (2000). *Pregnant with meaning: Teen mothers and the politics of inclusive schooling*. New York: Peter Lang.

Kennedy, E., Gray, N., Azzopardi, P., & Creati, M. (2011). Adolescent fertility and family planning in East Asia and the Pacific: A review of DHS reports. *Reproductive Health, 8*(1), 11. doi:10.1186/1742-4755-8-11

Kirby, D., Short, L., Collins, J., Rugg, D., Kolbe, L., Howard, M., …, Zabin, L. S. (2011). School-based programs to reduce sexual risk behaviors: A review of effectiveness. *Public Health Reports (Washington, D. C. : 1974), 109*(3), 339–360. Retrieved from http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1403498&tool=pmcentrez&rendertype=abstract

Kohler, P. K., Manhart, L. E., & Lafferty, W. E. (2008). Abstinence-only and comprehensive sex education and the initiation of sexual activity and teen pregnancy. *Journal of Adolescent Health, 42*, 344–351. doi:10.1016/j.jadohealth.2007.08.026

Kossler, K., Kuroki, L. M., Allsworth, J. E., Secura, G. M., Roehl, K. A., & Peipert, J. F. (2011). Perceived racial, socioeconomic and gender discrimination and its impact on contraceptive choice. *Contraception, 84*(3), 273–279. doi:10.1016/j.contraception.2011.01.004

Lall, P., Lim, S. H., Khairuddin, N., & Kamarulzaman, A. (2015). Review: An urgent need for research on factors impacting adherence to and retention in care among HIV-positive youth and adolescents from key populations. *Journal of the International AIDS Society, 18*(2 Suppl 1), 19393. doi:10.7448/IAS.18.2.19393

Lucke, J. C., & Hall, W. D. (2012). Under what conditions is it ethical to offer incentives to encourage drug-using women to use long-acting forms of contraception? *Addiction, 107*(i), 1036–1041. doi:10.1111/j.1360-0443.2011.03699.x

Macleod, C. (2011). *'Adolescence', pregnancy and abortion: Constructing a threat of degeneration*. London: Routledge.

Macleod, C., Sigcau, N., & Luwaca, P. (2012). Culture as a discursive resource opposing legal abortion. *Critical Public Health, 21*(2), 237–245.

Macleod, C., & Vincent, L. (2014). Introducing a critical pedagogy of sexual and reproductive citizenship: Extending the 'framework of thick desire'. In K. Quinlivan, M. Rasmussen, & L. Allen (Eds.), *Interrogating the politics of pleasure in sexuality education: Pleasure bound* (pp. 199–236). London: Routledge.

MacPhail, C., & Campbell, C. (2001). "I think condoms are good but, aai, I hate those things": Condom use among adolescents and young people in a Southern African township. *Social Science & Medicine (1982), 52*(11), 1613–1627. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11327136

Makiwane, M., Udjo, E., Richter, L., & Desmond, C. (2006). *Is the child support grant associated with an increase in teenage fertility in South Africa? Evidence from national surveys and administrative data*. Pretoria: HSRC.

Mavedzenge, S. N., Luecke, E., & Ross, D. A. (2014). Effective approaches for programming to reduce adolescent vulnerability to HIV infection, HIV risk, and HIV-related morbidity and mortality: A systematic review of systematic reviews. *Journal of Acquired Immune Deficiency Syndromes, 66*(Suppl 2), S154–S169. doi:10.1097/QAI.0000000000000178

Moran, J. P. (2000). *Teaching sex: The shaping of adolescence*. Cambridge, Massachusetts: Harvard University Press.

Nath, A., & Garg, S. (2008). Adolescent friendly health services in India: A need of the hour. *Indian Journal of Medical Sciences, 62*(11), 465.

Otoide, V. O., Oronsaye, F., & Okonofua, F. E. (2001). Why Nigerian adolescents seek abortion rather than contraception: Evidence from focus-group discussions. *International Family Planning Perspectives, 27*(2), 77–81.

Pettifor, A., MacPhail, C., Nguyen, N., & Rosenberg, M. (2012). Can money prevent the spread of HIV? A review of cash payments for HIV prevention. *AIDS and Behavior, 16*(7), 1729–1738. doi:10.1007/s10461-012-0240-z

Rodman, H. (1991). Should parental involvement be required for minors' abortion? *Family Relations, 40* (2), 155–160.

Russo, N. F., & Steinberg, J. R. (2012). *Contraception and abortion: Critical tools for achieving reproductive justice* (pp. 145–171). Reproductive justice: A global concern.

Sadler, L. S., Swartz, M. K., Ryan-Krause, P., Seitz, V., Meadows-Oliver, M., Grey, M., & Clemmens, D. A. (2007). Promising outcomes in teen mothers enrolled in a school-based parent support program and child care center. *Journal of School Health*, *77*, 121–130.

Sadowski, M. (2012). From adolescent boys to queer young men: Support for and silencing of queer voice in schools, families, and communities. *Thymos: Journal of Boyhood Studies, 6*(1), 76–96. doi:10.3149/thy.0601.76

Santelli, J., Ott, M., Lyon, M., Rogers, J., Summers, D., & Schleifer, R. (2006). Abstinence and abstinence-only education: A review of U.S. policies and programs. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 38*(1), 72–81. doi:10.1016/j.jadohealth.2005.10.006

Shah, I. H., & Åhman, E. (2012). Unsafe abortion differentials in 2008 by age and developing country region: High burden among young women. *Reproductive Health Matters, 20*(39), 169–173. doi:10.1016/S0968-8080(12)39598-0

Shisana, O., Rehle, T., Simbayi, L., Onoya, D., Jooste, S., Zungu, N., et al. (2014). *South African national HIV prevalence, incidence and behaviour survey, 2012*. Pretoria: Human Sciences Research Council.

Thorsén, C., Aneblom, G., & Gemzell-Danielsson, K. (2006). Perceptions of contraception, non-protection and induced abortion among a sample of urban Swedish teenage girls: Focus group discussions. *European Journal of Contraception & Reproductive Health Care, 11*(4), 302–309.

Tolaymat, L. L., & Kaunitz, A. M. (2007). Long-acting contraceptives in adolescents. *Current Opinion in Obstetrics and Gynecology, 19*(5), 453–460.

Tolman, D. L., & McClelland, S. I. (2011). Normative sexuality development in adolescence: A decade in review, 2000–2009. *Journal of Research on Adolescence, 21*(1), 242–255.

Trad, V. (1998). Abortion and pregnant adolescents. *Family in Society: The Journal of Contemporary Human Service*s, (September 1993), 397–409.

Tylee, A., Haller, D. M., Graham, T., Churchill, R., & Sanci, L. A. (2007). Youth-friendly primary-care services: How are we doing and what more needs to be done? *The Lancet, 369*(9572), 1565–1573.

United Nations. (1995). *International conference on population and development, Cairo, September, 1994. Programme of action*. New York, NY: United Nations, Dept. for Economic and Social Information and Policy Analysis.

United Nations. (2012). *Commission on population and development resolution 2012/1 adolescents and youth, report on the forty-fifth session.* UN Doc E/2012/25, E/CN.9/2012/8 (15 April 2011 and 23–27 April 2012).

Warenius, L. U., Faxelid, E. A., Chishimba, P. E., Musandu, J. O., Ong'any, A. A., & Nissen, E. B. (2006). Nurse-midwives' attitudes towards adolescent sexual and reproductive health needs in Kenya and Zambia. *Reproductive Health Matters, 14*(27), 119–128.

Whatley, M. H. (2011). Goals for sex equitable sexuality education. *Peabody Journal of Education, 64*(4), 59–70.

Whitaker, A. K., Johnson, L. M., Harwood, B., Chiappetta, L., Creinin, M. D., & Gold, M. A. (2008). Adolescent and young adult women's knowledge of and attitudes toward the intrauterine device. *Contraception, 78*, 211–217. doi:10.1016/j.contraception.2008.04.119

Wigginton, B., Harris, M. L., Loxton, D., Herbert, D., & Lucke, J. (2014). The feminisation of contraceptive use: Australian women's accounts of accessing contraception. *Feminism & Psychology, 25*, 178–198. doi:10.1177/0959353514562802

Williamson, N. (2014). *State of the world population 2013. motherhood in childhood: Facing the challenge of adolescent pregnancy.* New York, NY: United Nations Population Fund.

Williamson, L. M., Parkes, A., Wight, D., Petticrew, M., & Hart, G. J. (2009). Limits to modern contraceptive use among young women in developing countries: A systematic review of qualitative research. *Reproductive Health, 6*, 3. doi:10.1186/1742-4755-6-3

Wilson, S. N. (2011). Sexuality education: Our current status, and an agenda for 2010. *Family Planning Perspectives, 32*(5), 252–254. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11030263

Winner, B., Peipert, J. F., Zhao, Q., Buckel, C., Madden, T., Allsworth, J. E., et al. (2012). Effectiveness of long-acting reversible contraception. *The New England Journal of Medicine, 366*, 1998–2007.

World Health Organization. (2007). *Adolescent pregnancy—Unmet needs and undone deeds*. Geneva: World Health Organisation.

World Health Organisation. (2011). *Preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries*. Geneva: World Health Organisation.

Yen, S., Saah, T., & Hillard, P. J. A. (2010). IUDs and adolescents—An under-utilized opportunity for pregnancy prevention. *Journal of Pediatric and Adolescent Gynecology, 23*(3), 123–128. doi:10.1016/j.jpag.2009.09.004

Prevention of Sexually Transmitted Infections Among Adolescents

10

Sanyukta Mathur, Margo Mullinax and John S. Santelli

Introduction

Sexually transmitted infections (STIs), including human immunodeficiency virus (HIV) infection, can have profound impacts on adolescent sexual and reproductive health. While adolescents are a quarter of the sexually active population, they represent nearly half of all new STI cases globally (Da Ros and Da Silva Schmitt 2008). According to the World Health Organization (WHO) estimates, the highest prevalence of STIs is among young adults aged 20–24 years, and the second highest is among 15- to 19-year-olds (Dehne and Riedner 2005).

STIs have considerable impact on the morbidity and mortality for infected individual, but also their partners and children. For example, untreated chlamydial infections can lead to pelvic inflammatory disease (PID), chronic pain, and infertility among women; untreated syphilis during pregnancy can lead to fetal infection, stillbirth, and congenital anomalies (WHO 2008a). Approximately 70 % of all cervical cancer cases are caused by two strains of the human papilloma virus (HPV) (Munoz et al. 2003). HPV is also is the cause of the majority of anal cancers, 40 % of vulvar cancers, and variable proportions of penile, vaginal, ureteral, and neck cancers (Saslow et al. 2007). HIV/AIDS is the fifth leading cause of disease burden in the world and a leading cause of death in the Africa region (Mathers et al. 2008). Further, STI treatment and management consumes a substantial portion of national and global health resources. In the USA, for example, nearly 20 million new infections occur each year, about half are among 15- to 24-year-olds, and the annual cost to the US healthcare system is estimated at USD 16 billion in medical costs (CDC 2013). In South Africa, almost a third of all deaths and over 5 million disability-adjusted life years are attributed to STIs, primarily HIV infection (Johnson et al. 2007). Disability-adjusted life year is a health gap measure. It combines information on the impact of premature death and of disability and other non-fatal health outcomes.

A complex interplay of biological, cognitive, behavioral, sociocultural, and ecological factors put young people at risk of STIs. This chapter discusses the global spread of STIs, the pathogens, symptoms, and health consequences of select STIs, social and behavioral determinants of STIs; and it describes key public health

S. Mathur (✉) · J.S. Santelli
Heilbrunn Department of Population and Family Health, Columbia University Mailman School of Public Health, 60 Haven Ave, B-2, New York, NY 10032, USA
e-mail: sm2892@cumc.columbia.edu

M. Mullinax
HIV Center for Clinical and Behavioral Studies, Division of Gender, Sexuality, and Health, Columbia University and New York State Psychiatric Institute, 1051 Riverside Drive, Unit 15, New York, NY 10032, USA

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_10

approaches aimed at reducing the burden of STIs among adolescents.

Global Epidemiology of STIs in Adolescents

The incidence, prevalence, and population distribution of STIs are highly complex and dynamic. The population-level epidemic of each STI differs depending on a variety of demographic, sexual, behavioral, economic, and structural forces (Aral and Holmes 2008). Compiling globally comparable data on STI prevalence and incidence is hampered by the complexity and limitation of the current data collection systems: The WHO estimates that over a million people acquire a STI every day (WHO 2013). According to WHO estimates, there were close to 500 million new cases of one of four curable STIs—chlamydia, gonorrhea, syphilis, and trichomoniasis—among 15- to 49-year-olds in major geographic regions of the world in 2008, an 11 % increase from estimates for 2005 (WHO 2012). Dramatic increases in gonorrhea estimates in all regions of the world apart from Europe and increase in trichomoniasis among men and women in the Americas contributed in large part to the increased STI incidence rates between 2005 and 2008 (WHO 2012). Using available data, Fig. 10.1 presents WHO estimates of STI prevalence among 15- to 49-year-olds in major regions of the world, by sex and by type of STI (WHO 2012). Overall, these estimates find that women are more likely to be living with STIs; the male-to-female ratio for these four STIs was 1:14 (WHO 2012). For instance, prevalence of trichomoniasis is much higher among females than males in all regions of the world, and the highest prevalence is among women in Africa and the Americas. Rates of syphilis are similar among men and women in the Africa region and much higher than in other regions of the world.

Among young people specifically, studies show low awareness of STIs and a heavy disease burden. Some 58 % of adolescents in Sri Lanka, 29 % in India, and only 4 % in Timor-Leste were aware of STIs. In Bangladesh, for instance, more than half of the people who sought STI treatment at formal facilities were young people (WHO 2011). Another study in Mongolia among antenatal clinic attendees in 2002 found that a third of

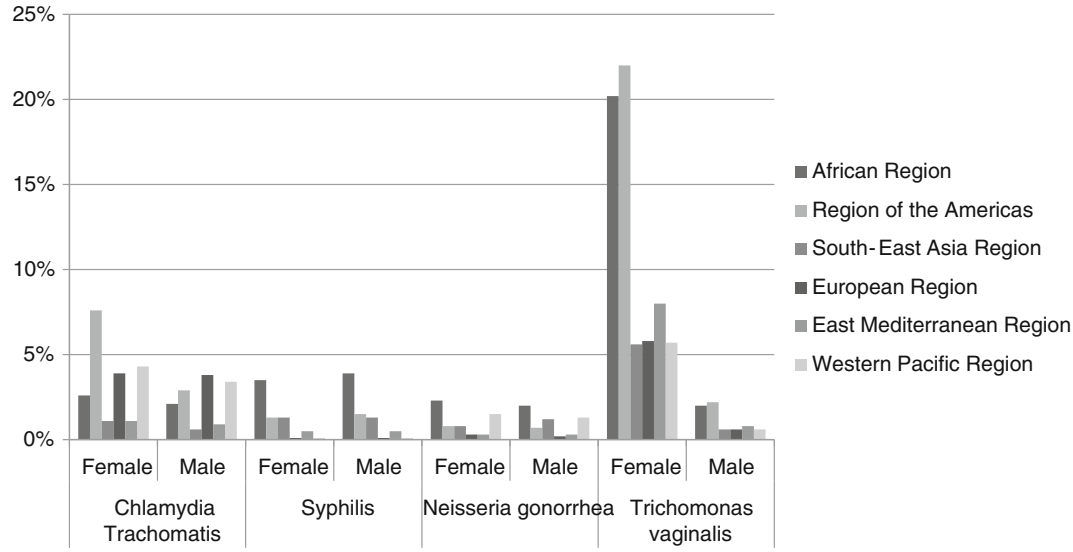


Fig. 10.1 STI prevalence among 15- to 49-year-olds, by sex and region. *Source* WHO (2012).

the women tested for STIs, with higher rates among young women compared to adult women (WHO 2008b).

The major challenge in assessing the global impact of STIs is the incomplete reporting of STI data. There are four interrelated challenges, some universal and some specific to adolescent statistics, in examining the prevalence and incidence of STIs among adolescents.

- First, STI data collection systems around the globe are highly varied and the data heterogeneous (Da Ros and Da Silva Schmitt 2008). STI data from each setting could be collected from a variety of sources including mandated reporting of specific STIs (particularly in developed nations), population-based surveys, sentinel clinics, mortality reporting systems, or small special studies. However, these data are not often well linked and may not use consistent case definitions (WHO 2014b). Except for recent efforts at collecting HIV biomarker data from population-based samples, the majority of the STI statistics are compiled using a collection of healthcare provider reporting systems, sentinel networks of selected facilities like antenatal care clinics, laboratories, or STI clinics (Da Ros and Da Silva Schmitt 2008; Panchaud et al. 2000). Data collection from beyond sentinel sites would require testing for each STI in large and representative population samples. Such efforts are costly, and thus, no global system of surveillance is yet in place.
- Second, underreporting and overrepresentation is a serious concern with current STI estimates. For a variety of reasons, women are more likely to be screened for STIs compared to men; this might explain much of sex differences in reported rates. Some data collection mechanisms, such as syphilis testing at antenatal care sites, produce serious underreporting overall or among specific groups, such as men, who do not visit antenatal care sites.
- Third, STIs are often asymptomatic, that is, individuals may be infected without exhibiting any symptoms. The asymptomatic nature of many STIs means that individuals may not report the illness or seek care, making it harder to document their prevalence. Further, since many STIs are particularly asymptomatic for women, data collection based on self-reports is often biased.
- Fourth, age-disaggregated STI data collection and synthesis are challenging. The variety of data collection systems and contexts also means that age-disaggregated data for 15- to 19-year-olds may not be collected and available. The USA and the Nordic countries have some of the most comprehensive age-specific data on STIs. The US Centers for Disease Control and Prevention, for instance, collects STI data in a variety of ways, including compiling data reported to state and local health departments and conducting population-based surveys to examine community prevalence of certain STIs such as herpes simplex virus (HSV), HIV. The most recent surveillance data from the USA (see Fig. 10.2) highlight higher rates of reported STI among adolescents (15- to 19-year-olds) and young adults (2- to 24-year-olds) compared to adults in the USA (CDC 2014a). While these data are useful and demonstrates age patterns of particular STIs, it is not without its limitations. For instance, the low rates of chlamydia among young men may be an artifact of chlamydia testing and screening that prioritizes women.

HIV/AIDS

HIV is a critically important STI; globally the predominant mode of HIV transmission is sexual (WHO 2007). Young people aged 10–24 years represent approximately 15 % of all people living with HIV, including an estimated 4.5 million youth (aged 15–24 years) and 2.1 million adolescents (aged 10–19 years) living with HIV by the end of 2012 (UNAIDS 2013a). The HIV pandemic has been particularly burdensome to young adults; currently, youth aged 15–24 account for 39 % of new HIV infections in people aged 15 and older. These estimates include both

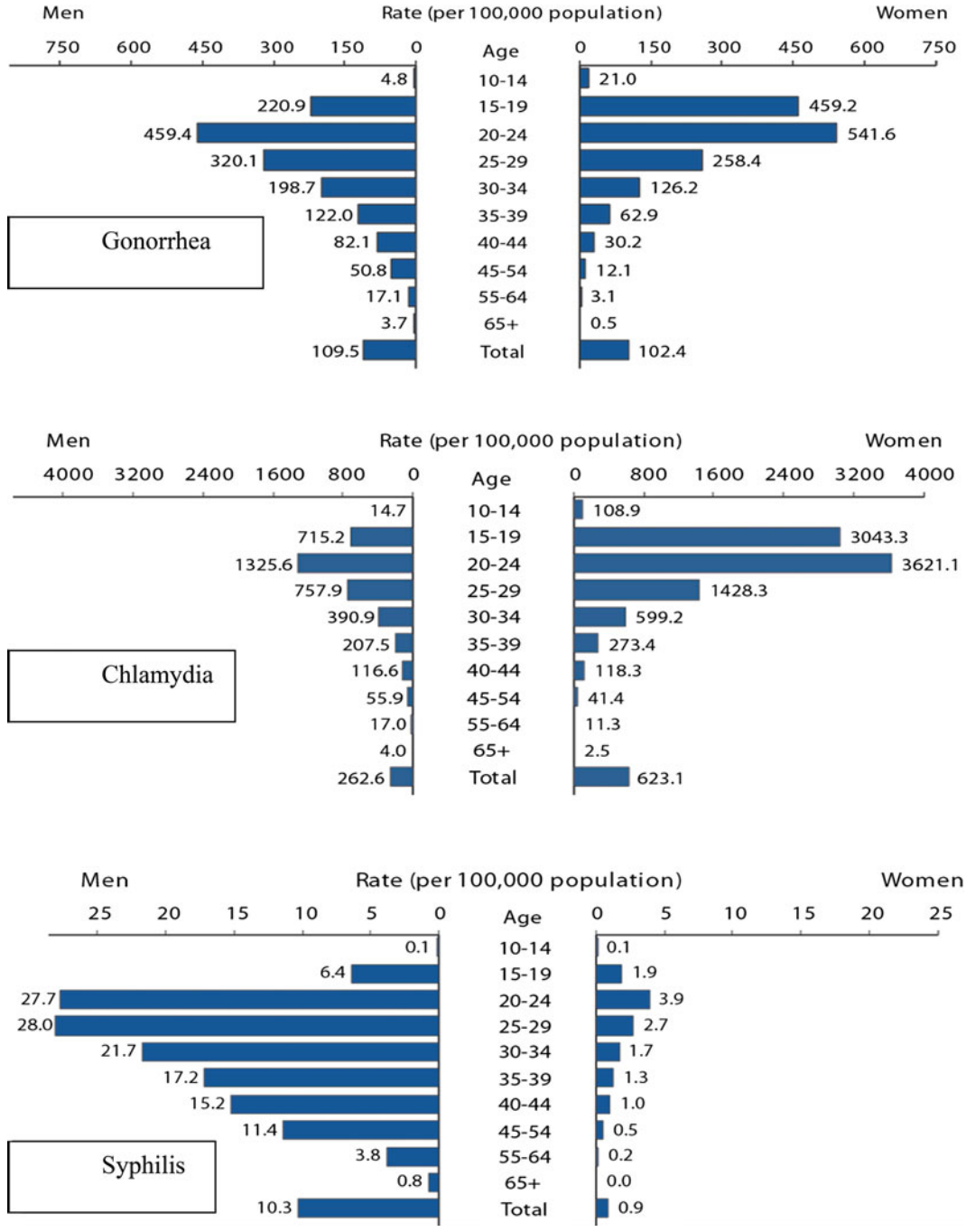


Fig. 10.2 Rates of reported STIs, by age and sex, USA, 2013. *Source* Centers for Disease Control and Prevention. Sexually Transmitted Disease Surveillance 2013. Atlanta: US Department of Health and Human Services; 2014

young people who acquired HIV thru mother-to-child transmission (e.g., perinatally) and young people who acquired HIV behaviorally (e.g., unprotected sexual intercourse). HIV continues to be one of the leading causes of death among young people globally. Between 2005 and 2012, HIV-related deaths among adolescents doubled, while the global number of HIV-related

deaths fell by a third (UNAIDS 2013a). In 2012, 61,000 10- to 14-year-olds, 46,000 15- to 19-year-olds, and 48,000 20- to 24-year-olds succumbed to AIDS-related deaths globally (UNAIDS 2013b).

Figure 10.3 highlights stark regional variations in HIV prevalence (UNAIDS 2013a). Young people in sub-Saharan Africa bear the highest burden of disease with a prevalence of 2.5 % among 15- to 24-year-old women and 1.2 % among 15- to 24-year-old men, compared to 0.5 and 0.3 %, respectively, among youth in the Caribbean. Eastern Europe and Central Asia along with Middle East and North Africa show growing epidemics among adolescents since the 2000s (Kasedde et al. 2013). Countries with the highest HIV prevalence have a sex disparity in HIV prevalence among young people (Idele et al. 2014). Approximately 60 % of all 10- to 19-year-olds living with HIV are girls, the vast majority of whom live in contexts with generalized epidemics fueled by unprotected heterosexual intercourse (Kasedde et al. 2013). High HIV prevalence among adolescent girls is a reflection of complex and often inadequate social, economic, educational, familial, and legal support for girls. Pervasive gender inequality, orphanhood, low socioeconomic status, early sexual debut, age disparate sexual relationships, and biological vulnerability are just some of the factors that perpetuate the epidemic among adolescent girls (Kasedde et al. 2013; Underwood et al. 2011). In concentrated epidemics on the other hand, young men who have sex with men and injecting drug users have the highest rates.

Finally, young people who were infected with HIV as children are a unique subpopulation. According to UNAIDS (2013a) estimates, in 2012, 260,000 children acquired HIV in low- and middle-income countries. In some countries with generalized HIV epidemics, like Chad, Ethiopia, or Nigeria, less than 50 % of pregnant women living with HIV have access to HIV medications during pregnancy for prevention of new HIV infections (UNAIDS 2013a).

Key "at-risk" Populations

Further embedded within these regional variations is significantly higher prevalence among key populations who have higher prevalence of HIV and STIs than the general population. In part, these "at-risk" populations usually live,

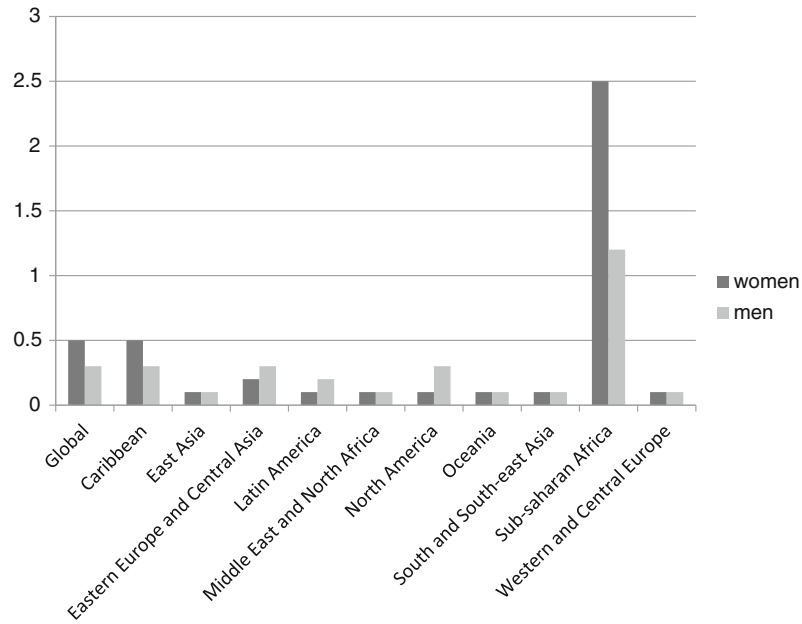


Fig. 10.3 HIV prevalence among 15- to 24-year-olds. *Source* UNAIDS (2013a)

work, and learn in conditions that contribute to or may predispose them to poor health. The higher rates of STIs among at-risk populations may also reflect their higher engagement in risky behaviors. Among adolescents and youth, this includes sex workers, men who have sex with men, and injecting drug users. Additionally, transgender adolescents, adolescents in detention and incarceration, and young people living in conflict or crisis situations are further at risk of HIV. Data limitations keep STI and HIV epidemics hidden among the most vulnerable youth populations to a large extent.

Sex Workers

HIV and STI epidemics have a profound effect on male, female, and transgender sex workers. While "sex work—defined here as the exchange of sex for money—and the structure of sex work vary substantially around the world—the heightened risk for HIV acquisition and transmission among sex workers operates through a similar variety of behavioral, biological, and structural risks" (Baral et al. 2012). Though age-disaggregated data on young people engaged in sex work remains scarce, a meta-analysis conducted by Baral et al. (2012) finds HIV prevalence of 11.8 % among sex workers in all regions of the world, with highest prevalence in sub-Saharan Africa, Eastern Europe, Latin America, the Caribbean, and Asia. Studies show that due to a variety of factors including biological vulnerability and heightened vulnerability to violence, adolescents engaged in sex work face heighted risk of HIV and STI infections (Silverman 2011; Zhang et al. 2012).

Men Who Have Sex with Men

Recent analysis of modes of HIV transmission has found that men who have sex with men (MSM) are at increased risk of HIV. Median HIV prevalence among MSM is greater than 1 % in all regions of the world (UNAIDS 2013a). MSM in low- and middle-income countries have a greater risk of being infected with HIV compared to the general population in the Americas, Asia, and Africa (Baral et al. 2007). While global age-disaggregated data on MSM are rare, country case studies highlight the increased risk of HIV and STIs among young MSM (Idele et al. 2014). For instance, a study examining HIV prevalence among MSM in Jamaica found that one-third of the men enrolled in the study were HIV positive and 60 % of them were young men under the age of 25 (Figueroa et al. 2013). Sexual practices, such as being the receptive partner during anal sex, coinfections with STIs, and being socially vulnerable (e.g., homeless or having experienced violence), increased the risk of HIV among MSM in Jamaica (Figueroa et al. 2013). Most young men in this study had not disclosed their HIV status to their partner and were not comfortable disclosing to anyone (Figueroa et al. 2013). In part, MSM hesitation to disclose HIV status or seek care emerges from social and criminal sanctions against same-sex relations. Some 76 nations have laws that criminalize same-sex relations; among these, some jurisdictions allow the death penalty (UNAIDS 2013a). Such punitive laws and other forms of discrimination regarding same-sex sexual relations create an environment that perpetuates homophobia and related stigma, act as a social deterrent to seeking HIV or STI services, and continue to engender high risk among MSM.

Injecting Drug Users (IUDs)

HIV and STI prevalence is also higher among adolescents who inject drugs. Certain STIs (HIV, hepatitis B, and syphilis) may also be spread by blood and blood exchange during the injection of drugs. Drug use might also enable engagement in risky sexual behaviors. In the Russian Federation, for example, while the national prevalence of HIV was approximately 1 % in 2012, the HIV prevalence among injecting drug users under age 25 was estimated at 25 % (Idele et al. 2014). Though adolescents are less likely to be injecting drug users, the risks are extremely high for those

who do inject. Similar to laws criminalizing same-sex relations, punitive drug policies—such as restrictions on drug substitution or needle exchange syringe programs—prevent or deter many people who inject drugs from the services they need (UNAIDS 2013a).

Pathogens, Symptoms, and Health Consequences of STIs

More than 35 different types of bacterial, viral, and parasitic pathogens can be transmitted sexually (Holmes et al. 2008). Common bacterial and protozoal STIs include gonorrhea, chlamydia, syphilis, and trichomoniasis. Common viral pathogens include hepatitis B virus, HIV, HPV, and HSV (Holmes et al. 2008; Mabey 2010). Table 10.1 includes summary information on the symptoms and health consequences of these STIs.

STI symptoms depend on specific pathogens but commonly include vaginal or urethral discharge (e.g., chlamydia, trichomoniasis, gonorrhea); sores on genitals, rectum or mouth (syphilis, HSV); and pain in the mouth, genitals, or abdomen. HIV attacks the human immune system and gives rise to a host of opportunistic infections and cancers. In the case of HIV, such opportunistic infections and cancers may not develop until about a decade after initial infection. Oftentimes, the initial symptoms are nonspecific and present as a flu-like illness. The most challenging element for STI treatment and control is the often asymptomatic nature of many STIs.

Left untreated STIs can cause serious complications and health consequences affecting the sexual and reproductive health of men and women over their lifetime. Chlamydia and gonorrhea in women can cause PID,[1] when the infection spreads from the cervix to the uterus and the fallopian tubes. PID is a major risk factor for ectopic pregnancy, infertility, and chronic pelvic pain. Syphilis during pregnancy can cause miscarriage, stillbirth, or premature delivery; and advanced stage syphilis (often called tertiary syphilis) can cause long-term complications such as negative effects to the brain, nerves, eyes, hear, liver, bones, joints, and blood vessels. Hepatitis B causes acute infection of the liver and may lead to chronic infection, progressive damage to the liver, and liver cancer. There are over 40 different types of HPV, and it is possible to get more than one type of HPV. The most common strains of HPV can cause genital warts and cervical, penile, anal, and oropharyngeal cancer. HIV causes AIDS, essentially damaging the immune system and resulting in myriad of problems.

STIs can be transmitted via contact with semen, vaginal secretions, and other body fluids and skin contact during vaginal, oral, or anal sex with a person who is infected. Hepatitis B, for instance, a virus that is 50–100 times more infectious than HIV, can be passed through several mechanisms including the exchange of semen, vaginal fluids, and blood during birth, sex with an infected partner, or sharing needles and other sharp objects, or through direct contact with blood or open sore of an infected person. HIV and syphilis can also be transmitted vertically, from mother to child (in utero, during delivery, or during the postpartum period). Casual interactions, like kissing or exchange of saliva with an infected person, can also spread HSV. HPV can also be spread by skin-to-skin contact, and symptoms do not have to be apparent for HPV to be passed along to a partner; so many infected individuals do not realize their infection status and may pass along this virus to their partner(s).

Factors Influencing STI Transmission Among Adolescents

Ranges of proximal and distal factors influence STI risk among young people. STI acquisition and its spread are influenced by pathogen-specific factors as detailed above, but also by

[1]Although gonorrhea and chlamydia are typically associated with PID, PID is a polymicrobial infection and can occur even then the STD screen is negative for gonorrhea and chlamydia, but patient meets other clinical criteria.

Table 10.1 Pathogens, symptoms, and health consequences of eight common STIs

STI	Pathogen	Symptoms	Health consequences
Bacterial infections			
Chlamydia	*Chlamydia trachomatis*	**Women**: 85 % asymptomatic. Cervicitis (infection of the cervix), endometritis (inflammation of uterine lining), salpingitis (fallopian tube inflammation) **Men**: 40 % asymptomatic. Urethral discharge, epididymitis (inflammation of the tube that connects the testicle with the vas deferens), orchitis (inflammation of the testicles) **Both sexes**: Proctitis (inflammation of the rectum), pharyngitis (inflammation of the throat), urethritis (urethral pain—the tube that carries urine from the bladder to outside the body), arthritis (joint pain)	**Women**: If untreated, for ~40 % of women, the infection can spread to uterus and fallopian tubes causing pelvic inflammatory disease (PID). PID complications include formation of scar tissue blocking fallopian tubes, ectopic pregnancy (pregnancy outside the womb), or tubo-ovarian abscess (abscess formation around the fallopian tube and ovaries; ruptures can lead to sepsis). Other consequences include infertility, perihepatitis (inflammation of the liver coating), and pre-term rupture of membranes during pregnancy **Men**: Infection sometimes spreads to the tube that carries sperm from the testicles, causing pain and fever and infertility **Infants**: Conjunctivitis, pneumonia
Gonorrhea	*Neisseria gonorrhoeae*	**Women** and **Men**: Symptoms similar to *Chlamydia*	**Women** and **Men**: See *Chlamydia* **Infants**: See *Chlamydia.* Also causes corneal scarring and blindness
Syphilis	*Treponema pallidum*	**Both sexes**: Open sore or ulcer on genitals, mouth, or rectum (primary ulcer/chancre is typically painless) with local lymph node swelling (adenopathy), skin rashes, genital warts (secondary syphilis), and other organ complications including the brain, nerves, eyes, hear, liver, bones, joints, and blood vessels (tertiary syphilis)	**Both sexes**: Increases risk of HIV transmission by three fold **Women**: Miscarriage, stillbirth, and premature delivery **Infants**: Congenital syphilis
Protozoal infection			
Trichomoniasis	*Trichomonas vaginalis*	**Women**: 80 % asymptomatic. vaginosis with profuse, frothy vaginal discharge **Men**: Often asymptomatic. Urethral discharge	**Women**: Pre-term birth **Infants**: Low-birth weight
Viral infections			
Human immunodeficiency virus (HIV)	Human immunodeficiency virus (HIV)	**Both sexes**: The virus attacks the immune system over time. Shortly after infection, some	**Both sexes**: HIV-related illnesses, opportunistic infections like tuberculosis,

(continued)

Table 10.1 (continued)

STI	Pathogen	Symptoms	Health consequences
		people have a brief illness like the flu. Extreme weight loss, fatigue, and fever	acquired immunodeficiency syndrome (AIDS), death **Infants**: HIV
Genital herpes	Herpes simplex virus (HSV)—type 2 and type 1 (less common)	**Both sexes**: Most carriers asymptomatic. Anogenital vesicular lesions and ulcerations (sores). Sores may appear as small, fluid-filled blisters on the genitals, buttocks, or other areas. The sores often are grouped in clusters. Stinging or burning while urinating. Swollen glands, fever, chills, muscle aches, fatigue, and nausea Recurrence after a primary outbreak is usually less severe than the first genital outbreak. Also recurrences are much less frequent for genital HSV-1 than HSV-2	**Both sexes**: Although rare, HSV can cause complications such as encephalitis (inflammation of the brain) and aseptic meningitis (inflammation of the lining of the brain) **Infants**: Neonatal herpes (often fatal)
Genital warts	Human papillomavirus (HPV)	**Women**: Vulval, anal, and cervical warts **Men**: Penile and anal warts	**Women**: Cervical carcinoma, vulval carcinoma, anal carcinoma **Men**: Carcinoma of the penis **Infants**: Laryngeal papilloma (tumors in the larynx)
Viral hepatitis	Hepatitis B virus	**Both sexes**: Most carriers asymptomatic	**Both sexes**: Acute hepatitis, liver cancer, and liver cirrhosis (scarring of liver and poor liver function associated with last stages of liver disease)

Sources WHO (2007,2012)

more proximal individual-level risk behaviors like initiation of sexual intercourse and number of sexual partners, and by more distal determinants like young people's ability to access STI testing and treatment services. STI transmission rates also depend on the probability of exposure to infectious persons, the efficiency of transmission per exposure, and the duration of infectivity (Aral and Holmes 2008).

Exposure to infected persons depends on a range of individual- and population-based factors. These include use of barrier methods, sexual practices, engaging in concurrent partnerships, sexual networks, prevalence of STIs within communities, access to treatment, and vaccination rates (for HPV and hepatitis B) (Mabey 2010). Certain sexual behaviors, such as anal sex, are higher risk than others in terms of increasing susceptibility to STIs. Additional individual-level behaviors like higher numbers of recent and lifetime sex partners, sexual concurrency—multiple and overlapping sexual partnerships, and higher rates of partner change, significantly contribute to STI risk. The sexual and behavioral characteristics of partners, such as partners' sexual concurrency, also influence STI risk. Young women are at higher risk of STIs and HIV and intimate partner violence (IPV). Recent studies show that experience of IPV among young women is associated with concurrent experiences of sexual risk and coercion, and limited condom use (Seth et al. 2013).

Efficiency of transmission includes individual susceptibility, the infectiousness of the pathogen, the concentration of the pathogen shed in sexual fluids, and the natural history of the infection (Aral and Holmes 2008). For instance, a cohort study in rural Uganda demonstrated that the average rate of HIV transmission varied by the duration after seroconversion. The transmission possibility was highest during early (within 2.5 months of seroconversion)- and late-stage infection (6–25 months before the death of the infected partner) compared to prevalent infections (Wawer et al. 2005). Thus, natural history of infections and particularly the timing of high and low levels of infectiousness are important dynamics for disease transmission (Aral and Holmes 2008).

Further, interactions among STI pathogens affect the spread and infectiousness of STIs. Diseases such as syphilis and HSV, which cause genital ulceration, can increase infectivity and susceptibility to HIV (Mabey 2010). STIs, like gonorrhea, which causes inflammation of the cervix or urethra, can increase shedding of HIV in seminal and vaginal secretions. Similarly, HIV increases susceptibility for the acquisition of other STIs (Mabey 2010).

Coupled with the asymptomatic or latent symptoms of many STIs, these factors combine to produce STI risk and fuel their ongoing spread. Table 10.2 summarizes some of the determinants that influence STI acquisition based on WHO's ecological model for adolescent health and development.

Public Health Approaches to Reducing the Burden of STIs Among Adolescents

Given the major burden of STIs on adolescent health and development, public health approaches to mitigating this burden are critical. A variety of individual- and population-based programs and policy approaches have been attempted to address the wide range of determinants that contribute to STI and HIV risk among young people. Classic epidemiological approaches to STI prevention emphasize reducing the

Table 10.2 Determinants of STIs transmission in adolescents

Levels	Determinants
Biology	Pathogen-specific transmission viability Interactions among STI pathogens
Individual	Number of sexual partners Sexual concurrency Type of sexual activity (anal, oral, vaginal) Partner choice Knowledge about STIs, STI screening, and treatments Condom use Ability to negotiation condom use or safer sexual behaviors
Interpersonal	Partner sexual concurrency and multiple partners Partner's STI or HIV status Partner's sexual activity
Community	Stigma around STIs Attitudes around adolescent sexual activity
Organizational	Availability of STI testing and treatments Availability of youth-friendly STI services
Environment	STI prevalence in the community HIV prevalence in the community HIV community-level viral load
Structural	Laws governing access to STI knowledge and care among adolescents Poverty
Macro	Stigma toward at-risk groups (e.g., homophobia)

risk of exposure to STI, reducing the efficiency of transmission, and shortening the duration of infection (Dallabetta et al. 2008). Below we highlight two areas of interventions targeted to prevent and mitigate the impact of STIs and HIV among young people: "primary prevention and STI management" (see Fig. 10.4). While many adult-focused interventions have been successful (e.g., condom use, uptake of HIV treatments, update of voluntary medical male circumcision), more evidence is needed on how to effectively engage youth in STI and HIV prevention efforts (Mavedzenge et al. 2014).

Primary Prevention: STI Avoidance

The major aim of primary prevention is to keep individuals and communities from acquiring STIs and HIV. Primary prevention is a cornerstone of STI and HIV control, particularly in resource poor settings with poor surveillance, diagnostic, and limited treatment options (Dallabetta et al. 2008). Behavior change, structural interventions, and prevention technologies are three major components employed in primary prevention programming.

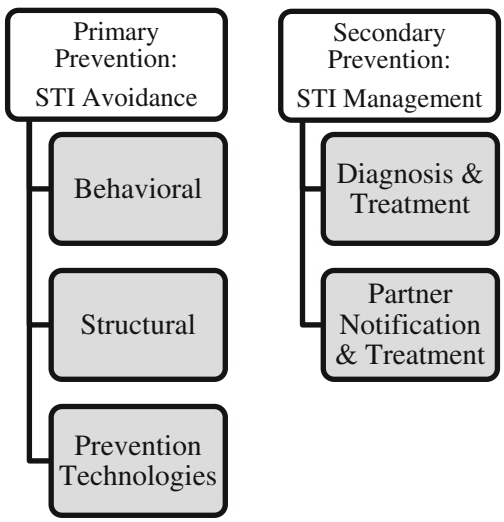


Fig. 10.4 Major public health approaches to STI prevention and management

Behavior Change for Risk Reduction

A major emphasis to date on youth STI prevention has been on individually focused behavior change interventions (McCoy et al. 2009). Often emerging from psychosocial models of behavior change, health information and education programs encourage sexual behavior change and risk avoidance. For example, many young people do not know how to recognize the signs and symptoms of STIs. In such cases, education about STIs is a critical public health approach for STIs. A recent review of evidence on adolescent-focused HIV prevention programs found strong evidence that "in-school interventions and interventions in specific geographically defined communities can positively impact important HIV-related outcomes, such as self-reported sexual risk behaviors" (Mavedzenge et al. 2014).

Promotion of Barrier Methods: Promotion of condom use is an integral component of social and behavioral risk reduction efforts for HIV and STI prevention. Clinical trials have proven the effectiveness of condom use for prevention of pregnancy, STIs, and HIV transmission (UNAIDS 2013a). The public health community continues to promote condom use as the best form of protection again STIs and as prevention from unintended pregnancies for those who are sexually active (Holmes et al. 2004; UNAIDS 2013b; Warner et al. 2006). A recent mathematical modeling study demonstrated that increases in condom use played a significant role in the declines in HIV incidence in South Africa between 2000 and 2008 (Johnson et al. 2012). Another study in Uganda found that consistent use of condoms significantly reduced incidence of HIV, syphilis, and gonorrhea/chlamydia after adjusting for individual-level socio-demographic and behavioral characteristics (Ahmed et al. 2001).

Despite successes, condom use among young people often remains low. A systematic review of literature on condom use errors found the most commonly reported errors to be not using condoms throughout sex, not leaving space at the tip, not squeezing air from the tip, putting the

condom on upside down, not using water-based lubricants, and incorrect withdrawal (Sanders et al. 2012). The same review also looked at condom problems with the most frequently reported as breakage, slippage, leakage, condom-associated erection problems, and difficulties with fit and feel. The three most consistent condom use dislikes, regardless of gender, age, education, and marital status, included: (1) condoms just do not feel right, (2) condoms decrease my sensation; and (3) condoms decrease my partner's sensation (Crosby et al. 2008; Oncale and King 2001). Discomfort associated with condom use has been shown to be associated with breakage, incomplete use, and decreased motivation to use condoms (Crosby et al. 2003). Furthermore, heterosexual young adults are more likely to use condoms for pregnancy prevention than disease prevention (Cooper et al. 1999). Little is known, however, about how adolescents use condoms for pregnancy prevention versus STI prevention. The intersection of disease and pregnancy prevention might more accurately reflect condom use intentions. Condoms remain the most effective tool for HIV and STI prevention during sexual intercourse. Yet, more work is needed to understand the motivations behind condom use, disuse, and consistent use; the predictors for each may be different.

While oral sex carries a lower risk of transmission of STIs, several STIs can still be transmitted through oral sex. One way to help protect from the spread of STI during oral sex is to use a dental dam (CDC 2014b). Dental dams are a square sheet of latex that is placed over the vulva and act as a barrier during oral–vaginal sex. Dental dams are also used as a method of protection during oral–anal sex. Dental dams can be purchased or made by cutting a condom. These types of barrier methods are relatively new and most research shows they remain underutilized the world over.

Partner Risk Reduction: Partner reduction through sexual abstinence, mutual monogamy with an uninfected partner, and reducing the number of sexual partners are often promoted as STI and HIV prevention strategies among young people. In the USA, in recent decades due to political and cultural forces, there has been an emphasis on "abstinence-only" sexual health education (*described in more detail in the chapter on "Adolescent Sexual Health and Sexuality Education"*).

Coates et al. (2008) argue that individually focused behavioral strategies are essential, but not sufficient to reduce HIV (and STI) incidence and need to be designed to approach multiple levels of influence. Largely missing is attention to relationship issues. "Relationship characteristics also play a pivotal role in influencing adolescents' risky behavior and their likelihood of acquiring an STI." (DiClemente et al. 2005). For instance, an examination of partner characteristics and HIV risk from Uganda demonstrated that young women's risk of acquiring HIV increased with partners who were truck drivers (engaged in a highly mobile activity), drank alcohol before sex, and used condoms inconsistently (Mathur et al. 2015). Programs using youth gender empowerment models based on Paolo Freire's theories have been shown to reduce sexual risk behaviors (e.g., Mpondombili Project, Stepping Stones, and IMAGE projects in South Africa) (Harrison et al. 2010). Stepping Stones, an intervention promoting sexual health of youth in South Africa with a focus on tackling distal determinants like the reduction in sexual coercion and IPV, has been shown to have a significant impact in biological outcomes including HIV, HSV-2, and pregnancy incidence (Harrison et al. 2010). Evaluation of Safe Homes and Respect for Everyone (SHARE) Project, an integrated IPV and HIV prevention intervention in Rakai, found lower self-reports of physical and sexual violence in the past year and reduced HIV incidence in the intervention groups. The SHARE project employed an ecological approach and had two aims: community-based mobilization to change attitudes and social norms that contribute to IPV and HIV risk, and a screening and brief intervention to reduce HIV-disclosure-related violence and sexual risk in women seeking HIV counseling and testing (Wagman et al. 2015).

Structural Interventions

The heavy emphasis on health education and risk reduction among youth is due, in part, to the assumption that behavioral determinants are more easily modified compared to structural or environmental determinants that influence HIV risk among young people. However, the daily lives and behaviors of young people are also influenced by structural and environmental determinants (like laws prohibiting adolescent access to reproductive health care) (Cohen et al. 2000). This category of interventions targets mediators of STI and HIV risk in specific contexts that have the potential to alter the prevention environment. For instance, this may include the development of policies to ensure condom use in venues associated with sexual encounters and high-risk behaviors. A review of interventions conducted with sex workers, found combining sexual risk reduction and condom promotion, improved access to STI treatments, coupled with the promotion and enforcement of a 100 % condom use policy at brothels, and empowerment of sex workers, and reduced the prevalence of STIs and HIV (Rojanapithayakorn and Hanenberg 1996; Shahmanesh et al. 2008; Swendeman et al. 2009). Similarly, needle and syringe exchange programs (often tied to drug policies) have demonstrated reduced risk of HIV infection among injecting drug users (Gupta et al. 2008). Other examples are a set of economic empowerment and conditional cash transfer programs aimed at addressing structural issues like access to schooling or poverty.

Cash transfers: Cash payments to improve health outcomes have a long history in development targeted toward alleviating household incomes to increase uptake of health services, but are relatively new in the HIV field (Pettifor et al. 2012). These payments can be unconditional (families or individuals are not required to do anything) or conditional (payments are tied to certain behaviors or activities). Thus, conditional cash transfer (CCT) programs attempt to impact structural antecedents to sexual health like education and poverty. While the program design varies, most programs link cash saving programs as a motivation for schooling attendance. Evidence evaluating CCT programs' effect on STI incidence is mixed and inconclusive. However, in settings where there are significant financial barriers to school attendance and attending school is a protective factor, research indicates that CCT programs have impact on outcomes like HIV incidence (Mavedzenge et al. 2014). In general, smaller payments made more frequently were more effective than the promise of larger payments in the future. In one large CCT program in Mexico, contraceptive use increased during enrollment in the CCT program, as did educational attainment levels (Darney et al. 2013). Another cluster-randomized trial in the Zomba District of Malawi assessed the efficacy of conditional (80 % school attendance) or unconditional cash payments on HIV and HSV-2 prevalence (Baird et al. 2012). The study found that individuals in the intervention group had lower HIV and HSV-2 prevalence. Additionally, girls in the intervention group were also less likely to have engaged in sexual activity, reported lower sexual frequency, and had fewer age-discrepant partnerships compared to girls in the control groups (Baird et al. 2012).

Prevention Technologies

Key biomedical interventions, like vaccines and voluntary medical male circumcision, have been highly effective in disrupting the spread of STIs and HIV.

Vaccines: To date, vaccines have been highly effective at combating infectious diseases. Vaccine initiatives for STIs/HIV can have a global impact on reducing morbidity, mortality, and curtailing disease transmission (Aral and Holmes 2008). Notable advances include highly efficacious vaccines against hepatitis B and HPV (see text box). The WHO estimates that more than 780,000 people die every year due to the consequences of hepatitis B (WHO 2014a). Hepatitis can be prevented, however, with a vaccine that provides greater than 90 % protection to infants, children, an adults immunized before they are exposed to the virus. The WHO passed a global

recommendation to vaccinate against hepatitis B in 1992. It recommends that all infants receive this vaccine, as soon as possible after birth, followed by three or four doses to complete the series during childhood. The complete hepatitis B vaccine series produces protective antibodies that last at least 20 years. In settings where children become chronically infected with hepatitis B, neonatal vaccination has reduced the rate of chronic infection from 8 to 15 % to less than 1 % (WHO 2014a). According to current WHO estimates, 183 nations include the hepatitis B as part of their vaccination schedules for infants. As a result, "79 % of children received the hepatitis B vaccine" (WHO 2014a).

Similarly, encouraging developments have taken place with the vaccine to prevent certain strains of HPV (see text box). And, recent developments are underway on a HIV vaccine as well. An AIDS vaccine trail in Thailand led to a 31 % reduction in HIV incidence among recipients (Rerks-Ngarm et al. 2009). While this AIDS vaccine trial demonstrated modest effects and did not affect viral load of patients with HIV, it outlined the biomedical possibilities of a "vaccine regimen that may reduce the risk of HIV infection in a community-based population with largely heterosexual risk" (Rerks-Ngarm et al. 2009).

Genital Human Papillomavirus (HPV) Vaccine

Several prophylactic HPV vaccines have been developed. Gardasil (Merck & Co., Inc.) protects against HPV types 6, 11, 16, and 18, which cause 90 % of genital warts. Cervarix (GlaxoSmithKline) protects against types 16 and 18 (Saslow et al. 2007), which cause 70 % of cervical cancers in the world (Agosti and Goldie 2007). Both vaccines are intended to be administered if possible before the onset of sexual activity (i.e., before first exposure to HPV infection) (WHO 2014c). Gardasil has also been shown to protect against cancers of the anus, vagina, and vulva. Only Cervarix is licensed in use for males, while both vaccines are licensed for use in females. Vaccine development continues and the US Food and Drug Administration has just approved a vaccine, which covers five additional types of HPV (31, 33, 45, 52 and 58), which cause an additional 20 % of cervical cancers. This vaccine is expected to be widely available in the USA by the end of 2015.

By August 2014, 58 countries had introduced HPV vaccine in their national immunization program for girls and in some countries also for boys (WHO 2014c). Most of the countries that have introduced HPV vaccine are from the WHO regions of the Americas, Europe, and the Western Pacific Region; only a few developing countries have adopted this vaccine (Hopkins and Wood 2013). Nevertheless, the WHO recommends that inclusion of HPV vaccines as a comprehensive strategy to prevent cervical cancers and HPV-related diseases. Although this vaccine has proven to be effective, the greatest barriers to introducing the HPV vaccine are the price of the vaccine itself and the costs of implementing a program to reach adolescents with this vaccine. In 2013, the GAVI Alliance, which provides technical and financial assistance for vaccines to countries that cannot afford such services, began providing support for the introduction of the HPV vaccine in developing countries around the world (Graham and Mishra 2011).

Voluntary Medical Male Circumcision (*VMMC*): VMMC is the partial or complete surgical removal of the foreskin of the penis. While male circumcision has been practiced for centuries due to religious or cultural beliefs, it has received greater attention in public health in the last decade as a method of preventing STI and HIV. Circumcised men appear to be at lower risk for syphilis, chancroid, and HSV-2. Recently, male circumcision has been shown to

reduce female-to-male transmission of HIV during heterosexual sex. Prior to 2005, an abundance of observational studies showed a protective effect of male circumcision with regard to HIV acquisition among heterosexual men (Siegfried et al. 2009). In the last decade, however, the publication of three randomized clinical trials in South Africa (Auvert et al. 2005), Uganda (Gray et al. 2007), and Kenya (Bailey et al. 2007) showed substantial reduction in HIV acquisition among men engaged in heterosexual sex. All three trials were prematurely terminated after they showed 38 and 66 % reduction in HIV acquisition over 24 months after circumcision. However, a trial of circumcision among HIV-infected men did not reduce HIV transmission to female partners and found that transmission might be accelerated if sexual activity was resumed prematurely after male circumcision before complete wound healing (Wawer et al. 2009). Additional studies in Uganda also demonstrate that over 98 % of circumcised men (aged 15–49 years) did not experience any negative effects on their sexual desire, function, or satisfaction following circumcision (Kigozi et al. 2008), and there is a high acceptability of male circumcision among adult men and female partners (Kigozi et al. 2008, 2009; Ssekubugu et al. 2013). The WHO currently recommends promoting VMMC in countries with generalized HIV epidemics. In the 14 VMMC scale-up priority countries in Africa (Botswana, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Uganda, the United Republic of Tanzania, Zambia, and Zimbabwe), outreach to adolescents aged 10–19 years of age ranged from 34 to 55 % (Njeuhmeli et al. 2014).

Despite these major successes, a few challenges remain in circumcision program implementation; these include religious or cultural beliefs that do not support male circumcision, lack of awareness among community members about the benefits of male circumcision, limited training of healthcare personnel, and limited availability of surgical materials (Siegfried et al. 2009). Among men from a non-circumcising community in Kenya, the major barriers to accepting male circumcision included cultural identification, fear of pain, excessive bleeding, and cost (Bailey et al. 2002).

In the rural southwestern district of Rakai, Uganda, for example, prior to the clinical trials, the prevalence of circumcision was 16.5 % and was practiced almost exclusively among Muslims (Gray et al. 2000; Ssekubugu et al. 2013). Since the rollout of HIV services in Rakai, the prevalence of circumcision among non-Muslim men has risen to 35 % (Gray 2012), yet the circumcision coverage among young men in this population remains lower than older men (23.2 % among 15- to 24-year-olds compared to 35.2 % in men 25–29 years). To address these challenges, the Rakai Health Sciences Program in Uganda uses a variety of outreach mechanisms —static clinics, surgical camps, and mobile clinics—to reach younger men. Further, they provide a package of interventions, including HIV counseling and testing to identify HIV-positive men and link them to care. The men also receive an HIV prevention package, which includes counseling regarding abstinence, partner reduction, and monogamy, condom provision and instruction, and STI treatment. Preliminary field-based data indicate that these outreach and engagement interventions are having a positive impact on circumcision coverage among young men. Evidence from other settings also confirms that young men are more receptive to VMMC campaigns, when communications emphasize social support and peer influence, when they reach young men through schools with support from teachers and parents, and when they are offered as a part of a package of HIV prevention interventions (Njeuhmeli et al. 2014).

Secondary Prevention: STI Case Management

The second major component in the public health approach to STIs is case management and includes the diagnosis and treatment of infected individuals and their partners to reduce disease morbidity and to prevent reinfection and transmission.

Diagnosis and Treatment

STI and HIV diagnosis programs are critical to the prevention-to-treatment continuum. Limited diagnoses of infections are increasingly recognized as a major problem leading to delayed initiation of treatment and retention into care, in turn leading to prolonged morbidity, premature mortality, and continued transmission (UNAIDS 2013b).

Syndromic management: Provision of effective services to symptomatic STI patients is a key goal of syndromic case management. This secondary prevention platform was endorsed by the WHO in the 1990s and remains the standard of care in resource poor settings due to a limited laboratory infrastructure for screening and testing (Gottlieb et al. 2014). Syndromic management uses genital symptom algorithms for urethral discharge, genital ulcer disease, vaginal discharge, scrotal swelling, and lower abdominal pain to guide treatment without the ready availability of diagnostic tests (Dallabetta et al. 2008). Syndromic management is not a perfect strategy; however, as many STIs are asymptomatic, symptom algorithms need to be adapted for local disease patterns, sexual behaviors, and other health-seeking behaviors. For instance, syndromic management has been effective for urethral discharge and genital ulcer disease syndromes, but poorly for herpes infection or vaginal discharge (Dallabetta et al. 2008). A study at a reproductive health clinic in Tanzania found high burden of STIs among youth, but limited success with syndromic management by gender (Chalamilla et al. 2006). For instance, all males with gonorrhea (more likely to be symptomatic after acquisition) received appropriate syndromic treatment, while only 28 % of women did so due to differences in disease pathogens and clinical manifestations.

Screening and Treatment: As most STIs are asymptomatic but can still lead to detrimental health consequences, standard syndromic management misses the greatest burden of STIs. Screening of high-risk populations and in high prevalence settings is an alternative option for finding asymptomatic infections. There is limited availability of data on STIs among youth in lower and middle-income countries. Syphilis is the only STI, where routine screening of women seeking antenatal care is being attempted globally. As adverse pregnancy outcomes occur in 80 % of women who suffer from active syphilis including stillbirth, perinatal deal, and serious neonatal infections, syphilis screening is seen as a cost-effective intervention even in low-resource settings (Dallabetta et al. 2008). It is estimated that "universal screening of pregnant women for syphilis, and treatment with single-dose benzathine penicillin, could prevent more than 500,000 perinatal deaths per year" (Mabey 2010).

In the USA, a growing focus of STI morbidity prevention in public health is on promoting testing, as exemplified by the CDC's "*Know Yourself. Know your Status*" project. Nonetheless, promotion of STI testing remains limited in success. Based on data from the USA, National Survey of Family Growth, STI screening services are among the least accessed by young women 15–24 years of age (Hall et al. 2011) and only a minority of patients are counseled about STIs and screenings (Tao et al. 2000). Other barriers to testing include never having been offered a test and low perceived risk of an STI, especially in the case of HIV testing (Peralta et al. 2007). Similarly, US college students have been found to avoid seeking screening unless symptomatic and delay seeking treatment when symptoms arise (Barth et al. 2002; Leenaars et al. 1993). Social stigma, in particular, has been linked to refusal or delay in STI screening among youth (Barth et al. 2002). Stigma has been associated with a decreased likelihood of being tested, which is independent of other factors like age and sex (Fortenberry et al. 2002). Likewise, research with young women shows that symptomatic women have been shown to delay care longer than men (Fortenberry 1997; Fortenberry et al. 2002; Lichtenstein 2003).

Access to STI services is a major barrier to youth around the world. As STI screening and treatment are generally provided within health facilities, these services are often inaccessible to youth due to numerous barriers such as high cost, lack of privacy and confidentiality, logistical or

administrative restrictions, or negative attitudes of health workers. This is particularly the case with disenfranchised youth (such as homeless, incarcerated, unemployed, gay and transgender youth, or out of school among others), who are also disproportionately affected by HIV and other STIs (Denno et al. 2012). Additional barriers to testing include inaccurate information about STIs, denial, moral connotations and stigma, fear and anxiety, and viewing the tests as physically uncomfortable (Bauer et al. 2004).

Given the barriers to STI testing among youth, community-based approaches to care might be the most effective way to deliver sexual and reproductive health services. New research and initiatives with youth are targeting increasing access to testing through nonclinical sites. These community-based approaches may include intervention delivery outside of traditional health facilities, for example, in pharmacies, jails, detention centers, on the street, in parks, or community centers (Denno et al. 2012). So far, however, STI screening conducted via community or street outreach appears to yield mixed results, likely dependent on the type of setting. For example, one study in the USA, conducted in the city of San Francisco, investigated the feasibility of street-based screening and treatment for chlamydia and gonorrhea for homeless youth 15–24 years old. The researchers reported particularly high screening and treatment rates (99.5 and 94.1 %, respectively) and moderate partner treatment rates (75 %) among the target population (Auerswald et al. 2006). However, an outreach STI prevention program in Rotterdam, the Netherlands, targeting men and women 15–29 years of age, of non-Dutch ethnicity (in group and street settings and in a vocational training school) found that testing rates for *chlamydia trachomatis* varied significantly by venue. The investigators reported that testing was highest in group settings (80 %), followed by the vocational school (73 %), and lowest in street settings (17 %) (Götz et al. 2006). More recent policies have also allowed a shift to self-testing programs, but empirical research is lacking on their use and impact on youth accessing care and treatment services (Mavedzenge et al. 2013).

Perinatally HIV-Infected Adolescents (PHIVA)

Young people who were infected with HIV as children need to be reached urgently with care and treatment services. While over 90 % of HIV + pregnant women are reached with preventative HIV treatments in high-income countries, only 62 % of HIV + women in low- and middle-income countries have access to prevention services (UNAIDS 2013a). In resource-limited settings, the absence of intensive follow-up after PMTCT means that many PHIVA are unaware of their HIV status and only learn during regular medical check-ups or when experiencing medical distress (Agwu and Fairlie 2013). Many prenatally infected youth only enter HIV care after they are severely immune-compromised. HIV-infected adolescents have to deal with issues of maintaining lifelong adherence to HIV treatments, metabolic complications due to the medications, and the impact of highly toxic medications on their physical and neurocognitive development (Sohn and Hazra 2013). Reaching PHIVA individuals with early diagnosis, care, and treatment is also critical for preventing continued transmission to sexual partners and children born to PHIVA (Kasedde et al. 2013).

Partner Notification and Treatment

Partner notification is another well-established component of STI case management. In this approach, the partners of the infected individual are reached for treatment. Partners of infected individuals (index cases) are generally reached through three mechanisms: (1) notification of partners by the index case, (2) notification of partners by healthcare providers based on information provided by index cases, and (3) a mixed approach whereby index cases refer partners to a clinic where a provider will notify them

(Alam et al. 2010; Dallabetta et al. 2008). Partner notification, like screening and testing, is not a stand-alone strategy, but works best when coupled with efficient treatment and care mechanisms. So far, no single strategy of partner notification has been shown to be more efficient than another; effectiveness varies by local social and structural issues.

In some places, expedited partner therapy is practiced whereby the index case receives either a prescription or the actual medication to give to the exposed partner. The aim of expedited partner therapy strategies is to enhance the patient referral process, speed up the time to treatment for the partner, and reduce the risk of reinfection in the index case (Ferreira et al. 2013). These strategies, however, are not applicable in all settings. In the UK, for example, expedited partner therapy cannot be provided unless the partner also received a clinical assessment before receiving treatment (Ferreira et al. 2013). Other disadvantages include adverse drug reaction, misdiagnosis, missed opportunity for diagnosis of latent infections, and missed opportunity for STI and HIV counseling.

Overall, however, provider-facilitated partner notification has been found to be effective in many developed country settings. A review of partner notification strategies found that index patient-oriented partner notification was preferred in settings where there was a shortage of healthcare workers and where there was good counseling for index patients (Alam et al. 2010). Previous research has shown that young people may be particularly reluctant to engage in partner notification due to shame and stigma related to an STI or HIV diagnosis, fear of notifying partners and related consequences, and mistrust of medical or public health services. In the USA, for example, a study among young African-American men in a low-income, urban community in San Francisco—with high STI burden—found that stigma and shame of a STI diagnosis was associated with lower likelihood of partner notification and providing a partner with STI medication (Morris et al. 2014).

HIV Treatments and the Risk of HIV Transmission

Antiretroviral therapies (*ARTs*) ARTs are available to treat HIV infection (NIH 2012). Even though these treatments do not cure HIV or AIDS, they are highly effective in suppressing the virus and they reduce the likelihood of horizontal (to partners) or vertical transmission (to infants). Treatment also improves the health and the quality of life of infected individuals. Interventions designed primarily for adults that had high-quality, consistent biological evidence of efficacy included provision of antiretrovirals for the prevention of mother-to-child transmission and HIV treatments (Mavedzenge et al. 2014). The HPTN 052 study, a randomized control trial examining the use of antiretroviral drugs to reduce transmission of HIV from an index patient with HIV to a sexual partner, was overwhelmingly successful resulting in a 96 % reduction in HIV transmission (Padian et al. 2011). Other subsequent trails have confirmed that ART reduces rates of sexual transmission of HIV and highly active HIV treatments have become defined as an essential part of HIV prevention (Cohen et al. 2011; Mavedzenge et al. 2014).

Since decreasing HIV community viral load via expanding the proportion of the population in ART treatment may decrease HIV transmission, a recent focus of biomedical interventions has been framed as "treatment as prevention." Pre-exposure prophylaxis (PrEP) is an option for people who do not have HIV but who are at high risk of getting it to *prevent* HIV infection by taking medication every day. These medications are similar to ARTs used by HIV-positive persons on treatment. PrEP is ongoing and has shown tentative success in South Africa with a 39 % reduction in overall infection rates of HIV in women

participants (Padian et al. 2011). Another study showed that PrEP reduced the risk of HIV infection by as much as 92 % (Grant et al. 2010). Post-exposure prophylaxis (PEP) is another option for individuals who may have been exposed to HIV. It involves taking ARTs within 3 days of potential exposure to reduce chances of becoming HIV positive. A recent study among gay men, other men, and transgender women (who have sex with men and were at high risk of HIV infection) was asked to take *two Truvada* pills (or a placebo) from one day to two hours before they anticipated having sex. If they actually did have sex, then they were to take another pill 24 h after having sex and a fourth pill 48 h after it. The period of taking PrEP would thus cover two to three days. If they continued having sex, they were told to continue taking PrEP until 48 h after their last experience. This study found an 86 % reduction in HIV transmission in the PrEP arm (Molina et al. 2015).

However, HIV treatment programs reaching youth are challenged by problems of adherence, issues related to cost and universal access, and in the case of PrEP and PEP difficulties in linking asymptomatic people to treatment and partner notification. Young people living with HIV—both perinatally and behaviorally infected—have significant healthcare needs. Poor outcomes across the HIV care continuum—from linkage to care and timely ART initiation to retention in care and viral suppression—have been reported among both perinatally and behaviorally infected young people. A large multi-country study on attrition into HIV care among youth found that 48 % in the pre-ART phase of care were lost to follow-up or had died one year after enrollment. This is a serious concern given that ARTs are not effective unless taken continuously (NIH 2013). Two recent oral PrEP trails were also discontinued due to lack of effect attributed to low adherence among women (Mavedzenge et al. 2013). Furthermore, while HIV treatments can provide significant protection from HIV, it is even more effective when combined with condom use and other prevention tools.

Conclusion

STIs and HIV present major public health issues among young people globally, as the youth bear the heaviest burden of STIs. More rigorous data collection and surveillance systems are needed to adequately understand and address STI and HIV epidemics among youth. There is an increasing recognition of the range of interrelated social, structural, behavioral, and biological factors that contribute to STI transmission among young people. Special attention needs to be given at various levels to enable adolescents to access services and enact behavior change to avoid STIs (Mavedzenge et al. 2014). Biomedical interventions play a pivotal role in addressing STIs among young people. Advances in vaccine research and HIV treatments are promising approaches to reduce the youth STI vulnerability and burden. Yet, biomedical approaches alone cannot improve the sexual and reproductive health of adolescents. In fact, the implementation of biomedical interventions often requires supportive interventions at the community and policy levels, particularly for reaching young people. Innovative efforts to create enabling social and legal environments for young people are needed to prevent harmful practices, like gender-based violence, and remove age restrictions and sex restrictions to accessing effective prevention, treatment, and care services. Meaningful participation and engagement of young people are also needed in designing, developing, and assessing effective program and policy

efforts to reach the most vulnerable youth. Finally, it is critically important to think about reaching youth with integrated programming efforts—to conceptualize STI and HIV prevention and care—as part of broader health and development services for youth.

Acknowledgments We would like to thank Drs. Gail Shust and Dina Romo for their collegial review of the chapter drafts and Ms. Kathryn P. Martin and Ms. Nityanjali Thumallachetty for their support in gathering data and literature for this chapter.

References

Agosti, J. M., & Goldie, S. J. (2007). Introducing HPV vaccine in developing countries—Key challenges and issues. *New England Journal of Medicine, 356*(19), 1908–1910.

Agwu, A. L., & Fairlie, L. (2013). Antiretroviral treatment, management challenges and outcomes in perinatally HIV-infected adolescents. *Journal of the International AIDS Society, 16*(1).

Ahmed, S., Lutalo, T., Wawer, M., Serwadda, D., Sewankambo, N. K., Nalugoda, F., … & Gray, R. (2001). HIV incidence and sexually transmitted disease prevalence associated with condom use: A population study in Rakai, Uganda. *Aids, 15*(16), 2171–2179.

Alam, N., Chamot, E., Vermund, S. H., Streatfield, K., & Kristensen, S. (2010). Partner notification for sexually transmitted infections in developing countries: A systematic review. *BMC Public Health, 10*(1), 19.

Aral, S. O., & Holmes, K. K. (2008). The epidemiology of STIs and their social and behavioral determinants: Industrialized and developing countries. In K. Holmes, P. Sparling, W. Stamm, P. Piot, J. Wasserheit, L. Cory, M. Cohen, & D. Watts (Eds.), *Sexually transmitted diseases* (4th ed.). New York, NY: McGraw-Hill.

Auerswald, C. L., Sugano, E., Ellen, J. M., & Klausner, J. D. (2006). Street-based STD testing and treatment of homeless youth are feasible, acceptable and effective. *Journal of Adolescent Health, 38*(3), 208–212.

Auvert, B., Taljaard, D., Lagarde, E., Sobngwi-Tambekou, J., Sitta, R. M., & Puren, A. (2005). Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: The ANRS 1265 Trial. *PLoS Medicine, 2*(11), e298.

Bailey, R. C., Moses, S., Parker, C. B., Agot, K., Maclean, I., Krieger, J. N., … & Ndinya-Achola, J. O. (2007). Male circumcision for HIV prevention in young men in Kisumu, Kenya: A randomised controlled trial. *The Lancet, 369*(9562), 643–656.

Bailey, R. C., Muga, R., Poulussen, R., & Abicht, H. (2002). The acceptability of male circumcision to reduce HIV infections in Nyanza Province, Kenya. *AIDS Care, 14*(1), 27–40.

Baird, S. J., Garfein, R. S., McIntosh, C. T., & Ozler, B. (2012). Effect of a cash transfer programme for schooling on prevalence of HIV and herpes simplex type 2 in Malawi: A cluster randomised trial. *The Lancet, 379*(9823), 1320–1329.

Baral, S., Beyrer, C., Muessig, K., Poteat, T., Wirtz, A. L., Decker, M. R., … & Kerrigan, D. (2012). Burden of HIV among female sex workers in low-income and middle-income countries: A systematic review and meta-analysis. *The Lancet Infectious Diseases, 12*(7), 538–549.

Baral, S., Sifakis, F., Cleghorn, F., & Beyrer, C. (2007). Elevated risk for HIV infection among men who have sex with men in low- and middle-income countries 2000–2006: A systematic review. *PLoS Medicine, 4*(12), e339.

Barth, K. R., Cook, R. L., Downs, J. S., Switzer, G. E., & Fischhoff, B. (2002). Social stigma and negative consequences: Factors that influence college students' decisions to seek testing for sexually transmitted infections. *Journal of American College Health, 50*(4), 153–159.

Bauer, H. M., Chartier, M., Kessell, E., Packel, L., Brammeier, M., Little, M., … & Get Tested Chlamydia Screening Project Group. (2004). Chlamydia screening of youth and young adults in non-clinical settings throughout California. *Sexually Transmitted Diseases, 31*(7), 409–414.

CDC. (2013). *Incidence, prevalence, and cost of sexually transmitted infections in the United States.* Retrieved from http://www.cdc.gov/std/stats/sti-estimates-fact-sheet-feb-2013.pdf

CDC. (2014a). *Sexually transmitted disease surveillance 2013*. Atlanta, GA: U.S. Department of Health and Human Services.

CDC. (2014b). *Oral sex and HIV risk*. Retrieved from http://www.cdc.gov/hiv/risk/behavior/oralsex.html

Chalamilla, G., Mbwana, J., Mhalu, F., Mmari, E., Majigo, M., Swai, A., … & Sandstrom, E. (2006). Patterns of sexually transmitted infections in adolescents and youth in Dar es Salaam, Tanzania. *BMC Infectious Diseases, 6*(1), 22.

Coates, T. J., Richter, L., & Caceres, C. (2008). Behavioural strategies to reduce HIV transmission: How to make them work better. *The Lancet, 372*(9639), 669–684.

Cohen, D. A., Scribner, R. A., & Farley, T. A. (2000). A structural model of health behavior: A pragmatic approach to explain and influence health behaviors at the population level. *Preventive Medicine, 30*(2), 146–154.

Cohen, M. S., Shaw, G. M., McMichael, A. J., & Haynes, B. F. (2011). Acute HIV-1 infection. *New England Journal of Medicine, 364*(20), 1943–1954.

Cooper, M. L., Agocha, V. B., & Powers, A. M. (1999). Motivations for condom use: Do pregnancy prevention goals undermine disease prevention among heterosexual young adults? *Health Psychology, 18*(5), 464.

Crosby, R., Milhausen, R., Yarber, W. L., Sanders, S. A., & Graham, C. A. (2008). Condom 'turn offs' among adults: An exploratory study. *International Journal of STD and AIDS, 19*(9), 590–594.

Crosby, R., Sanders, S. A., Yarber, W. L., & Graham, C. A. (2003). Condom-use errors and problems: A neglected aspect of studies assessing condom effectiveness. *American Journal of Preventive Medicine, 24*(4), 367–370.

Da Ros, C. T., & Da Silva Schmitt, C. (2008). Global epidemiology of sexually transmitted diseases. *Asian Journal of Andrology, 10*(1), 110–114.

Dallabetta, G. G., Wi, T. E. C., & Neilsen, G. (2008). Special aspects of STI/HIV prevention and control in developing countries. *Sexually Transmitted Diseases*.

Darney, B. G., Weaver, M. R., Sosa-Rubi, S. G., Walker, D., Servan-Mori, E., Prager, S., et al. (2013). The oportunidades conditional cash transfer program: Effects on pregnancy and contraceptive use among young rural women in Mexico. *International Perspectives on Sexual and Reproductive Health, 39*(4), 205–214.

Dehne, K. L., & Riedner, G. (2005). *Sexually transmitted infections among adolescents: The need for adequate health services*. Geneva and Eschborn: World Health Organization and Deutsche Gesellschaft fuer Technische Zusammenarbeit (GTZ) GmbH o. Document Number).

Denno, D. M., Chandra-Mouli, V., & Osman, M. (2012). Reaching youth with out-of-facility HIV and reproductive health services: A systematic review. *Journal of Adolescent Health, 51*(2), 106–121.

DiClemente, R. J., Salazar, L. F., Crosby, R. A., & Rosenthal, S. L. (2005). Prevention and control of sexually transmitted infections among adolescents: The importance of a socio-ecological perspective—A commentary. *Public Health, 119*(9), 825–836.

Ferreira, A., Young, T., Mathews, C., Zunza, M., & Low, N. (2013). Strategies for partner notification for sexually transmitted infections, including HIV. *Cochrane Database of Systematic Reviews, 10*.

Figueroa, J. P., Weir, S. S., Jones-Cooper, C., Byfield, L., Hobbs, M. M., McKnight, I., et al. (2013). High HIV prevalence among MSM in Jamaica is associated with social vulnerability and other sexually transmitted infections. *The West Indian Medical Journal, 62*(4), 286–291.

Fortenberry, J. D. (1997). Health care seeking behaviors related to sexually transmitted diseases among adolescents. *American Journal of Public Health, 87*(3), 417–420.

Fortenberry, J. D., McFarlane, M., Bleakley, A., Bull, S., Fishbein, M., Grimley, D. M., … & Stoner, B. P. (2002). Relationships of stigma and shame to gonorrhea and HIV screening. *American Journal of Public Health, 92*(3), 378–381.

Gottlieb, S. L., Low, N., Newman, L. M., Bolan, G., Kamb, M., & Broutet, N. (2014). Toward global prevention of sexually transmitted infections (STIs): the need for STI vaccines. *Vaccine, 32*(14), 1527–1535.

Götz, H. M., Veldhuijzen, I. K., Ossewaarde, J. M., de Zwart, O., & Richardus, J. H. (2006). Chlamydia trachomatis infections in multi-ethnic urban youth: A pilot combining STI health education and outreach testing in Rotterdam, Netherlands. *Sexually Transmitted Infections, 82*(2), 148–152.

Graham, J. E., & Mishra, A. (2011). Global challenges of implementing human papillomavirus vaccines. *International Journal for Equity in Health, 10*(1), 27.

Grant, R. M., Lama, J. R., Anderson, P. L., McMahan, V., Liu, A. Y., Vargas, L., … & Glidden, D.V. (2010). Preexposure chemoprophylaxis for HIV prevention in men who have Sex with men. *New England Journal of Medicine, 363*(27), 2587–2599.

Gray, R. H., Kigozi, G., Kong, X., Ssempiija, V., Makumbi, F., Wattya, S., … & Wawer, M. J. (2012). The effectiveness of male circumcision for HIV prevention and effects on risk behaviors in a post-trial follow-up study. *AIDS, 26*, 7.

Gray, R. H., Kigozi, G., Serwadda, D., Makumbi, F., Watya, S., Nalugoda, F., … & Wawer, M. J. (2007). Male circumcision for HIV prevention in men in Rakai, Uganda: A randomised trial. *The Lancet, 369*(9562), 657–666.

Gray, R. H., Kiwanuka, N., Quinn, T. C., Sewankambo, N. K., Serwadda, D., Mangen, F. W., … & Wawer, M. J. (2000). Male circumcision and HIV acquisition and transmission: Cohort studies in Rakai, Uganda. Rakai Project Team. *Aids, 14*(15), 2371–2381.

Gupta, G. R., Parkhurst, J. O., Ogden, J. A., Aggleton, P., & Mahal, A. (2008). Structural approaches to HIV prevention. *The Lancet, 372*(9640), 764–775.

Hall, K. S., Moreau, C., & Trussell, J. (2011). Discouraging trends in reproductive health service use among adolescent and young adult women in the USA, 2002–2008. *Human Reproduction, 26*(9), 2541–2548.

Harrison, A., Newell, M. L., Imrie, J., & Hoddinott, G. (2010). HIV prevention for South African youth: Which interventions work? A systematic review of current evidence. *BMC Public Health, 10*(1), 102.

Holmes, K., Sparling, P., Stamm, W., Piot, P., Wasserheit, J., Cory, L., … Watts, D. (2008). *Sexually transmitted diseases*. Retrieved from http://www.r2library.com/Resource/Title/0071417486

Holmes, K. K., Levine, R., & Weaver, M. (2004). Effectiveness of condoms in preventing sexually transmitted infections. *Bulletin of the World Health Organization, 82*(6), 454–461.

Hopkins, T. G., & Wood, N. (2013). Female human papillomavirus (HPV) vaccination: Global uptake and the impact of attitudes. *Vaccine, 31*(13), 1673–1679.

Idele, P., Gillespie, A., Porth, T., Suzuki, C., Mahy, M., Kasedde, S., et al. (2014). Epidemiology of HIV and AIDS Among adolescents: Current status, inequities, and data gaps. *JAIDS Journal of Acquired Immune Deficiency Syndromes, 66*(supplement 2), S144–S153. doi:10.1097/QAI.0000000000000176

Johnson, L., Bradshaw, D., & Dorrington, R. (2007). The burden of disease attributable to sexually transmitted

infections in South Africa in 2000. *South African Medical Journal, 97*(8 Pt 2), 658–662.

Johnson, L. F., Hallett, T. B., Rehle, T. M., & Dorrington, R. E. (2012). The effect of changes in condom usage and antiretroviral treatment coverage on human immunodeficiency virus incidence in South Africa: A model-based analysis. *Journal of the Royal Society, Interface, 9*(72), 1544–1554.

Kasedde, S., Luo, C., McClure, C., & Chandan, U. (2013). Reducing HIV and AIDS in adolescents: Opportunities and challenges. *Current HIV/AIDS Reports, 10*(2), 159–168.

Kigozi, G., Lukabwe, I., Kagaayi, J., Wawer, M. J., Nantume, B., Kigozi, G., … & Gray, R. H. (2009). Sexual satisfaction of women partners of circumcised men in a randomized trial of male circumcision in Rakai, Uganda. *BJU International, 104*(11), 1698–1701.

Kigozi, G., Watya, S., Polis, C. B., Buwembo, D., Kiggundu, V., Wawer, M. J., … & Gray, R. H. (2008). The effect of male circumcision on sexual satisfaction and function, results from a randomized trial of male circumcision for human immunodeficiency virus prevention, Rakai, Uganda. *BJU International, 101*(1), 65–70.

Leenaars, P., Rombouts, R., & Kok, G. (1993). Seeking medical care for a sexually transmitted disease: Determinants of delay-behavior. *Psychology and Health, 8*(1), 17–32.

Lichtenstein, B. (2003). Stigma as a barrier to treatment of sexually transmitted infection in the American deep south: Issues of race, gender and poverty. *Social Science and Medicine, 57*(12), 2435–2445.

Mabey, D. (2010). Epidemiology of STIs: Worldwide. *Medicine, 38*(5), 216–219.

Mathers, C., Boerma, J. T., Ma Fat, D., & World Health Organization. (2008). *The global burden of disease, 2004 update*. Retrieved from http://www.columbia.edu/cgi-bin/cul/resolve?clio6928403

Mathur, S., Wei, Y., Zhong, X., Song, X., Nalugoda F., Lutalo T., … & Santelli, J. S. (2015). Partner characteristics associated With HIV Acquisition among youth in Rakai, Uganda. *JAIDS Journal of Acquired Immune Deficiency Syndromes, 69*(1), 75–84.

Mavedzenge, S. N., Baggaley, R., & Corbett, E. L. (2013). A review of self-testing for HIV: Research and policy priorities in a new era of HIV prevention. *Clinical Infectious Diseases, 57*(1), 126–138. doi:10.1093/cid/cit156 (first published online March 13, 2013)

Mavedzenge, S. N., Luecke, E., & Ross, D. A. (2014). Effective approaches for programming to reduce adolescent vulnerability to HIV infection, HIV risk, and HIV-related morbidity and mortality: A systematic review of systematic reviews. *JAIDS Journal of Acquired Immune Deficiency Syndromes, 66*(supplement 2), S154–S169. doi:10.1097/QAI.0000000000000178

McCoy, S. I., Kangwende, R. A., & Padian, N. S. (2009). Behavior change interventions to prevent HIV infection among women living in low and middle income countries: A systematic review. *AIDS and Behavior, 14*(3), 469–482.

Molina, J.-M., Capitant, C., Spire, B., Pialoux, G., Chidiac, C., Charreau, I., … Delfraissy, J. F. (2015). *On demand PrEP with oral TDF-FTC in MSM: Results of the ANRS ipergay trial*. Paper presented at the Conference on Retroviruses and Opportunistic Infections, Seattle, Washington: February 23–26.

Morris, J. L., Lippman, S. A., Philip, S., Bernstein, K., Neilands, T. B., & Lightfoot, M. (2014). Sexually transmitted infection related stigma and shame among African American male youth: Implications for testing practices, partner notification, and treatment. *AIDS Patient Care and STDs, 28*(9), 499–506.

Munoz, N., Bosch, F. X., de Sanjose, S., Herrero, R., Castellsagué, X., Shah, K. V., … & Meijer, C. J. (2003). Epidemiologic classification of human papillomavirus types associated with cervical cancer. *New England Journal of Medicine, 348*(6), 518–527.

NIH. (2012). Treatment of HIV infection. Retrieved from http://www.niaid.nih.gov/topics/HIVAIDS/Understanding/Treatment/Pages/default.aspx

NIH. (2013). Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Retrieved from http://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-arv-guidelines/282/monthly-suggested-wholesale-price-of-antiretroviral-drugs

Njeuhmeli, E., Hatzold, K., Gold, E., Mahler, H., Kripke, K., Seifert-Ahanda, K., … & Kasedde, S. (2014). Lessons learned from scale-up of voluntary medical male circumcision focusing on adolescents: Benefits, challenges, and potential opportunities for linkages with adolescent HIV, sexual, and reproductive health services. *JAIDS Journal of Acquired Immune Deficiency Syndromes*, *66*, S193–S199.

Oncale, R. M., & King, B. M. (2001). Comparison of men's and women's attempts to dissuade sexual partners from the couple using condoms. *Archives of Sexual Behavior, 30*(4), 379–391.

Padian, N. S., McCoy, S. I., Karim, S. S. A., Hasen, N., Kim, J., Bartos, M., … & Cohen, M. S. (2011). HIV prevention transformed: The new prevention research agenda. *The Lancet, 378*(9787), 269–278.

Panchaud, C., Singh, S., Feivelson, D., & Darroch, J. E. (2000). Sexually transmitted diseases among adolescents in developed countries. *Family Planning Perspectives, 32*(1), 24–45.

Peralta, L., Deeds, B. G., Hipszer, S., & Ghalib, K. (2007). Barriers and facilitators to adolescent HIV testing. *AIDS patient care and STDs, 21*(6), 400–408.

Pettifor, A., MacPhail, C., Nguyen, N., & Rosenberg, M. (2012). Can money prevent the spread of HIV? A review of cash payments for HIV prevention. *AIDS and Behavior, 16*(7), 1729–1738.

Rerks-Ngarm, S., Pitisuttithum, P., Nitayaphan, S., Kaewkungwal, J., Chiu, J., Paris, R., … & Kim, J. H. (2009). Vaccination with ALVAC and AIDSVAX to prevent HIV-1 infection in Thailand. *New England Journal of Medicine, 361*(23), 2209–2220.

Rojanapithayakorn, W., & Hanenberg, R. (1996). The 100 % condom program in Thailand. *Aids, 10*(1), 1–8.

Sanders, S. A., Yarber, W. L., Kaufman, E. L., Crosby, R. A., Graham, C. A., & Milhausen, R. R. (2012). Condom use errors and problems: A global view. *Sexual health, 9*(1), 81–95.

Saslow, D., Castle, P. E., Cox, J. T., Davey, D. D., Einstein, M. H., Ferris, D. G., … & Garcia, F. (2007). American Cancer Society Guideline for human papillomavirus (HPV) vaccine use to prevent cervical cancer and its precursors. *CA: A Cancer Journal for Clinicians, 57*(1), 7–28.

Seth, P., DiClemente, R. J., & Lovvorn, A. E. (2013). State of the evidence: Intimate partner violence and HIV/STI risk among adolescents. *Current HIV Research, 11*(7), 528–535.

Shahmanesh, M., Patel, V., Mabey, D., & Cowan, F. (2008). Effectiveness of interventions for the prevention of HIV and other sexually transmitted infections in female sex workers in resource poor setting: A systematic review. *Tropical Medicine & International Health, 13*(5), 659–679.

Siegfried, N., Muller, M., Deeks, J. J., & Volmink, J. (2009). Male circumcision for prevention of heterosexual acquisition of HIV in men (review). *Cochrane Database System Review*.

Silverman, J. G. (2011). Adolescent female sex workers: Invisibility, violence and HIV. *Archives of Disease in Childhood, 96*(5), 478–481.

Sohn, A. H., & Hazra, R. (2013). The changing epidemiology of the global paediatric HIV epidemic: Keeping track of perinatally HIV-infected adolescents. *Journal of the International AIDS Society*, *16*(1).

Ssekubugu, R., Leontsini, E., Wawer, M. J., Serwadda, D., Kigozi, G., Kennedy, C. E., … & Gray, R. H. (2013). Contextual barriers and motivators to adult male medical circumcision in Rakai, Uganda. *Qualitative Health Research, 23*(6), 795–804.

Swendeman, D., Basu, I., Das, S., Jana, S., & Rotheram-Borus, M. J. (2009). Empowering sex workers in India to reduce vulnerability to HIV and sexually transmitted diseases. *Social Science and Medicine, 69*(8), 1157–1166.

Tao, G., Irwin, K. L., & Kassler, W. J. (2000). Missed opportunities to assess sexually transmitted diseases in US adults during routine medical checkups. *American Journal of Preventive Medicine, 18*(2), 109–114.

UNAIDS. (2013a). *Global report: UNAIDS report on global AIDS epidemic 2013*. Genevao. Document Number.

UNAIDS. (2013b). *Thematic segment: HIV, adolescents, and youth background note*. Geneva: UNAIDSo. Document Number.

Underwood, C., Skinner, J., Osman, N., & Schwandt, H. (2011). Structural determinants of adolescent girls' vulnerability to HIV: Views from community members in Botswana, Malawi, and Mozambique. *Social Science and Medicine, 73*, 343–350.

Wagman, J. A., Gray, R. H., Campbell, J. C., Thoma, M., Ndyanabo, A., Ssekasanvu, J., … & Brahmbhatt, H. (2015). Effectiveness of an integrated intimate partner violence and HIV prevention intervention in Rakai, Uganda: Analysis of an intervention in an existing cluster randomised cohort. *The Lancet Global Health*, *3*(1), e23–e33.

Warner, L., Stone, K. M., Macaluso, M., Buehler, J. W., & Austin, H. D. (2006). Condom use and risk of gonorrhea and Chlamydia: A systematic review of design and measurement factors assessed in epidemiologic studies. *Sexually Transmitted Diseases, 33*(1), 36–51.

Wawer, M. J., Gray, R. H., Sewankambo, N. K., Serwadda, D., Li, X., Laeyendecker, O., … & Quinn, T. C. (2005). Rates of HIV-1 transmission per coital act, by stage of HIV-1 infection, in Rakai, Uganda. *Journal of Infectious Diseases, 191*(9), 1403–1409.

Wawer, M. J., Makumbi, F., Kigoz, G., Serwadda D., Watya, S., Nalugoda, F., … & Gray, R. H. (2009). Circumcision in HIV-infected men and its effect on HIV transmission to female partners in Rakai, Uganda: A randomised controlled trial. *Lancet, 374* (9685), 229–237.

WHO. (2007). Global strategy for the prevention and control of sexually transmitted infections: 2006–2015: Breaking the chain of transmission. Retrieved from http://apps.who.int/iris/handle/10665/43853

WHO. (2008a). 10 facts on sexually transmitted infections. *Fact file*. Retrieved from http://www.who.int/features/factfiles/sexually_transmitted_diseases/en/

WHO. (2008b). Regional strategic action plan for the prevention and control of sexually transmitted infections, 2008–2012. Retrieved from http://www.wpro.who.int/publications/docs/STIStrategy_FINAL30May2008.pdf

WHO. (2011). Strategic directions for improving Adolescent Health in South-East Asia Region. Retrieved from http://apps.searo.who.int/PDS_DOCS/B4771.pdf

WHO. (2012). Global incidence and prevalence of selected curable sexually transmitted infections-2008. Retreived from http://apps.who.int/iris/bitstream/10665/75181/1/9789241503839_eng.pdf

WHO. (2013). Sexually transmitted infections (STIs). *Fact sheet* N°110. Retrieved from http://www.who.int/mediacentre/factsheets/fs110/en/

WHO. (2014a). Hepatitis B. Fact sheet no. 204. Retrieved from http://www.who.int/mediacentre/factsheets/fs204/en/

WHO. (2014b). *Report on global sexually transmitted infection surveillance 2013*. Geneva: WHO.

WHO. (2014c). *Human papillomavirus vaccines: WHO position paper, October 2014*. Retrieved from http://www.who.int/wer/2013/wer8839.pdf?ua=1

Zhang, X. D., Temmerman, M., Li, Y., Luo, W., & Luchters S. (2012). Vulnerabilities, health needs and predictors of high-risk sexual behaviour among female adolescent sex workers in Kunming, China. *Sexually Transmitted Infections*.

Critical Issues in Adolescent Nutrition: Needs and Recommendations

11

Marilyn Massey-Stokes and Alejandra Quezada

Introduction

Adolescence is a critical transitional period marked by dynamic changes in growth, development, and behavior. During this life stage, adolescents are increasing their independence and continuing the task of identity formation (American Psychological Association 2002; Cidro et al. 2015; More 2013). In addition, the brain is still transforming, and cognitive and social-emotional aptitudes are expanding (Casey et al. 2008; Hempel et al. 2012; Johnson et al. 2009). Studies have demonstrated that in adolescence and throughout the life span, behavior is influenced by multiple interactive factors such as culture, life experiences, psychological well-being, self-efficacy, social relationships and interactions, social and built environments, and nutrition (Johnson et al. 2009). Adolescent lifestyle behaviors are of particular interest and significance as they not only impact young people's daily lives, but also have bearing on their long-term health, well-being, and quality of life.

There are various health-related behaviors that generally take root in adolescence, such as alcohol, tobacco, and other drug uses; sexual behaviors that contribute to unplanned pregnancy and sexually transmitted infections; behaviors that contribute to unintentional injuries and violence; unhealthy dietary behaviors; and insufficient physical activity. These behaviors often extend into adulthood and lead to premature disability and death (CDC 2015a). Therefore, adolescence is a critical life stage for health promotion interventions aimed at improving population health, fostering wellness (Booker et al. 2014), and enhancing quality of life across the life span. Numerous agencies, organizations, and initiatives have cited adolescent health as a critical focus now and in the future (AAP n.d.; CDC 2012, 2015a; Society for Adolescent Health and Medicine 2015; UNICEF 2011, 2014; USDHHS, Office of Disease Prevention and Health Promotion n.d.b; WHO 2015a, e). Worldwide, adolescents recognize the fundamental importance of health as it relates to their own development, wellness, and quality of life. Furthermore, being proactive and taking deliberate steps to promote the health and wellness of adolescents is "critical for the prevention of health problems in adulthood, and for countries' future health and social infrastructure" (WHO 2015e, Para. 4).

Selected Adolescent Quotes About the Importance of Health

- It is important because I want to live a long life, and I don't want to be restricted by any illness that would be the result of being unhealthy. I want to be a role model to children that I may

M. Massey-Stokes (✉) · A. Quezada
Department of Health Studies, Texas Woman's University, PO Box 425499, Denton, TX 76204, USA
e-mail: MMasseyStokes@mail.twu.edu

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_11

have because I know how important it is to have someone that you can look up to and to motivate you to be healthy and to exercise.
Female, 15–17, United Kingdom.

- It is important because I want to live a long life, and I don't want to be restricted by any illness that would be the result of being unhealthy. I want to be a role model to children that I may have because I know how important it is to have someone that you can look up to and to motivate you to be healthy and to exercise.
  Female, 15–17, United Kingdom.
- If you feel well, you produce, you contribute, you are happy and you create a positive social environment.
  Female, 18–19, Mexico.
- Health is life. Being in good health allows you to really throw yourself into life.
  Female, 15–17, France.
- Adolescents on the meaning of health: To have the ability to do things well, without any sort of discomfort or pain. To ensure a comfortable future, without any complications like diabetes or any sort of cardiac disease, etc., caused by what was done in the past.
  Gender not specified, 18–19, Mexico.
- Health is relative, based on the way you observe it. You can have a healthy body but an aching soul. I think it sums up to a balance of forces that make your body and mind work together to be able to experience freedom and with that, to create goals.
  Male, 15–17, Mexico.
- Health is the basis for everything. If you want to study or work, you need to be in good physical and mental health.
  Female, 15–17, South Africa.
- The proper functioning of one person is crucial for the society because our problems affect our behaviour, which will sooner or later affect the whole society.
  Transgender, 12–14, Argentina.
- Health is important to me because being in a state of complete health means being able to function at my full potential, and hence being able to perform at my best and contribute as much as I can to the activities I am involved in.
  Female, 15–17, Switzerland.
- Your health is not only your future but also the future of those around you. If I were to die at a young age, I would be unable to contribute to the economy or the population. An individual contracting a disease increases the risk of other individuals within that community contracting it. Therefore, it is important to keep healthy to ensure my safety and the safety of others.
  Female, 15–17, Saudi Arabia.
  Source WHO (2015c).

Overview of Global Adolescent Nutrition

An estimated 1.2 billion young people aged 10–19 comprise approximately 18 % of the world's population (Patton and Sawyer 2015; WHO 2014a); therefore, adolescent health is a major issue of global magnitude. Although multiple critical issues affect adolescent health and well-being, nutrition is one of the most notable. Almost 90 % of the world's adolescents reside in low- and middle-income countries (LMICs) (Patton and Sawyer 2015); however, adolescents' nutritional status in these countries is threatened by a variety of factors outside of their control, including poverty, poor education, unsafe water and unclean sanitation, lack of access to quality health care, and high rates of communicable and chronic diseases (Fatusi and Bello 2015; Skolnik 2012; UNICEF 2011, 2014). Furthermore, political instability coupled with economic crises can sharply impede adolescents in LMICs from achieving important developmental tasks, which can lead to a wide range of risky health behaviors, including unhealthy eating (Hempel et al. 2012).

The most pressing nutritional issues affecting adolescents globally are undernutrition, obesity, and iron deficiency anemia (Fatusi and Bello 2015). In many LMICs, the nutritional needs of adolescent females are not considered as important as those of males, which are reflected in data that have been collected from some of the countries. For example, more than 25 % of adolescent girls aged 15–19 in 11 countries are underweight (Fatusi and Bello 2015; UNICEF 2014), and nearly 50 % of adolescent females aged 15–19 in India are underweight (UNICEF 2014). Furthermore, the beginning of the menses places adolescent girls at higher risk for being anemic, which can have further implications in terms of pregnancy-related risks associated with iron deficiency anemia (Prentice 2015).

Undernutrition results in a lack of essential nutrients in the diet, which lowers immunity, harms healthy growth and development, and can lead to death. Malnourished children and adolescents with are often susceptible to serious health conditions such as diarrheal diseases, measles, malaria, lower respiratory infections, and iron deficiency anemia (Skolnik 2012; WHO 2002). Undernutrition among adolescents is also associated with the decreased ability to work, as well as poor pregnancy outcomes (WHO 2002). In addition, undernutrition is linked to a variety of problems that commonly exist in LMICs, including burden of disease (e.g., HIV and other communicable diseases); poor household socioeconomic conditions; quantity and quality of food; low education levels; and lack of access to health, nutrition, and health promotion services (Kimani-Murage 2013; Kurz and Johnson-Welch 1994, 2000). To further exacerbate the problem, early marriage in low-income countries places adolescent girls at additional risk for maternal undernutrition from adolescent pregnancy (Patton and Sawyer 2015; Skolnik 2012; UNICEF 2014). It is well established that maternal health and pregnancy outcomes are interconnected to the nutritional condition of the mother (Bhutta and Lassi 2015; Prentice 2015; Skolnik 2012; United Nations 2013; WHO n.d.b, 2002). A pregnant, malnourished female is more likely to have her own growth stunted (Prentice 2015) and deliver a premature or low-birthweight baby (Skolnik 2012). In addition, complications during pregnancy or childbirth are among the leading causes of death for adolescent females (United Nations 2013).

Iron deficiency is related to undernutrition and most commonly associated with iron deficiency anemia. Iron deficiency anemia can lead to negative health-related consequences, including impaired cognitive and physical development, poor pregnancy outcomes (including maternal mortality), and lowered work productivity (WHO n.d.a). Iron deficiency anemia is very common among adolescent females, particularly those residing in LMICs. For example, roughly half of the adolescent females aged 15–19 living in India are anemic, and over one-third of the girls aged 15–19 in other countries (with data) are anemic (Fatusi and Bello 2015; UNICEF 2014). The onset of menstruation and additional pregnancy-related risks place adolescent females at even greater risk for anemia. Additionally, iron deficiency anemia is among the chief causes of disability-adjusted life years lost in teens aged 10–19 (WHO 2015c). Other widespread nutritional problems include deficits in essential nutrients such as proteins; vitamins A, C, and D; folic acid; zinc; iodine; and calcium (Bhutta and Lassi 2015; Kulkarni et al. 2014; Prentice 2015; Prentice et al. 2006; Skolnik 2012).

Historically, high-income countries have been challenged by ever-increasing rates of overweight and obesity and related chronic diseases in which diet plays a role, such as cardiovascular disease, diabetes, and cancer (Lassi and Bhutta 2015; Skolnik 2012). However, chronic diseases are now the leading causes of death and disability worldwide and are rapidly rising (Skolnik 2012; WHO 2009). Furthermore, with economic transition and urbanization taking place in LMICs, these countries are faced with a "double burden of disease" involving undernutrition and an epidemiological transition of a changing pattern of disease from communicable diseases to obesity-related chronic diseases (Kulkarni et al. 2014; Popkin et al. 2012; Skolnik 2012; WHO 2009).

There are growing numbers of adolescents in LMICs who are negatively impacted by the

double burden of disease, which threatens their health and quality of life in the present and into the future (Kimani-Murage 2013; Lassi and Bhutta 2015; Prentice 2015; WHO 2015c). For example, in some countries, as many as one in three adolescents is obese (Dick and Ferguson 2015), and more than one-fifth of adolescent girls in 11 out of 58 countries are overweight (Fatusi and Bello 2015). Overweight and obese youth in LMICs are at increased risk for developing metabolic syndrome (Kelishadi 2007), which is a condition characterized by the manifestation of a cluster of risk factors that are associated with type 2 diabetes and cardiovascular disease (Gallagher et al. 2010; National Heart, Lung & Blood Institute 2011). Metabolic risk factors and obesity-related chronic diseases are linked to unhealthy diet and physical inactivity, which are very prevalent in high-income countries and have also been associated with nutrition transition in LMICs such as South Africa (Bertram et al. 2013; Joubert et al. 2007; Kimani-Murage 2013; Vorster et al. 2005). The ever-increasing global health challenges of escalating rates of obesity and related chronic diseases carry additional implications for adverse outcomes in pregnancy and childbirth (Lassi and Bhutta 2015; Nitert et al. 2015; Prentice 2015) that can extend into and beyond childhood.

Healthful Eating Benefits and Guidelines

The US initiative Healthy People is considered a road map to health promotion for all Americans (USDHHS, Office of Disease Prevention and Health Promotion n.d.a) and contains Nutrition and Weight Status objectives to serve as a guide for supporting healthful eating behaviors and healthy weight management (USDHHS, Office of Disease Prevention and Health Promotion n.d.c) among all age-groups, including adolescents. Eating a healthful diet provides numerous benefits, including, but not limited to, the following:

- supports proper growth and development;
- assists in healthy weight management;
- helps prevent chronic diseases, such as cardiovascular disease (including hypertension and hypercholesterolemia), diabetes, and certain types of cancer; and
- reduces risk for experiencing bone fractures and osteoporosis, iron deficiency anemia, and dental caries (Prentice 2004; USDA 2015a, b; USDA & USDHHS 2010; USDHHS & Office of Disease Prevention and Health Promotion n.d.c).

Every five years, the USDA and USDHHS publish the Dietary Guidelines for Americans that endorse a nutritious diet of foods and beverages recommended to promote health, prevent chronic diseases, and support healthy weight management. The Dietary Guidelines align with recommendations from other health-related organizations (e.g., Academy of Nutrition and Dietetics 2015; American Diabetes Association 2015; American Heart Association n.d.; American Institute for Cancer Research 2014; and National Heart, Lung and Blood Institute 2014; USDA 2015a, b) and emphasize the importance of adopting the following dietary practices:

- Control caloric intake and increase physical activity to manage body weight across the life span.
- Consume a variety of nutrient-dense foods within and across the food groups.
- Include whole grains, fruits, vegetables, fat-free or low-fat dairy products, fish, poultry, legumes, seeds, and nuts.
- Limit the intake of red and processed meats, other sources of saturated and trans fats, cholesterol, added sugars, sodium, and refined grains (USDA & USDHHS 2010; WHO 2015b).

Dietary Behaviors Among Adolescents in the USA

Food choices and eating behaviors of adolescents in the USA and other high-income countries (e.g., Canada and Australia) are influenced by a variety of factors, including food marketing, technology, having a disposable income, more autonomy in

food selection, body image (Cidro et al. 2015; Harris et al. 2014; Scully et al. 2012), busy lifestyles, stress, and family modeling. Snacking is a typical eating style of adolescents (Keast et al. 2010), yet the research literature is mixed regarding the effects of snacking on adolescent health. In 2005–2006, adolescents consumed nearly one-fourth of their daily total calories (average of 526 cal) through snacking, and many of these foods exceeded the recommended daily amount of sodium and were high in calories from added sugars (e.g., sodas), solid fats (e.g., pizza), or both (e.g., ice cream, cookies, candy, and cake) (Cidro et al. 2015; Sebastian et al. 2008). In contrast, other studies have shown that adolescent snacking can help regulate nutritional imbalances and does not necessarily result in concomitant body fat increases (Keast et al. 2010).

Despite the numerous advantages of healthful eating, studies have revealed that adolescents in the USA commonly engage in unhealthy dietary behaviors. For example, according to the data from the 2010 National Youth Physical Activity and Nutrition Study (NYPANS), 28.5 % of high school students in the USA ate fruit less than one time each day, and 33.2 % of students ate vegetables less than one time each day (CDC 2011a). Moreover, adolescents often do not consume the recommended amounts of essential nutrients such as calcium, vitamin D, potassium, fiber, and iron (USDA 2015a, b). Teens also tend to eat more than the recommended intake of sodium and consume too many calories from added sugars and saturated fats (Cidro et al. 2015; Reedy and Krebs-Smith 2010; USDA 2015a, b).

In addition, the National Youth Risk Behavior Survey (YRBS), which monitors health-risk behaviors among high school youth in the USA, showed the following trends in the prevalence of overweight and obesity, dietary behaviors, and weight control practices for the year 2013 (CDC n.d.b):

- 13.7 % were overweight;
- 16.75 % were obese;
- 19.4 % did not drink milk (during the seven days prior to the survey);
- 11.2 % drank a can, bottle, or glass of non-diet soda three or more times per day (during the seven days before the survey);
- 13.7 % did not eat breakfast (during the seven days before the survey);
- 13 % did not eat for 24 or more hours in order to lose weight or keep from gaining weight (during the 30 days before the survey); and
- 4.4 % vomited or took laxatives in order to lose weight or to keep from gaining weight (during the 30 days before the survey).

Unhealthy dietary behavior practices increase adolescents' risk for micronutrient deficits, high sodium intake, and disproportionate calories in relation to energy expenditure, thereby placing teens at long-term risk for overweight and obesity, cardiovascular disease (including hypertension and hypercholesterolemia), diabetes, and osteoporosis (Brown et al. 2011; Gidding et al. 2005; Malik et al. 2010; Prentice 2004).

Overweight and Obesity in Adolescence

Globally, overweight and obesity contribute to more deaths than underweight. Poor dietary behaviors combined with physical inactivity contribute to the rising worldwide rates of chronic diseases associated with obesity, such as cardiovascular disease (CVD), type 2 diabetes, and cancer. High cholesterol is also a health issue of concern as it increases the global risk for developing heart disease, stroke, and other vascular diseases (WHO 2009).

Obesity is defined as abnormal or extensive body fat accumulation that negatively impacts health (WHO 2015f). Body mass index (BMI) is the commonly used index to classify overweight and obesity in adults (CDC 2015b). BMI is calculated as weight in kilograms divided by height in meters squared (Ogden and Flegal 2010). A high BMI can indicate body fatness; therefore, BMI can be used to assess the body weight categories that may (but not necessarily) lead to health problems associated with overweight and obesity (CDC

2015b). WHO (2015b) classified overweight and obesity in children and adolescents according to the WHO growth standards reconstructed in 2007 using the 1977 National Center for Health Statistics (NCHS)/WHO reference. Additionally, WHO (2015b) has defined overweight as >+1SD (equivalent to BMI 25 kg/m^2 at 19 years) and obesity as >+2SD (equivalent to BMI 30 kg/m^2 at 19 years). In the USA, BMI in children and adolescents is compared to sex- and age-specific reference values. The CDC 2000 growth charts serve as reference value BMI for age from the 85th up to the 95th percentile as "overweight" and BMI for age at or above the 95th percentile as "obesity" (Ogden and Flegal 2010).

The worldwide prevalence of obesity more than doubled between 1980 and 2014 (WHO 2015f). Once a problem is mainly associated with developed countries, the obesity epidemic has spread to LMICs as well. In LMICs, the rate of increase of childhood overweight and obesity has been more than 30 % higher than that of developed countries (WHO 2015f). In the USA, obesity has quadrupled in adolescents aged 12–19 in the past 30 years (an increase from 5 % to nearly 21 % in 2011–2012) (Ogden et al. 2014). Disparities in the prevalence of childhood obesity, however, indicate that certain racial and ethnic groups are more predisposed to overweight and obesity. For example, in 2011–2012, the prevalence among Hispanic (22.4 %) and non-Hispanic black (20.2 %) children and adolescents was significantly higher than that among non-Hispanic whites (14.1 %) (CDC 2015d).

Consequences of Overweight and Obesity

Obesity increases the risk of many serious diseases and health conditions. At least 2.8 million people die each year as a result of being overweight or obese (WHO 2014b). In the USA, obesity-related death estimates range from 26,000 to 365,000 annually (Biro and Wien 2010). In addition, the majority (65 %) of the world's population (including all high-income and middle-income countries) live in a country where overweight and obesity kill more people than underweight (WHO 2014b).

Obesity in adulthood is tied to multiple health problems such as diabetes, CVD, depression, certain cancers, osteoarthritis, sleep apnea, and early mortality (CDC 2015c). Globally, 44 % of diabetes, 23 % of ischemic heart disease, and 7–41 % of certain cancers are attributable to overweight and obesity (WHO 2014b). Additionally, among adolescents, overweight and obesity are also associated with mental health problems, social stigmatization, and poor self-esteem (CDC 2015c).

The growing problem of overweight and obesity has led to an increase in the prevalence of CVD risk factors and diabetes prevalence among adolescents in the USA. For example, one study found that 49 % of overweight and 61 % of obese adolescents had ≥ 1 CVD risk factors in addition to their weight status (May et al. 2012). Between 2001 and 2009, there was an estimated 30.5 % overall increase in type 2 diabetes among youth aged 10–19 (Dabelea et al. 2014). Additionally, metabolic syndrome is a mounting health issue among adolescents. The prevalence of metabolic syndrome among adolescents in the USA varies depending on the definition used. Estimates range from approximately 4.5 % between 1999 and 2004 (Ford et al. 2008) to 8.6 % between 2001 and 2006 (Johnson et al. 2009), with large disparities by racial–ethnic groups and gender. Metabolic syndrome among adolescents is also increasingly prevalent around the globe with estimates of 0.5 % in Germany, 2.0 % in Iran (Schwandt et al. 2010), 2.6 % in the Jammu region, India (Singh et al. 2013), and 2.5 % in Korea (Park et al. 2010). Furthermore, the prevalence of metabolic syndrome significantly increases in obese youth, including those living in LIMCs (Kelishadi 2007). As a single global snapshot, the prevalence of metabolic syndrome among obese adolescents has been as high as 20.8 % in the USA, 24.3 % in Korea (Park et al. 2010), and 33 % in the Jammu region, India (Singh et al. 2013).

The association between overweight and obesity in childhood and adolescence and adverse consequences in adulthood, such as early

mortality and chronic conditions, is well documented (Juonala et al. 2011; Reilly and Kelly 2011). It is important to address overweight and obesity among teens as obese adolescents are more likely to become obese adults (Deshmukh-Taskar 2006; Guo and Chumlea 1999). One study reported a very strong association between obesity risk at adolescence and obesity at adulthood (RR = 45.1) (Rooney et al. 2011). Overall, 46 % of overweight adolescents (85th percentile) were obese as young adults, while 78 % of obese adolescents (95th percentile) were obese as adults (Rooney et al. 2011). However, the risks of certain chronic conditions among overweight or obese children who became non-obese by adulthood were similar to those among individuals who were never obese (Juonala et al. 2011), indicating that early intervention to address obesity during childhood and adolescence can reduce the likelihood of developing obesity-related chronic conditions in the long term.

Factors Linked to Overweight and Obesity

Although overweight and obesity are complex health conditions, they are essentially caused by an energy imbalance between kcal consumed and kcal expended (1 kcal = 1000 cal) (WHO 2015f); however, there are many other factors that influence this energy imbalance, including genetic, metabolic, behavioral, environmental, cultural, and genetic factors (CDC 2015c). Research suggests that the risk for obesity can begin as early as during gestation. One study reported maternal obesity at pre-pregnancy as a strong predictor of adolescent obesity (RR = 4.57) (Rooney et al. 2011). This corroborates findings from other studies documenting the relationship between maternal overweight and obesity at pre-pregnancy and the increased risk of childhood obesity that persists in adolescence and adulthood (McGuire et al. 2010; Catalano 2003). Gestational weight gain and maternal obesity 4–5 years after pregnancy and up to 12–15 years after pregnancy were also very strong predictors of adolescent obesity (RRs = 2.2, 3.96, and 3.59, respectively) (Rooney et al. 2011).

During childhood, parents influence child eating behavior by selecting foods for the family diet and serving as models of eating behavior (Savage et al. 2007). One study demonstrated a correlation between unhealthy eating behaviors and habits (e.g., eating while standing, eating when bored, and disordered eating) between parents and children. This suggests that parental eating habits and behaviors play a major role in shaping children's eating habits and behaviors, thereby influencing the child's risk for developing obesity (Liu et al. 2012).

Meal patterns also impact weight. Multiple studies have shown that breakfast skipping is associated with higher rates of overweight and obesity (Deshmukh-Taskar et al. 2010; Horikawa et al. 2011; Mota et al. 2008; Murphy 2007; Neumark-Sztainer et al. 2007). Meal frequency also affects BMI as less frequent meals are associated with obesity and/or higher BMI (Mota et al. 2008; Franko et al. 2008; Jääskeläinen et al. 2013; Ritchie 2012). Therefore, nutrition interventions related to breakfast consumption and increased frequency of eating smaller meals may help reduce BMI in adolescents.

In addition, the food environment impacts the food choices and eating patterns of adolescents. For example, findings from a study of over 3400 adolescents in Germany revealed a positive correlation of living in a neighborhood with a high food supply, particularly an energy-dense food supply, and high BMI (Lange et al. 2011). The high food supply was also linked to increased snacking behavior (Lange et al. 2011). Although snacking can help with weight management and increase intake of important nutrients (Keast et al. 2010; Larson and Story 2013), availability of high-calorie, nutrient-poor foods can contribute to an increase in kcal from snacking and is associated with a higher intake of total kcal (Biro and Wien 2010). Undernutrition and food insecurity remain prevalent public health problems; however, the quality of the food available

impacts whether health outcomes are positive (e.g., reduction in nutrient deficiencies) or negative (e.g., overweight and obesity).

Dietary patterns in LMICs have significantly changed from a diet rich in legumes, other vegetables, and whole grains to a diet characterized by high intake of refined carbohydrates, added sugars, fats, and animal-source foods (i.e., the "Western diet") (Popkin et al. 2012). The Western dietary pattern also predominantly includes high-calorie foods and beverages that are nutrient poor, and the increased intake of these foods and beverages is associated with an overconsumption of kcal. The dietary shift in LMICs has been observed in all urban areas but also increasingly in rural areas. The shift is due in part to changes in agricultural policies, food production, and technological developments (Popkin et al. 2012; WHO 2015f). For example, the increased availability of less expensive vegetable oils has led to a threefold-to-sixfold increase in individual intake of vegetable oils between 1985 and 2010 in some developing countries. In China, approximately 300 kcal per day is consumed from vegetable oil (Popkin et al. 2012). Then, too, the ever-increasing availability of sugar-sweetened beverages (SSBs) in the USA has resulted in an increase in added sugars from beverages, which represented approximately one-third of the diet in 1977–1978 and now comprises roughly two-thirds of the diet. In addition, the caloric beverage intake in Mexico has doubled to more than 21 % of the kcal per day from 1996 to 2002 (Popkin et al. 2012). The overconsumption of kcal that is linked with the Western dietary pattern has also been associated with CVD risk factors in adolescent girls (e.g., greater mean values for total cholesterol, waist circumference, and BMI) (Ambrosini et al. 2010).

Nutrition, Physical Activity, and Overweight/Obesity

Although nutrition plays a significant role in weight management and disease prevention, physical activity is a concomitant lifestyle behavior that also has substantial impact. WHO (2015g) guidelines for physical activity for children and adolescents aged 5–17 are as follows:

- Engage in at least 60 min of moderate- to vigorous-intensity physical activity daily.
- Aim for more than 60 min of daily physical activity to provide additional health benefits.
- Include activities that strengthen muscle and bone at least three times per week.

Nevertheless, globally, 81 % of adolescents 11–17 years of age were insufficiently physically active in 2010. Adolescent girls were less active than adolescent boys, with 84 % versus 78 % not meeting WHO guidelines for physical activity (WHO 2015g). Adolescents in the USA are also not meeting the recommended amount of physical activity. According to the Youth Risk Behavior Survey conducted in 2013, only 29 % of high school students reported participating in at least 60 min per day of physical activity on each of the seven days before the survey, and up to 15.2 % of high school students had not participated in 60 or more minutes of any kind of physical activity on any day during the seven days before the survey (CDC 2014e).

Overweight and obesity, including related chronic diseases, are now the leading causes of death and disability around with world; the problem continues to grow. As obesity is difficult to treat (yet largely avoidable), prevention is of utmost importance (Biro and Wien 2010; John Hopkins Medicine n.d.). Strategies and policies that foster environments supporting healthier food choices and regular engagement in physical activity are necessary in order to prevent obesity (WHO 2015f). WHO has provided recommendations for addressing overweight and obesity at the individual and societal levels, including the role the food industry can play in promoting healthy diets among adolescents (WHO 2015f). In addition, the Nutrition and Weight Status objectives for Healthy People 2020 emphasize the evidence-based, health-related benefits of maintaining healthy dietary behaviors and healthy body weight. The objectives also point to the importance of individual behavior change combined with policies and environments that support these changes (USDHHS n.d.c).

Other Critical Nutrition Issues

There are additional critical issues that affect adolescent health and nutrition and can lead to negative repercussions. Some of these critical issues include food insecurity, breakfast skipping, sugar-sweetened beverage consumption, food marketing, body dissatisfaction and disordered eating, and threats to bone health.

Food Insecurity

Inadequate nutrition during childhood and adolescence can negatively impact growth, development, cognition, and overall health in ways that can have long-lasting consequences (Basch 2011; Nord 2009; Shtasel-Gottlieb et al. 2015; USDA 2015a, b; USDA & USDHHS 2010). Inadequate nutrition can take on different forms, including malnourishment from food insecurity and "misnourishment" from eating nutrient-deficient foods (Coleman-Jensen et al. 2014; Massey-Stokes 2002). *Food insecurity* is a term used to describe the lack of access to sufficient nutrition due to inadequate money and other resources (Coleman-Jensen et al. 2014). According to a USDA Economic Research Service report on food security in the USA, 17.5 million households (14.3 %) were food insecure in 2013 (Coleman-Jensen et al. 2014). In families with food insecurity, adolescents are disproportionately impacted by food security as compared to younger children (Nord 2009), possibly due to fewer adolescents participating in federally funded school breakfast and lunch programs. Food insecurity is associated with poor dietary intake and nutritional status, hunger, and compromised health (ADA 2006; Nord 2009). Furthermore, food insecurity impacts the physical, mental, and social-emotional development of young people, which threatens their health and well-being in the present as well as in the future. Research has shown that when compared to children in food-secure households, children who live with food insecurity are more likely to experience negative health-related consequences, such as higher rates of chronic health conditions, lower academic scores, more anxiety and depression, and higher rates of depression and suicidal symptoms during adolescence (ADA 2006; Nord 2009).

The Importance of Breakfast

Breakfast is often touted as the most important meal of the day (Adolphus et al. 2013; Affenito 2007) and appears to be beneficial in health promotion and obesity prevention (Murphy 2007). Eating a healthy breakfast is thought to improve overall nutrient status, enhance memory, improve alertness and mood, reduce school absenteeism, and decrease risk for becoming overweight (Adolphus et al. 2013; Barr et al. 2014; CDC 2011b; Deshmukh-Taskar et al. 2010; Hoyland et al. 2009; Murphy 2007; Rampersaud et al. 2005; Widenhorn-Müller et al. 2008). Breakfast is usually the longest fasting period between meals, and there is some evidence supporting that failing to eat breakfast can prevent the central nervous system from efficiently operating (Benton and Nabb 2003). In a cross-sectional study of 786 adolescents, those who skipped breakfast did not perform as well academically as those who ate breakfast (Boschloo et al. 2012), which corroborated similar findings in other research (Hoyland et al. 2009; Widenhorn-Müller et al. 2008). According to cross-sectional data from the National Health and Nutrition Examination Survey 1999–2006, children and adolescents who consumed ready-to-eat cereal for breakfast had better nutrient intake and body fat indexes than their peers who either skipped breakfast or ate other types of breakfasts (Deshmukh-Taskar et al. 2010). Additionally, cross-sectional data from a large-scale Canadian study revealed that youth who ate breakfast had higher mean intakes of important nutrients, but overall lower fat intakes (Barr et al. 2014). In sum, there is strong evidence to support that eating a healthful breakfast is associated with significant student academic and health outcomes (Murphy 2007). However, despite the multiple benefits of eating a healthy breakfast, studies have indicated that adolescents often skip breakfast, and rates of breakfast

skipping among this age-group range from 10 to 32 % (Deshmukh-Taskar et al. 2010; Rampersaud et al. 2005).

Sugar-Sweetened Beverage Consumption

Sugar-sweetened beverage consumption (SSB) encompasses a variety of beverages with added sugars, including sodas, flavored waters, fruit-flavored drinks that are not 100 % juice, sweetened milk, sports drinks, energy drinks, and tea and coffee drinks (Crawford and Goldstein 2014; Park et al. 2012). Research has shown that sugar-sweetened beverages are the main source of added sugars in the diets of youth in the USA, resulting in increased kcal of extra energy (Ogden et al. 2011; Park et al. 2012; Reedy and Krebs-Smith 2010). Data from the National Health and Nutrition Examination Survey 2005 to 2008 indicated that adolescents and young adults consume more SSBs than other age-groups. In addition, males consume more sugar drinks than females, and non-Hispanic black children and adolescents drink more sugary beverages in their overall diet than their Mexican-American peers (Ogden et al. 2011). In addition, data from the 2010 National Youth Physical Activity and Nutrition Study (NYPANS) revealed that approximately two-thirds (64 %) of high school students drank some type of SSB at least one or more times per day, and roughly 22 % drank SSBs three or more times daily. Although soda was the SSB of choice, high school students also reported frequently consuming sports drinks and other SSBs. Findings indicated that teens may be consuming as much as ¾ cups of sugar daily from SSBs. Factors that were associated with high SBS consumption were being male and non-Hispanic black, frequent use of fast-food establishments, and extensive television viewing (Park et al. 2012).

The increase in kcal from consuming SSBs has been associated with overweight and obesity, hypertension, metabolic syndrome, and diabetes (Brown et al. 2011; Ebbeling et al. 2012; Fiorito et al. 2009; Ludwig et al. 2001; Malik et al. 2010; Reedy and Krebs-Smith 2010; USDA & USDHHS 2010). However, Gibson (2008) contended that there is insufficient evidence from epidemiological studies pointing to SSBs as being more obesogenic than any other source of energy. Other health issues that have been linked to SSB consumption include dental caries, behavioral problems, and displacement of nutritious foods in the daily diet (Armfield et al. 2013; Lien et al. 2006; Marshall et al. 2005; Sohn et al. 2006).

In addition, many sugary sports and energy drinks are marketed to adolescents as performance and energy boosters; however, many adolescents and their parents are unaware of some of the adverse effects of consuming these drinks. For example, many contain a combination of sugar, stimulants such as caffeine and guarana, and other substances that can increase stress, anxiety, headaches, and insomnia. Furthermore, consuming these drinks can result in elevated blood pressure and cardiac arrhythmia (AAP & Committee on Nutrition and the Council on Sports Medicine and Fitness 2011; Crawford and Goldstein 2014; Seifert et al. 2011). The AAP Committee on Nutrition and the Council on Sports Medicine and Fitness (2011) contended that many people confuse sports and energy drinks. Sports drinks are intended to replenish water and electrolytes lost through sweating during exercise. Although teen athletes who engage in prolonged and vigorous exercise can benefit from sports drinks that contain carbohydrates, proteins, or electrolytes, the average teen engaging in physical activity can obtain adequate hydration from water alone. In contrast, energy drinks have no therapeutic benefit and may cause adverse health effects in youth, such as seizures, diabetes, hypertension, cardiac abnormalities, and anxiety and behavioral and sleep disturbances (AAP & Committee on Nutrition and the Council on Sports Medicine and Fitness 2011; Seifert et al. 2011).

Food Marketing

More than $10 billion per year is spent for food and beverage marketing to children and adolescents in the USA (IOM 2006). There is robust

evidence that food marketing influences children and adolescents' food and beverage preferences, purchases, and consumption (AAP Committee on Nutrition and the Council on Sports Medicine and Fitness 2011; Crawford and Goldstein 2014; Dembeck et al. 2014; Harris et al. 2014; Healthy Eating Research 2015; IOM 2006; Scully et al. 2012; Seifert et al. 2011; Wilking et al. 2013). Moreover, the Institute of Medicine (IOM) (2006) asserted that food marketing is a risk factor for unhealthy dietary behaviors that contribute to childhood obesity. There are also concerns that food marketers are increasingly targeting African-American and Latino youth, who experience high childhood obesity rates (Healthy Eating Research 2015). Food marketers employ multiple platforms to reach children and adolescents, such as food packaging, print media, television and movies, Web sites, social media sites, mobile apps, and advergames (Healthy Eating Research 2015; Richardson and Harris 2011; Wilking et al. 2013).

Food marketers are aware of teens' high technology usage and tailor advertising accordingly. For example, in 2013, adolescents viewed an average of 16.5 food ads daily, a 25 % increase compared to 2007, and fast-food advertising represented 28 % of those ads. Furthermore, from 2007 to 2013, candy advertising directed at adolescents increased 2.7 times (Dembek et al. 2014). A study of 12,188 Australian students aged 12–17 also revealed that those who watched more than two hours of television daily reported higher consumption of fast food, sugary drinks, and sweet and salty snacks compared to their peers who did not watch television (Scully et al. 2012). In addition, food marketing often transpires via channels that may be less evident, e.g., via digital marketing. Digital food marketing differs from traditional marketing tactics in strategic ways:

- Digital marketing is more subtle and therefore more difficult for youth to identify as full-scale marketing.
- Digital marketing is engaging, interactive, and delivered online and via mobile devices.
- Adolescent consumers are highly influenced by social norms and motivated to fit in with their peers; therefore, digital marketing through social media can be very seductive.
- Digital marketers have instant access to a large amount of consumer data that they use to target specific audiences and tailor their messages accordingly in order to maximize food and beverage sales (Healthy Eating Research 2015; Richardson and Harris 2011; Wilking et al. 2013).

Researchers at the Rudd Center for Food Policy & Obesity at Yale University examined food marketers' promotion of products and brands on three major social media Web sites—Facebook, Twitter, and YouTube. Restaurant and sugary drink Facebook pages encouraged teen interaction through various features, including profile pictures, logos, contests, polls, photographs, and videos. Outbound links were additional tools to motivate teens to interact with the brand outside of Facebook. Twitter accounts were also maintained by restaurants, and sugary drink companies often used Twitter as a customer service link. Additionally, similar to Facebook, marketers used tweets to encourage further brand engagement on other platforms. YouTube was also an active food-marketing vehicle, with some of the food and beverage videos reaching an accumulated total of over 40 million views. Therefore, digital marketing media appears to be highly effective in influencing adolescent consumer decisions (Richardson and Harris 2011).

Body Dissatisfaction and Disordered Eating Among Adolescent Females

Body Dissatisfaction

Body dissatisfaction, or a negative perception regarding one's body weight and shape (Thompson et al. 1999), is prevalent among adolescent females (Abebe et al. 2012; Bearman et al. 2006; Jones 2004; Lam and McHale 2012; Robert-McComb and Massey-Stokes 2014; Westerberg-Jacobson et al. 2012). Body dissatisfaction is so pervasive that it has been depicted as "normative discontent" (Rodin et al. 1985),

which has trickled down to include young girls (Dohnt and Tiggemann 2004, 2005, 2006; Westerberg-Jacobson et al. 2012). Risk factors such as perceived sociocultural pressure to be thin and thin-ideal internalization have been strongly linked to body dissatisfaction and dieting (Stice 2002), particularly when girls receive negative appearance comments from parents and peers (Cordero and Israel 2009; Rodgers et al. 2009). In turn, body dissatisfaction and dieting are considered precursors to the development of disordered eating and clinical eating disorders (Herpertz-Dahlmann 2015; Stice 2002).

Disordered Eating

Subthreshold eating conditions (e.g., disordered eating) and clinical eating disorders are important public health concerns (Swanson et al. 2011; Eating Disorders Victoria 2015; NEDA n.d.b). Disordered eating has been defined as a wide range of atypical eating behaviors that do not meet clinical criteria for a diagnosable eating disorder (Eating Disorders Victoria 2015). Signs and symptoms of disordered eating include self-worth based on body shape and weight, frequent dieting, regular meal skipping, chronic restrained eating, binge eating, purging through self-induced vomiting or misusing laxatives or diuretics, and obsessive calorie counting. Although body dissatisfaction and disordered eating have primarily been considered concerns among Caucasian adolescent females, the epidemiology has been slowly evolving. Within the past 20 years, these problems have become more prevalent among males (Abebe et al. 2014; APA 2013; Ricciardelli and McCabe 2004) and ethnic minorities (APA 2013; Cabral et al. 2015; Jung and Forbes 2012; Levine and Smolak 2010; Marques et al. 2011) and in various global regions (APA 2013; Chen and Jackson 2012; Swami et al. 2010). Body dissatisfaction and disordered eating can negatively impact health and well-being—physically, mentally, emotionally, socially, and spiritually. If left untreated, more serious problems can develop, such as anxiety, depression, and clinical eating disorders (APA 2013; Eating Disorders Victoria 2015; NEDA n.d.a). Furthermore, behavioral problems in early adolescence and purging in middle adolescence may predict eating pathology that persists in young adulthood (Allen et al. 2013).

Eating Disorders

Clinical eating disorders are among the most prevalent disorders among adolescents, and the peak age of onset is between 14 and 19 years of age (Herpertz-Dahlmann 2015). The APA Diagnostic and Statistical Manual (DSM-5™) includes anorexia nervosa and its subtypes, bulimia nervosa, binge-eating disorder, and other specified feeding or eating disorder as the main types of eating disorders that affect adolescents (APA 2013). Eating disorders are highly complex, and the causes are unclear. However, a host of risk factors can play a role in the development of eating disorders, including genetic and physiological factors, temperament and personality, family dynamics and environment, and sociocultural influences (APA 2013; NEDA n.d.a). Eating disorders, predominantly anorexia nervosa, have the highest mortality rates among mental illnesses (Smink van et al. 2012). In addition, eating disorders are often associated with other problems such as psychiatric comorbidity (e.g., bipolar and depressive disorders, borderline personality disorder, obsessive–compulsive disorders, and substance abuse disorders); difficulty in completing normal, daily tasks and functions; and elevated suicide risk. When left untreated, the consequences can be dire, including death (APA 2013; Smink et al. 2012; Swanson et al. 2011).

Female Athlete Triad

The female athlete triad is a related facet of body dissatisfaction and disordered eating that can affect adolescent girls engaged in athletic activities, particularly those activities where body weight matters (e.g., ballet, diving, gymnastics, figure skating, running, and cheer). The female

athlete triad refers to three interrelated conditions —low energy availability (with or without a clinical eating disorder), menstrual dysfunction, and low bone mineral density, all of which can pose deleterious and long-lasting consequences to physically active females (American College of Sports Medicine 2011; Nazem and Ackerman 2012; Robert-McComb and Cisneros 2014). The female athlete triad is considered to be a serious medical condition that requires immediate attention. The recommended treatment involves a coordinated, multidisciplinary team approach involving a physician specialist; registered sports dietician; licensed mental health professional; and a strong support network of family, friends, teammates, and coaches (American College of Sports Medicine 2011). Although most studies of the female athlete triad have focused on college-aged or elite athletes, there are data to suggest that conditions associated with the triad exist in high school female athletes; therefore, screening for disordered eating and menstrual irregularity in high school athletes is warranted (Nichols et al. 2006).

Nutrition for Bone Health

It is crucial for children and adolescents to consume milk and other dairy products in order to achieve healthy bone mass throughout life (Bailey et al. 2000; Greer, Krebs & The Committee on Nutrition 2006; Weaver and Boushey 2003). The most critical period for bone growth is during puberty (Gilsanz et al. 2011; Prentice 2015), and bone mass for girls reaches its maximal increase between the ages of 11 and 14 (Misra and Klibanski 2006). However, many adolescents do not consume the recommended daily amounts of key bone-building nutrients such as calcium and vitamin D that milk provides (Gordon et al. 2004; Greer et al. 2006; Kranz et al. 2007; Nicklas et al. 2009). In many cases, SSBs displace milk and other nutritious food consumption (Crawford and Goldstein 2014). In addition, adolescents who engage in disordered eating are likely deficient in important bone-building nutrients. Therefore, all teens need to be intentional about consuming fat-free or low-fat milk and other dairy products. Even those who experience lactose intolerance can drink small amounts of milk and substitute nondairy calcium-rich foods. Similarly, adolescents who consume a vegetarian diet must be proactive in ensuring that they are meeting their nutritional needs, particular for healthy bone accrual. If necessary, bioavailable calcium supplements may also be taken (Greer et al. 2006) to help fill the nutritive gap.

Teens and Technology

Technology also impacts adolescent nutrition in multifarious ways. According to Pew Research Center (2015), 88 % teens in the USA aged 13–17 have (or have access to) a mobile phone, and a majority of teens (73 %) have smartphones. In addition, 87 % of teens in the USA have (or have access to) a desktop or laptop computer, and 58 % have (or have access to) a tablet. Additionally, according to a Kaiser Family Foundation Study, young people aged 8–18 consume media approximately 7½ hours per day and seven days a week. Moreover, because they often use more than one medium at a time, young people actually pack approximately 10 h and 45 min of media into their day (Rideout et al. 2010). In a study conducted by the Center on Media and Human Development at Northwestern University with a large, nationally representative sample of adolescents, researchers examined how teens aged 13–18 use the Internet for health information. Study findings revealed that 84 % of teens use the Internet to retrieve health information, and approximately 21 % have downloaded health-related apps for their mobile devices. Although teens consult social networking sites for health information, most teens reported they would not post a query on this type of Web site. Most teens use the Internet for information related to health promotion and

preventative health as opposed to information related to diagnoses or treatment, with fitness and nutrition being the most popular health topics to search. Moreover, nearly one in 10 teens (32 %) reported having changed behavior based on digital health information or tools (Center on Media and Human Development 2015).

Health Communication for Teens

The soaring technology use among adolescents has widespread implications for health communication targeting this age-group. Health communication has been defined as "the study and use of communication strategies to inform and influence individual and community decisions that affect health" (USDHHS 2015, para. 1). Health communication strategies and interventions are an integral component of an overall social cognitive and ecological approach to promote adolescent nutrition. Through the health communication process, "… information is received and processed through individual and social prisms that not only determine what people encounter (through processes of selective exposure), but also the meaning that they derive from the communication (known as selective perception), depending upon factors at both the individual (prior experience, efficacy beliefs, knowledge, etc.) and the macro-social (interpersonal relationships, cultural patterns, social norms) levels" (Rimal and Lapinski 2009, para. 4). Health communication strategies that are user-centered and delivered via various media channels can be particularly effective with adolescents. Health promotion professionals and others who target teens with health communication are increasingly using the online landscape to do so, for instance, via texting campaigns, social media platforms, and Web sites (Center on Media and Human Development 2015). In order to ensure that nutrition-related health communication strategies meet adolescents' interests and needs, it is essential to conduct formative evaluation, needs assessment, and pretesting of the nutrition messages with the target audience (Rimal and Lapinski 2009; Parvanta et al. 2011).

Linking Theory with Practice

According to WHO (2015d), health promotion "is the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions" (para. 1). Health promotion is an essential part of the equation to address the complexities of adolescent nutrition, which requires attention and action at multiple levels of influence. Conceptual frameworks, such as health behavior and health education theories and models, help guide the health promotion process as "they enrich, inform, and complement the practical technologies of health promotion and education" (Glanz et al. 2015, p. 37). The ecological model is an efficacious framework for planning and implementing health promotion interventions aimed at changing intrapersonal, interpersonal, organizational/institutional, community, and public policy factors to support and maintain healthy behavior change (McLeroy et al. 1988; Sallis and Owen 2015). In other words, behavior change can be fostered when individuals are motivated and educated to make healthful choices, and environments and policies are in place to support those choices (Sallis and Owen 2015). The ecological perspective also takes into account that "individual health behavior both shapes, and is shaped by, the social environment (*reciprocal causation*)" (USDHHS 2005, p. 10). Thus, the ecological perspective can provide unique insight into adolescent development, interpersonal relationships, and interactions at the broader level of community and society (Smetana et al. 2006). Additionally, ecological models can serve as useful frameworks for integrating other health behavior theories, which can then lead to the development of more comprehensive health behavior interventions (Sallis and Owen 2015)

aimed at increasing healthy dietary behaviors among adolescents.

Within the ecological model, there are important factors that can impact adolescent dietary behaviors at different levels of influence: *Intrapersonal*—Characteristics of the individual that influence behavior (e.g., knowledge, attitudes, beliefs, self-esteem, self-efficacy, personality, and other personal traits);
Interpersonal—Members of social networks such as family, peers, teachers, and coaches who provide social identity, support and validation, and role definition;
Organizational/Institutional—Attributes and environmental characteristics that can either support or discourage healthy behavior (e.g., school-based nutrition environment and services);
Community—Social environments, settings, and networks that provide resources, norms, and context for health behavior; and
Public Policy—Local, state, and federal policies and laws that regulate or support health behaviors (McLeroy et al. 1988; Sallis and Owen 2015; USDHHS 2005).

Social cognitive theory (Bandura 1986) is another theoretical framework that dovetails with the ecological perspective to assist health education/promotion professionals in fostering healthy dietary behaviors among teens. According to social cognitive theory, health behavior results from the dynamic interaction between personal cognitive, socioenvironmental, and behavioral factors. For example, personal cognitive factors such as self-efficacy (confidence to successfully engage in a particular behavior) and outcome expectations (personal judgment regarding the outcome of engaging in a behavior) can act as powerful behavior change agents. Socioenvironmental factors can promote or discourage a particular health behavior, such as observational learning (learning that occurs when an individual observes others and the consequences of their actions), normative beliefs (perceptions about the prevalence and social acceptability of a behavior), social support, and barriers and opportunities connected to a health behavior change. Behavioral factors include behavioral skills, intentions to perform the behavior, and reinforcement or punishment that can either increase or decrease a certain behavior (Kelder et al. 2015).

Recommendations for Fostering Healthful Dietary Behaviors Among Adolescents

Adolescent dietary behaviors are influenced by multifarious factors, including families, peers, schools, communities, healthcare providers, media, food and beverage industries, the entertainment industry, and government agencies. Each of these influences can play a significant role in improving the dietary behaviors of teens (CDC 2011b). Adolescent nutrition can be addressed through a social cognitive and ecological approach to enhance the design and implementation of a wide range of strategies and interventions aimed at helping teens adopt healthy eating habits (Massey-Stokes 2002; Massey-Stokes et al. 2012). Many strategies blend across levels of influence and therefore can be considered cross-categorical. It is also important to emphasize that teens are more likely to adopt healthy eating habits when multiple layers of influence are integrated in such a way that the resulting synergy can translate into long-term, sustainable behavior change. Moreover, it is valuable to involve adolescents in the planning and pilot testing of interventions to ensure that they meet the unique developmental needs and interests of the target audience.

An overview of recommendations and strategies to promote healthy dietary behaviors among adolescents is presented below. The recommendations and strategies are organized under levels of influence from the ecological model blended with the triad of social cognitive theory factors that influence health behavior (i.e., personal cognitive, socioenvironmental, and behavioral factors).

Individual/Personal and Cognitive Factors

Strategies and interventions aimed at the individual can be designed to promote knowledge, attitudes, beliefs, and behaviors that lead to healthy eating and weight management among teens. Specific approaches may include building awareness, educating about what constitutes a healthful diet and healthy weight management, and helping teens develop relevant life skills to support healthy nutrition-related behaviors. Studies have shown that many adolescents experience barriers to healthy eating, such as lack of knowledge about how to prepare healthy foods, preference for fast food, lack of time, and lack of peer support (Croll et al. 2001; Thompson et al. 2012). Moreover, as discussed earlier, the ubiquitous media presence in adolescents' lives presents further challenges to healthy eating. Therefore, nutrition education for adolescents can include information and skill-building regarding media literacy, how to purchase and prepare healthy meals and snacks, and how to make wiser choices at snack bars and fast-food restaurants, in addition to time and life management techniques that accommodate healthy nutritional and weight management practices. In addition, adolescents and their parents can benefit from learning about the differences between sports and energy drinks and their potential health risks (AAP CON & CSMF 2011; Seifert et al. 2011).

Furthermore, fostering adolescents' self-efficacy for healthy behavior change is paramount. Adolescents need to feel confident in their ability to make healthy food and beverage choices and then sustain healthy dietary behaviors even when they are faced with challenges (e.g., lack of healthy food in the home, peer influence to eat unhealthy foods, ubiquitous fast-food restaurants, and unhealthy food marketing). It is important to keep in mind that self-efficacy is often situational (Kelder et al. 2015); therefore, an adolescent who is confident in her ability to prepare healthy snacks and meals (self-efficacy for snack and meal preparation) may have low confidence in making healthy choices when eating out with friends (self-efficacy for food selection when away from home). Self-efficacy can be fostered through different means, one of which is through previous mastery experiences. For example, coaching an adolescent to take baby steps toward achieving a dietary goal (mastery experience) can increase self-efficacy and therefore increase the likelihood that the behavior will be repeated (Kelder et al. 2015).

Due to teens' widespread use of computers and smartphones and their interest in digital health information and tools, Facebook, Instagram, Snapchat, Tumblr, Vine, and other platforms can be used to communicate to adolescents about nutrition, fitness, and other health and wellness topics. In addition, multimedia and Web-based behavioral intervention programs for adolescents have been successful at promoting healthy dietary and physical activity behaviors (Chen et al. 2011; Cullen et al. 2013; Mauriello et al. 2010). These programs can be particularly attractive to teens when they are interactive and accessible via any computer or mobile device with Internet access. For example, Chen et al. (2011) developed a Web-based nutrition and physical activity intervention to foster self-efficacy and enhance problem-solving skills among Chinese American adolescents. The nutrition component of the curriculum consisted of information relating to the food groups, portion size, and meal planning. The teen participants used an interactive dietary preparation software to prepare Chinese food and see nutritional information of the various foods. The participants also learned how to set personal goals to improve their dietary behaviors. Study results revealed improvements in waist-to-hip ratio, diastolic blood pressure, fruit and vegetable intake, and physical activity (Chen et al. 2011).

Teen Choice: Food and Fitness is another promising online program for improving adolescent eating and physical activity behaviors. The program design is based on formative research conducted with teens and includes "teen video clips" (short, animated role model stories); teen and parent food recipes; a healthy eating calculator; a refereed blog; and opportunities for

teens to problem solve, set goals, make action plans to accomplish the goals, and report goal accomplishment (Thompson et al. 2012). Evaluation of the nutrition component of the program revealed that the interactive Web site helped adolescents improve their vegetable intake. Furthermore, the 75 % log-on rate indicated that the online program was appealing and motivated the teens to participate (Cullen et al. 2013).

In addition, *Health in Motion* is an evidence-based multimedia program designed to help adolescents make positive changes in lifestyle behaviors related to health promotion and obesity prevention—fruit and vegetable consumption, increased physical activity, and limited TV viewing (Mauriello 2010). The Internet-based program includes components to capture teens' interest, including interactive animations; voice-overs read by teens; and videos depicting adolescents encouraging and motivating each other to eat healthy, exercise, and limit TV viewing (Pro-Change® Behavioral Systems, Inc. n.d.). One of the unique features of this program is that it is individualized and based on theoretical constructs of the transtheoretical model (TTM) and stages of behavior change (Mauriello et al. 2010). The TTM is a model that takes into account different stages and processes integral to behavior change, thereby allowing health promotion professionals to tailor messages, strategies, and interventions to fit the individual's readiness to engage in the target behaviors (Prochaska and DiClemente 1983; Prochaska et al. 2015). Evaluation results for the nutrition portion of *Health in Motion* showed that teens participating in the program significantly increased their fruit and vegetable intake as compared to the control group. Moreover, the program was shown to be effective in initiating behavior change across multiple behaviors related to energy balance and prevention of overweight and obesity (e.g., increased fruit and vegetable intake, increased physical activity, and limited television viewing). Overall, *Health in Motion* was shown to be feasible to implement with adolescents, indicating that program dissemination can be successfully achieved (Mauriello et al. 2010).

Interpersonal/Socioenvironmental Factors

Due to the reciprocal interplay that takes place with the individual, environment, and health behavior (Bandura 1986), socioenvironmental factors, such as family, friends, and peer networks, can serve as powerful influences on adolescents' dietary behaviors, particularly through modeling, reinforcement, social support, and perceived norms (Story et al. 2002).

Family

Observational learning (Bandura 1986) can be a powerful shaper of behavior, and adolescents can benefit from having parents and other adults model various life skills associated with healthy dietary behaviors, such as menu planning, grocery shopping, food label reading, snack and meal preparation, selecting nutritious foods and beverages at restaurants and social gatherings, and engaging in healthy weight management practices. As adolescents continue to develop their ability to think critically and make sound decisions, they can benefit from opportunities to apply their cognitive and behavioral skills to menu planning and preparation of snacks and meals for the family. Another creative strategy involves the use of a portion plate designed by teens, which may help them make more healthful food choices and boost parents' self-efficacy for promoting healthful eating and portion size within the home (Bohnert et al. 2011). In addition, positive reinforcement and social support integrate with observational learning to help adolescents overcome barriers to healthy eating. For example, families can intentionally eat more nutritious meals together at home, which can boost adolescent nutrition and prevent weight gain (Loth et al. 2013), enhance interpersonal communication skills, and foster the positive reinforcement and social support that bolsters healthy behavior change. Regular family meals have also been shown to promote emotional well-being and may protect against negative health-related outcomes in teens, such as depression, substance abuse, and violence (Goldfarb

et al. 2015). Other recommended family-based practices to promote healthy eating and prevent overweight and obesity include ensuring that healthy food and beverages are available in the home, modeling healthy eating behaviors, and encouraging adolescents to self-regulate their dietary intake (Loth et al. 2013). Teens and their families can also intentionally engage in meaningful dialogue and practices concerning positive body image, healthy weight management, and media literacy. To foster these healthy dietary practices, families can set nutrition-based goals together and devise a health-promoting reward system for meeting those goals—individually and collectively. Online and other interactive tools can be effective with adolescents, such as the USDA http://www.choosemyplate.gov/index.html. This is the current nutrition guide published by the US Department of Agriculture. It is a food pie chart, which looks like a plate and glass divided into five food groups. It replaced the USDA's MyPyramid guide on June 2, 2011, ending 19 years of USDA food pyramid diagrams (http://www.choosemyplate.gov/MyPlate) (USDA n.d.a). And SuperTracker will help young people to plan, analyze, and keep track of their diet and physical activity. It also helps to determine what and how much to eat and track foods, physical activities, and weight (https://www.supertracker.usda.gov/Documents/SuperTracker_10_Tips.pdf (USDA n.d.b).

Friends and Peer Networks

Peer relationships are very important during adolescence, and nutrition interventions that capitalize on positive peer influences and promote interpersonal skills can be important in promoting adolescent nutritional health. Peers also help create behavioral norms (Story et al. 2002), which may affect teens' food and beverage choices. However, peer influence on adolescent dietary behaviors may be indirect rather than direct (Story et al. 2002). According to a study by Thompson and colleagues (2012), adolescents identified peer influences and norms as barriers to healthy eating, such as being teased for eating healthy foods and having few or no friends who eat healthy foods (including at restaurants). Therefore, strategies aimed at changing social norms regarding teen dietary behaviors can be helpful, such as those involving positive adolescent role models and peer education.

Peer education strongly connects to social cognitive theory and can be a catalyst for healthy behavior change. According to Bandura (1986), adolescents are more likely to engage in behavior change when their educator is similar in age, gender, or race/ethnicity and demonstrates social support. Thus, a peer education component can be very successful in promoting social norms for healthy eating (Croll et al. 2001) and has been demonstrated to be effective in promoting healthy eating and physical activity among girls (Golman 2009). Additionally, results from a process evaluation implied that school-based, peer-led nutrition education programs are a viable approach that can guide peer-led interventions used in other settings to promote healthy dietary behaviors in adolescents (Story et al. 2002).

Then too, peer modeling and social learning can occur informally as well because teens can gain insight from their friends and other peer networks regarding wise nutritional choices. Peer modeling often intersects with the social media environment via Snapchat, Instagram, Facebook, Pinterest, Twitter, and other platforms, and new media will continue to evolve to capture the attention of adolescents. The pervasiveness of new media has expanded the concept of the peer group (Sawyer et al. 2012), and these interactions foster interpersonal communication and that can change social norms encompassing adolescent food and beverage consumption.

Health and wellness coaching is another interpersonal avenue that holds potential for impacting dietary and weight management

behaviors of adolescents. Certified health and wellness coaches partner with their clients and help them move toward self-directed, lasting behavior change to enhance health and wellness (National Consortium for Credentialing Health and Wellness Coaches 2015). Health and wellness coaches can work with adolescents in a variety of settings, including schools, health care, youth-serving agencies and organizations, and private practice. The role of the health and wellness coach in adolescent nutrition is to create a mutually respectful partnership, provide resources, foster goal setting and self-efficacy, help deal with barriers to healthy eating, create personal accountability, and promote personal development that focuses on the whole person. Health and wellness coaching is designed to accompany and guide the clients along the path to lasting and meaningful behavior change; coaching can also help adolescents build strong, positive social support systems (Arloski 2009), which can help reinforce their healthy dietary behaviors. The personal engagement and emotional support that underlie coaching can be particularly helpful in addressing nutrition challenges identified by adolescents. Personal goals can focus on a variety of nutrition-related topics, such as eating a more nutritious diet at home, school, and restaurants; developing media literacy; adopting and maintaining positive body image; and engaging in healthy weight management practices. Coaching can help adolescents expand communication, critical thinking, and problem-solving skills as well as develop self-determination and self-efficacy, all of which are essential to navigate the behavior change process and life as a whole.

Organizational/Community/Socioenvironmental Factors

Schools

According to the CDC (2015e), the vast majority (91 %) of adolescents in the USA aged 10–19 are enrolled in school; therefore, schools are in a prime position to promote health behaviors in teens. More than 35 % of children's and adolescents' daily caloric intake occurs at school (Briefel et al. 2009, as cited in Healthy Eating Research and Bridging the Gap 2012), which presents a ripe opportunity for schools to foster healthy nutrition and weight management among teens. Studies have indicated that school-based programs can improve students' dietary attitudes, knowledge, and behaviors, albeit with varying levels of results (Callaghan et al. 2010; McKinney et al. 2014; Ruxton and Derbyshire 2014; Slawta and DeNeui 2010). Programs that adopt a comprehensive, ecological approach can focus on nutrition education and skill development at the individual level; interpersonal influence through family involvement, peer education, and social norms; collaboration at the community level, such as farm-to-school programs that connect local farmers and their fresh produce to school cafeterias (Sallis and Glanz 2009) and nutrition and fitness fairs for the entire family; and the development and implementation of supporting policies, such as restricted access to SSBs and competitive foods during the school day and access to drinking water (CDC 2014d; Healthy Eating Research and Bridging the Gap 2012; Park et al. 2012; Story et al. 2002).

It is important for school programs and policies to align with the *School Health Guidelines to Promote Healthy Eating and Physical Activity* (CDC 2011b, 2011c; 2014c), which are based on research and evidence-based practice. For each of the nine guidelines, there are strategies and resources to help ensure the development of effective and feasible school-based practices promoting nutrition and physical activity (CDC 2014c) (see Table 11.1). School-based nutrition strategies and programs also integrate with the Whole School, Whole Community, Whole Child (WSCC) model. Adopting an ecological approach, the WSCC model blends coordinated school health components with the whole child framework (Association for Supervision and Curriculum Development 2014). Therefore, the WSCC model is a logical vehicle for promoting healthy adolescent dietary and physical activity behaviors that play an integral role in health

Table 11.1 School Health Guidelines to Promote Healthy Eating and Physical Activity

Guidelines	Strategies
1. Use a coordinated approach to develop, implement, and evaluate healthy eating and physical activity policies and practices	• Coordinate healthy eating and physical activity policies and practices through a school health council and school health coordinator
	• Assess healthy eating and physical activity policies and practices
	• Use a systematic approach to develop, implement, and monitor healthy eating and physical activity policies
	• Evaluate healthy eating and physical activity policies and practices
2. Establish school environments that support healthy eating and physical activity	• Provide access to healthy foods and physical activity opportunities and to safe spaces, facilities, and equipment for healthy eating and physical activity
	• Establish a climate that encourages and does not stigmatize healthy eating and physical activity
	• Create a school environment that encourages a healthy body image, shape, and size among all students and staff members, is accepting of diverse abilities, and does not tolerate weight-based teasing
3. Provide a quality school meal program and ensure that students have only appealing, healthy food and beverage choices offered outside of the school meal program	• Promote access to and participation in school meals
	• Provide nutritious and appealing school meals that comply with the *Dietary Guidelines for Americans*
	• Ensure that all foods and beverages sold or served outside of school meal programs are nutritious and appealing
4. Implement a comprehensive physical activity program with quality physical education as the cornerstone	• Require students in grades K12 to participate in daily physical education that uses a planned and sequential curriculum and instructional practices that are consistent with national or state standards for physical education
	• Provide a substantial percentage of each student's recommended daily amount of physical activity in physical education class
	• Use instructional strategies in physical education that enhance students' behavioral skills, confidence in their abilities, and desire to adopt and maintain a physically active lifestyle
	• Provide ample opportunities for all students to engage in physical activity outside of physical education class
	• Ensure that physical education and other physical activity programs meet the needs and interests of all students
5. Implement health education that provides students with the knowledge, attitudes, skills, and experiences needed for lifelong healthy eating and physical activity	• Require health education from prekindergarten through grade 12
	• Implement a planned and sequential health education curriculum that is culturally and developmentally appropriate, addresses a clear set of behavioral outcomes that promote healthy eating and physical activity, and is based on national standards
	• Use curricula that are consistent with scientific evidence of effectiveness in helping students improve healthy eating and physical activity behaviors
	• Use classroom instructional methods and strategies that are interactive, engage all students, and are relevant to their daily lives and experiences

(continued)

Table 11.1 (continued)

Guidelines	Strategies
6. Provide students with health, mental health, and social services to address healthy eating, physical activity, and related chronic disease prevention	• Assess student needs related to physical activity, nutrition, and obesity and provide counseling and other services to meet those needs
	• Ensure students have access to needed health, mental health, and social services
	• Provide leadership in advocacy and coordination of effective school physical activity and nutrition policies and practices
7. Partner with families and community members in the development and implementation of healthy eating and physical activity policies, practices, and programs	• Encourage communication among schools, families, and community members to promote adoption of healthy eating and physical activity behaviors among students
	• Involve families and community members on the school health council
	• Develop and implement strategies for motivating families to participate in school-based programs and activities that promote healthy eating and physical activity
	• Access community resources to help provide healthy eating and physical activity opportunities for students
	• Demonstrate cultural awareness in healthy eating and physical activity practices throughout the school
8. Provide a school employee wellness program that includes healthy eating and physical activity services for all school staff members	• Gather data and information to determine the nutrition and physical activity needs of school staff members and assess the availability of existing school employee wellness activities and resources
	• Encourage administrative support for and staff involvement in school employee wellness
	• Develop, implement, and evaluate healthy eating and physical activity programs for all school employees
9. Employ qualified persons and provide professional development opportunities for physical education, health education, nutrition services, and health, mental health, and social services for staff members as well as staff members who supervise recess, cafeteria time, and out-of-school-time programs	• Require the hiring of physical education teachers, health education teachers, and nutrition services staff members who are certified and appropriately prepared to deliver quality instruction, programs, and practices
	• Provide school staff with annual professional development opportunities to deliver quality physical education, health education, and nutrition services

Source Centers for Disease Control and Prevention (2014c)

promotion and the prevention of childhood overweight and obesity (see Table 11.1; Fig. 11.1)

Community

According to Patton and Sawyer (2015), "the lives of young people are generally deeply imbedded in their community and the behaviors, norms and values of adults around them" (p. 12). Therefore, the broader community can strongly influence adolescent nutrition via settings such as offices of registered dieticians, healthcare clinics, churches and other places of worship, youth-serving organizations (e.g., Boys and Girls clubs and Girl Scouts), community food and nutrition education programs, community health education/promotion programs, and youth-focused gyms and sports clubs. As a starting point, there are numerous strategies and interventions that can be implemented, and a committed coalition of various stakeholders (including adolescents) can review recommended

Fig. 11.1 Whole School, Whole Community, Whole Child (WSCC) model. *Source* Reprinted with the permission from Association for Supervision and Curriculum Development (ASCD) and US Centers for Disease Control and Prevention (CDC)

and best practices. In order to review recommended practices and obtain information and tools related to the topic of nutrition (along with numerous other health topics), community stakeholders can consult *The Guide to Community Preventive Services,* which is a free resource to help guide program and policy development for health promotion and disease prevention (USA.gov 2012).

Regardless of the setting, the *Dietary Guidelines for Americans* is a tool that can be used to develop educational materials, programs, and policies to promote healthy dietary patterns among adolescents and their families (USDA & USDHHS 2010). There are also numerous Web sites that contain guidelines and materials to facilitate health promotion through nutrition education, including the Web sites:

http://www.aicr.org/reduce-your-cancer-risk/diet/, http://www.cdc.gov/nutrition/, http://www.choosemyplate.gov/, https://www.supertracker.usda.gov/default.aspx, http://www.diabetes.org/, http://www.eatright.org/resources/for-teen, http://www.girlshealth.gov, http://fnic.nal.usda.gov/lifecycle-nutrition/fitness-and-sports-nutrition, https://www.healthychildren.org/english/healthy-living/nutrition/pages/default.aspx, http://healthfinder.gov/HealthTopics/Category/nutrition-and-physical-activity, and http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Nutrition-Center_UCM_001188_SubHomePage.jsp.

Policy/Socioenvironmental Factors

In order to foster meaningful and sustainable change that is required for the complexity of dietary behaviors, broader environmental, policy, and social changes are warranted. Evidence

indicates that environmental and policy changes and standards are successful in altering diet and physical activity behaviors for positive health benefits in children, adolescents, and adults (USDA 2015a, b). Policies are the main vehicle for driving environmental changes related to food and nutrition and include rules, laws, and regulations at various levels (e.g., government, industry, worksites, schools, and family) (Sallis and Glanz 2009). When policy is combined with multifaceted programs (e.g., nutrition education and behavioral interventions involving the individual and family, and food labeling and nutrition standards), there is a greater opportunity to increase healthy food choices, improve overall dietary quality, and prevent overweight and obesity (USDA 2015a, b).

According to Sallis and Glanz (2009), "the most promising, and most active, area for policy change is providing calorie, fat, and other nutritional information on menus" (p. 137). Results from a health impact assessment indicated that menu labeling laws had a beneficial effect on customer purchases of reduced-calorie meals. Another study revealed that subway customers who saw calorie information purchased 52 fewer calories than did other subway patrons who did not view the information (Bassett et al. 2008), indicating that even moderate caloric reductions may be beneficial. A related study demonstrated that understandable caloric information displayed near SSBs at the point of purchase was effective in reducing SSB consumption among low-income, black adolescents, particularly when the caloric information was provided as a physical activity equivalent (Bleich et al. 2014). According to Bassett et al. (2008), placing calorie information at point of purchase is more effective than posting it online (e.g., on a fast-food restaurant Web site) and may be associated with lower-calorie food purchases among consumers who see the information. These types of interventions have the potential of reducing total calorie intake, which, in turn, can help reduce obesity-related morbidity and mortality (Bassett et al. 2008; Kuo et al. 2009).

Policy solutions have also been recommended to reduce the marketing of unhealthy foods and beverages to children and adolescents (Harris et al. 2014). In addition to industry self-regulation and laws or regulations at the national, state, and local levels, Harris et al. (2014) called for advocacy efforts such as petitions, letter-writing campaigns, and parent mobilization via social media to decrease unhealthy food marketing to youth. These types of advocacy efforts can take place at the grassroots level via schools and communities, and involving teens in these efforts can provide them the opportunity to develop a variety of important life skills in areas such as critical thinking, problem solving, communication, and advocacy. Then, too, Story et al. (2002) recommended using marketing approaches such as media campaigns to deliver positive messages about healthful eating, which can help offset the negative influence of unhealthy food advertising. In addition, families and schools can help teens develop media literacy by teaching them "skills to identify, analyze, investigate, and refute what is being portrayed in the media and advertising" (Story et al. 2002, p. S49).

Similarly, policy can affect adolescent nutrition at the school level. For example, when school-aged youth have ready access to unhealthy snack foods and beverages, they tend to consume more of them. In addition, policies excluding or limiting the sale of unhealthy competitive foods and beverages in schools are associated with lower percentages of overweight and obesity among students (CDC 2014b; Healthy Eating Research and Bridging the Gap 2012). Therefore, local, state, and federal policies play a key role in helping to create integrated school nutrition environment and services that positively impact adolescent dietary behaviors (CDC 2014c; Healthy Eating Research and Bridging the Gap 2012; Park et al. 2012; Story et al. 2002).

At the federal level, the Child Nutrition and WIC Reauthorization Act of 2004 requires school districts participating in federal school meal programs to develop wellness policies that limit competitive food sales, establish health education requirements, and prioritize other practices that promote healthy dietary behaviors (CDC n.d.a). In addition, the Healthy,

Hunger-Free Kids Act of 2010 requires the USDA to establish standards for all competitive foods and beverages sold in schools (i.e., foods other than those within federally supported meal programs). To provide schools guidance regarding how to improve food and beverage offerings, the CDC and IOM conducted a study that resulted in published recommendations regarding the availability and content of competitive foods and beverages in schools (CDC 2014a; IOM 2007). The subsequent report, *Nutrition Standards for Healthy Schools: Leading the Way Toward Healthier Youth*, asserted that competitive foods should be limited in schools; however, if these foods are available, they should be comprised of fruits, vegetables, whole grains, and nonfat or low-fat dairy products that align with the Dietary Guidelines for Americans and promote healthful eating habits that can be sustained throughout life (IOM 2007).

Conclusion

Adolescent nutrition is a critical component of adolescent health and a prerequisite for health, wellness, and quality of life. However, adolescents across the globe experience nutritional deficits that threaten their health and well-being; therefore, adolescent nutrition warrants investment from various sectors. Promoting healthful dietary behaviors in adolescents is important for proper growth and development, healthy weight management, disease prevention, prevention of overweight and obesity, and the establishment of sound dietary patterns that can be sustained into adulthood. Although behavior change is highly complex, there is evidence to support the efficacy of implementing strategies to promote healthy eating behaviors in adolescents. The nutritional health of adolescents can be addressed through an ecological approach that employs culturally relevant and developmentally appropriate strategies at multiple levels of behavioral influence, including individual, interpersonal, organizational, community, and policy. In addition, social cognitive theory can be infused within the ecological framework to capture the reciprocal and dynamic interchange that takes place with the individual, environment, and behavior.

In sum, there is strong evidence pointing to the connection between diet, physical activity, and health. Not only healthy dietary behaviors reduce disease risks and enhance health outcomes, but they are also associated with food security, thereby supporting the value of prevention and health promotion at the individual and population levels (USDA 2015a, b). Although the promotion of adolescent nutrition is a global challenge, it is one worth embracing as it can bring invaluable rewards in terms of health and wellness, productivity, and quality of life across the life span.

Acknowledgments The authors would like to thank Elaine Cox, MA, MLIS, CHIS II, and reference librarian at Texas Woman's University, for her invaluable assistance with the literature search for this chapter.

References

AAP. (n.d.). *Adolescent health*. Elk Grove Village, IL: American Academy of Pediatrics. Retrieved from https://www.adolescenthealth.org/Topics-in-Adolescent-Health.aspx

AAP. (2011). Sports drinks and energy drinks for children and adolescents: Are they appropriate? *Pediatrics, 127,* 1182–1189. doi:10.1542/peds.2011-0965

Abebe, D. S., Lien, L., & von Soest, T. (2012). The development of bulimic symptoms from adolescence to young adulthood in females and males: A population-based longitudinal cohort study. *International Journal of Eating Disorders, 45*, 737–745.

Abebe, D. S., Torgersen, L., Lien, L., Hafstad, G. S., & von Soest, T. (2014). Predictors of disordered eating in adolescence and young adulthood: A population-based, longitudinal study of females and males in Norway. *International Journal of Behavioral Development, 38*, 128–138. doi:10.1177/0165025413514871

Academy of Nutrition and Dietetics. (2015). Eat right®. Retrieved from http://www.eatright.org/

Adolphus, K., Lawton, C. L., & Dye, L. (2013). The effects of breakfast on behavior and academic performance in children and adolescents. *Frontiers in Human Neuroscience, 7*, 1–28. doi:10.3389/fnhum.2013.00425

Affenito, S. G. (2007). Breakfast: A missed opportunity. *Journal of the American Dietetic Association, 105*, 565–569. doi:10.1016/j.jada.2007.01.011

Allen, K. L., Byrne, S. M., Oddy, W. H., & Crosby, A. (2013). Early onset binge eating and purging eating disorders: course and outcome in a population-based study of adolescents. *Journal of Abnormal Child Psychology, 41*, 1083–1096. doi:10.1007/s10802-013-9747-7

Ambrosini, G. L., Huang, R. C., Mori, T. A., Hands, B. P., O'Sullivan, T. A., de Klerk, N. H. … Oddy, W. H. (2010). Dietary patterns and markers for the metabolic syndrome in Australian adolescents. *Nutrition, Metabolism & Cardiovascular Diseases, 20*, 274–283. doi:10.1016/j.numecd.2009.03.024

American College of Sports Medicine. (2011). *The female athlete triad*. Retrieved from https://www.acsm.org/docs/brochures/the-female-athlete-triad.pdf

American Diabetes Association. (2015). *Food.* Retrieved from http://www.diabetes.org/food-and-fitness/food/

American Dietetic Association. (2006). Position of the American Dietetic Association: Food insecurity and hunger in the United States. *Journal of the American Dietetic Association, 106*, 446–458.

American Heart Association. (n.d). *Nutrition center.* Retrieved from http://www.heart.org/HEARTORG/GettingHealthy/NutritionCenter/Nutrition-Center_UCM_001188_SubHomePage.jsp

American Institute for Cancer Research. (2014). *Diet—What we eat.* Retrieved from http://www.aicr.org/reduce-your-cancer-risk/diet/

American Psychological Association. (2002). *Developing adolescents: A reference for professionals*. Washington, DC: Author.

APA. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.) (DSM-5™). Arlington, VA: Author.

Arloski, M. (2009). *Wellness coaching for lasting lifestyle change*. Duluth, MN: Whole Person Associates Inc.

Armfield, J. M., Spencer, A. J., Roberts-Thomson, K. F., & Plastow, K. (2013). Water fluoridation and the association of sugar-sweetened beverage consumption and dental caries in Australian children. *American Journal of Public Health, 103*, 494–500.

Association for Supervision and Curriculum Development. (2014). *Whole school, whole community, whole child (WSCC): A collaborative approach to learning and health.* Retrieved from http://www.ascd.org/programs/learning-and-health/wscc-model.aspx

Bailey, D. A., Martin, A. D., McKay, H. A., Whiting, S., & Mirwald, R. (2000). Calcium accretion in girls and boys during puberty: A longitudinal analysis. *Journal of Bone and Mineral Research, 15*, 2245–2250. doi:10.1359/jbmr.2000.15.11.2245

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Barr, S. I., DiFrancesco, L., & Fulgoni III, V. L. (2014). Breakfast consumption is positively associated with nutrient adequacy in Canadian children and adolescents. *British Journal of Nutrition, 112*, 1373–1383. doi:10.1017/S0007114514002190

Basch, C. E. (2011). Breakfast and the achievement gap among urban minority youth. *Journal of School Health, 81,* 635–640. doi:10.1111/j.1746-1561.2011.00638.x

Bassett, M. T., Dumanovsky, T., Huang, C., Silver, L. D., Young, C., Nonas, C. … Frieden, T. R. (2008). Purchasing behavior and calorie information at fast-food chains in New York City, 2007. *American Journal of Public Health, 98*, 1457–1459. doi:10.2105/AJPH.2008.135020

Bearman, S. K., Martinez, E., Stice, E., & Presnell, K. (2006). The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence, 35*, 217–229. doi:10.1007/s10964-005-9010-9

Benton, D., & Nabb, S. (2003). Carbohydrate, memory, and mood. *Nutrition Reviews*, *61*, S61–S67. doi:10.1301/nr.2003.may.S61-S67

Bertram, M. Y., Katzenellenbogen, J., Vos, T., Bradshaw, D., & Hofman, K. J. (2013). The disability adjusted life years due to stroke in South Africa in 2008 [Issue Supplement A100]. *International Journal of Stroke, 8,* 76–80. doi:10.1111/j.1747-4949.2012.00955.x

Bhutta, Z. A., & Lassi, Z. S. (2015). Preconception care and nutrition interventions in low- and middle-income countries. In Z. A. Bhutta, M. Makrides & A. M. Prentice (Eds.), *Health and nutrition in adolescents and young women: Preparing for the next generation* (Nutrition Institute Workshop Series, Vol. 80, pp. 15–26). Vevey, Switzerland: Nestec Ltd. & Basel/Switzerland: S. Karger AG.

Biro, F. M., & Wien, M. (2010). Childhood obesity and adult morbidities. *American Journal of Clinical Nutrition*, *91*(5), 1499S–1505S. doi:10.3945/ajcn.2010.28701B

Bleich, S. N., Barry, C. L., Gary-Webb, T. L., & Herring, B. J. (2014). Reducing sugar-sweetened beverage consumption by providing caloric information: How Black adolescents alter their purchases and whether the effects persist. *American Journal of Public Health, 104*, 2417–2424. doi:10.2105/AJPH.2014.302150

Bohnert, A. M., Randall, E. T., Tharp, S., & Germann, J. (2011). The development and evaluation of a portion plate for youth: A pilot study. *Journal of Nutrition Education and Behavior, 43*, 268–273. doi:10.1016/j.jneb.2010.07.007

Booker, C. L., Skew, A. J., Sacker, A., & Kelly, Y. J. (2014). Well-being in adolescence—An association with health-related behaviors: Findings from *Understanding Society*, the UK Household Longitudinal Study. *Journal of Early Adolescence, 34*, 518–538. doi:10.1177/0272431613501082

Boschloo, A., Ouwehand, C., Dekker, S., Lee, N., de Groot, R., Krabbendam, L., et al. (2012). The relation between breakfast skipping and school performance in adolescents. *Mind, Brain and Education, 6*, 81–88.

Brown, I. J., Stamler, J., Van Horn, L., Robertson, C. E., Chan, Q., Dyer. … Elliott, P. (2011). Sugar-sweetened beverage, sugar intake of individuals, and their blood

pressure: International study of macro/micronutrients and blood pressure. *Hypertension, 57*, 695–701. doi:10.1161/HYPERTENSIONAHA.110.165456

Cabral, M. D. I., Siqueira, L. M., & Hospital, M. M. (2015). Comparison of prognostic factors between Hispanic and non-Hispanic adolescents with eating disorders. *Journal of Adolescent Health, 56*(2) [Supp 1], S89–S90. doi:10.1016/j.jadohealth.2014.10.179

Callaghan, C., Mandich, G., & He, M. (2010). Healthier snacks in school vending machines: A pilot project in four Ontario schools. *Canadian Journal of Dietetic Practice and Research, 71*, 186–191.

Casey, B. J., Getz, S., & Galvan, A. (2008). The adolescent brain. *Developmental Review, 28*, 62–77.

Catalano, P. M. (2003). Obesity and pregnancy—The propagation of a viscous cycle? *Journal of Clinical Endocrinology & Metabolism, 88*(8), 3505–3506.

CDC. (n.d.a). *School-based obesity prevention strategies for state policymakers*. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/policy/pdf/obesity_prevention_strategies.pdf

CDC. (n.d.b). *Trends in the prevalence of obesity, dietary behaviors, and weight control practices—National YRBS: 1991–2013*. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/pdf/trends/us_obesity_trend_yrbs.pdf

CDC. (2011a). Beverage consumption among high school students—United States, 2010. *Morbidity and Mortality Weekly Report, 60*(23), 778–780. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/mmwr/pdf/wk/mm6023.pdf

CDC. (2011b). Fruit and vegetable consumption among high school students—United States 2010. *Morbidity and Mortality Weekly Report, 60*(46), 1583–1586. Retrieved from http://www.cdc.gov/mmwr/pdf/wk/mm6046.pdf

CDC. (2011c). School health guidelines to promote healthy eating and physical activity. *Morbidity and Mortality Weekly Report, 60*(5). Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/mmwr/pdf/rr/rr6005.pdf

CDC. (2012). *Adolescent and school health*. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/index.htm

CDC. (2014a). *Adolescent and school health—Nutrition and the health of young people*. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/nutrition/facts.htm

CDC. (2014b). *Competitive foods in schools*. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/nutrition/standards.htm

CDC. (2014c). *School health guidelines to promote healthy eating and physical activity.* Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/npao/strategies.htm

CDC. (2014d). *Water access in schools.* Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/npao/wateraccess.htm

CDC. (2014e). Youth risk behavior surveillance—United States, 2013. *Morbidity and Mortality Weekly Report, 63*(SS-4).

CDC. (2015a). *Adolescent and school health—Youth Risk Behavior Surveillance System (YRBSS)*. Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/index.htm

CDC. (2015b). *Body mass index (BMI).* Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/healthyweight/assessing/bmi/

CDC. (2015c). *Childhood obesity causes and consequences.* Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/obesity/childhood/causes.html

CDC. (2015d). *Childhood obesity facts.* Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/obesity/data/childhood.html

CDC. (2015e). *Public health grand rounds—Adolescence: preparing for lifelong health and wellness.* Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/cdcgrandrounds/archives/2015/august2015.htm

Center on Media and Human Development. (2015). *Teens, health, and technology: A national survey*. Retrieved from http://cmhd.northwestern.edu/wp-content/uploads/2015/05/1886_1_SOC_ConfReport_TeensHealthTech_051115.pdf

Chen, H., & Jackson, T. (2012). Gender and age group differences in mass media and interpersonal influences on body dissatisfaction among Chinese Adolescents. *Sex Roles, 66*, 3–20. doi:10.1007/s11199-011-0056-8

Chen, J. L., Weiss, S., Heyman, M. B., Cooper, B., & Lustig, R. H. (2011). The efficacy of the web-based childhood obesity prevention program in Chinese American adolescents (Web ABC Study). *Journal of Adolescent Health, 49,* 148–154. doi:10.1016/j.jadohealth.2010.11.243

Cidro, J., Suleman, S., Leslie, K., Amaria, K., Hartman, B., Thompson, G. … Kaufman, M. (2015). Adolescent health and nutrition in the US and Canada: An overview of issues and determinants. In Z. A. Bhutta, M. Makrides & A. M. Prentice (Eds.), *Health and nutrition in adolescents and young women: Preparing for the next generation* (Nestlé Nutrition Institute Workshop Series, Vol. 80, pp. 27–48). Vevey, Switzerland: Nestec Ltd. & Basel; Switzerland: S. Karger AG.

Coleman-Jensen, A., Gregory, C., & Singh, A. (2014). *Household food security in the United States in 2013.* U.S. Department of Agriculture, Economic Research Service (ERR-173). Retrieved from http://www.ers.usda.gov/publications/err-economic-research-report/err173.aspx

Cordero, E. D., & Israel, T. (2009). Parents as protective factors in eating problems of college women. *Eating Disorders, 17*, 146–161.

Crawford, P., & Goldstein, H. (2014). *Hiding under a health halo: Examining the data behind health claims on sugary beverages.* Atkins Center for Weight and Health and California Center for Public Health

Advocacy. Retrieved from http://www.publichealthadvocacy.org/_PDFs/healthhalo/HealthHalo_PolicyBrief.pdf

Croll, J. K., Neumark-Sztainer, D., & Story, M. (2001). Healthy eating: What does it mean to adolescents? *Journal of Nutrition Education, 33,* 193–198. doi:10.1016/S1499-4046(06)60031-6

Cullen, K. W., Thompson, D., Boushey, C., Konzelmann, K., & Chen, T. (2013). Evaluation of a web-based program promoting healthy eating and physical activity for adolescents: Teen Choice: Food and Fitness. *Health Education Research, 28,* 704–714. doi:10.1093/her/cyt059

Dabelea, D., Mayer-Davis, E. J., Saydah, S., Imperatore, G., Linder, B., Divers J. … Hamman, R. F. (2014). Prevalence of type 1 and type 2 diabetes among children and adolescents from 2001 to 2009. *Journal of the American Medical Association, 311*(17), 1778–1786. doi:10.1001/jama.2014.3201

Dembek, C. R., Harris, J. L., & Schwartz, M. B. (2014). *Trends in television food advertising to young people: 2013 update*. Yale Rudd Center for Food Policy & Obesity. Retrieved from http://www.uconnruddcenter.org/files/Pdfs/RuddReport_TVFoodAdvertising_6_14.pdf

Deshmukh-Taskar, P., Nicklas, T. A., Morales, M., Yang, S. J., Zakeri, I., & Berenson, G. S. (2006). Tracking of overweight status from childhood to young adulthood: The Bogalusa Heart Study. *European Journal of Clinical Nutrition, 60*, 48–57.

Deshmukh-Taskar, P. R., Nicklas, T. A., O'Neil, C. E., Keast, D. R., Radcliffe, J. D., & Cho, S. (2010). The relationship of breakfast skipping and type of breakfast consumption with nutrient intake and weight status in children and adolescents: The National Health and Nutrition Examination Survey 1999–2006. *Journal of the American Dietetic Association, 110,* 869–878. doi:10.1016/j.jada.2010.03.023

Dick, B., & Ferguson, B. J. (2015). Health for the world's adolescents: A second chance in the second decade. *Journal of Adolescent Health, 56*, 3–6. doi:10.1016/j.jadohealth.2014.10.260

Dohnt, H. K., & Tiggeman, M. (2004). Development of perceived body size and dieting awareness in young girls. *Perceptual and Motor Skills, 99*, 790–792. doi:10.2466/pms.99.3.790-792

Dohnt, H. K., & Tiggeman, M. (2005). Peer influences on body dissatisfaction and dieting awareness in young girls. *British Journal of Developmental Psychology, 23*, 103–116. doi:10.1348/026151004X20658

Dohnt, H. K., & Tiggeman, M. (2006). Body image concerns in young girls: The role of peers and media prior to adolescence. *Journal of Youth and Adolescence, 35*, 135–145. doi:10.1007/s10964-005-9020-7

Eating Disorders Victoria (2015). *Disordered eating and dieting*. Retrieved from https://www.eatingdisorders.org.au/eating-disorders/disordered-eating-a-dieting

Ebbeling, C. B., Feldman, H. A., Chomitz, V. R., Antonelli, T. A., Gortmaker, S. L., Osganian, S. K., et al. (2012). A randomized trial of sugar-sweetened beverages and adolescent body weight. *New England Journal of Medicine, 367*, 1407–1416. doi:10.1056/NEJMoa1203388

Fatusi, A. O., & Bello, B. (2015). Social determinants of health in adolescents and young women's health and nutrition: Current evidence. In A. A. Bhutta, M. Makrides & A. M. Prentice (Eds.), *Health and nutrition in adolescents and young women: Preparing for the next generation* (Nestlé Nutrition Institute Workshop Series, Vol. 80, pp. 61–69). Vevey, Switzerland: Nestec Ltd. Basel; Switzerland: S. Karger AG.

Fiorito, L. M., Marini, M., Francis, L. A., Smiciklas-Wright, H., & Birch, L. L. (2009). Beverage intake of girls at age 5 y predicts adiposity and weight status in childhood and adolescence. *American Journal of Clinical Nutrition, 90,* 935–942. doi:10.3945/ajcn.2009.27623

Ford, E. S., Li, C., Zhao, G., Pearson, W. S., & Mokdad, A. H. (2008). Prevalence of the metabolic syndrome among U.S. adolescents using the definition from the International Diabetes Federation. *Diabetes Care, 31*, 587–589.

Franko, D. L., Striegel-Moore, R. H., Thompson, D., Affenito, S. G., Schreiber, G. B., Daniels, S. R., et al. (2008). The relationship between meal frequency and body mass index in black and white adolescent girls: More is less. *International Journal of Obesity, 32*, 23–29. doi:10.1038/sj.ijo.0803654

Gallagher, E. J., LeRoith, D., & Karnieli, E. (2010). Insulin resistance in obesity as the underlying cause for the metabolic syndrome. *Mount Sinai Journal of Medicine*, *77*, 511–523. doi:10.1002/msj.20212

Gibson, S. (2008). Sugar-sweetened soft drinks and obesity: A systematic review of the evidence from observational studies and interventions. *Nutrition Research Reviews, 21,* 134–147. doi:10.1017/S0954422408110976

Gidding, S. S., Dennison, B. A., Birch, L. L., Daniels, S. R., Gilman, M. W., Lichtenstein, A. H. … Van Horn, L. (2005). Dietary recommendations for children and adolescents: A guide for practitioners (Consensus Statement from the American Heart Association). *Circulation, 112*, 2061–2075. doi:10.1161/CIRCULATIONAHA.105.169251

Gilsanz, V., Chalfant, J., Kalkwarf, H., Zemel, B., Lappe, J., Oberfield, S. … Winer, K. (2011). Age at onset of puberty predicts bone mass in young adulthood. *Journal of Pediatrics, 158*, 100–105. doi:10.1016/j.jpeds.2010.06.054

Glanz, K., Rimer, B. K., & Viswanath, K. (2015). Theory, research, and practice in health behavior. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (5th ed., pp. 23–41). San Francisco, CA: Jossey-Bass.

Goldfarb, S. S., Tarver, W. L., Locher, J. L., Preskitt, J., & Sen, B. (2015). A systematic review of the association between family meals and adolescent risk outcomes. *Journal of Adolescence, 44*, 134–149.

Golman, M. (2009). *A study to evaluate the effectiveness of the Girls in Motion® program in improving body*

satisfaction in preadolescent girls (unpublished doctoral dissertation). Texas Woman's University, Denton, TX.

Gordon, C. M., DePeter, K. C., Feldman, H. A., Grace, E., & Emans, S. J. (2004). Prevalence of vitamin D deficiency among healthy adolescents. *Archives of Pediatric and Adolescent Medicine, 158*, 531–537.

Greer, F. R., Krebs, N. F., & The Committee on Nutrition. (2006). Optimizing bone health and calcium intakes of infants, children, and adolescents. *Pediatrics, 117*, 575–585. doi:10.1542/peds.2005-2822

Guo, S. S., & Chumlea, W. C. (1999). Tracking of body mass index in children in relation to overweight in adulthood. *American Journal of Clinical Nutrition, 70* (supplement), 145S–148S.

Harris, J. L., Heard, A., & Schwartz, M. B. (2014). *Older but still vulnerable: All children need protection from unhealthy food marketing*. Yale Rudd Center for Food Policy & Obesity. Retrieved from http://www.uconnruddcenter.org/files/Pdfs/Protecting_Older_Children_3_14.pdf

Healthy Eating Research. (2015). *Recommendations for responsible food marketing to children* (Issue Brief). Minneapolis, MN: Author. Retrieved from http://healthyeatingresearch.org/wp-content/uploads/2015/01/HER_Food-Marketing-Recomm_1–2015.pdf

Healthy Eating Research and Bridging the Gap. (2012). *Influence of competitive food and beverage policies on children's diets and childhood obesity* (Research Review). Princeton, NJ: Authors. Retrieved from http://www.rwjf.org/content/dam/farm/articles/articles/2012/rwjf400047

Hempel, K., Wuermli, A., & Lundberg, M. (2012). Adolescence: Protecting and promoting human development in times of economic shocks. *Policy Note: Labor Markets and Youth* (No. 13). Retrieved from http://siteresources.worldbank.org/SOCIALPROTECTION/Resources/280558-1334441996287/SPL_Policy_Note_13.pdf

Herpertz-Dahlmann, B. (2015). Adolescent eating disorders: Update on definitions, symptomatology, epidemiology, and comorbidity. *Child and Adolescent Psychiatric Clinics of North America*, *24*, 177–196. doi:10.1016/j.chc.2014.08.003

Horikawa, C., Kodama, S., Yachi, Y., Heianza, Y., Hirasawa, R., Ibe, Y. … Sone, H. (2011). Skipping breakfast and prevalence of overweight and obesity in Asian and Pacific regions: A meta-analysis. *Preventive Medicine, 53*, 260–267. doi:10.1016/j.ypmed.2011.08.030

Hoyland, A., Dye, L., & Lawton, C. L. (2009). A systematic review of the effect of breakfast on the cognitive performance of children and adolescents. *Nutrition Research Reviews, 22*, 220–243.

IOM. (2006). Food marketing to children and youth: Threat or opportunity? Washington, DC: Institute of Medicine.

IOM. (2007). *Nutrition standards for foods in schools: Leading the way toward healthier youth.* Washington, DC: Institute of Medicine. Retrieved from http://iom.nationalacademies.org/~/media/Files/Report%20Files/2007/Nutrition-Standards-for-Foods-in-Schools-Leading-the-Way-toward-Healthier-Youth/FoodinSchools.pdf

Jääskeläinen, A., Schwab, U., Kolehmainen, M., Pirkola, J., Järvelin, M. R., & Laitinen, J. (2013). Associations of meal frequency and breakfast with obesity and metabolic syndrome traits in adolescents of Northern Finland Birth Cohort 1986. *Nutrition, Metabolism & Cardiovascular Disease, 23*, 1002–1009. doi:10.1016/j.numecd.2012.07.006. Epub 2012 Aug 14.

Johnson, S. B., Blum, R. W., & Giedd, J. N. (2009). Adolescent maturity and the brain: The promise and pitfalls of neuroscience research in adolescent health policy. *Journal of Adolescent Health, 45*, 216–221. doi:10.1016/j.jadohealth.2009.05.016

Johnson, W. D., Kroon, J. J. M., Greenway, F. L., Bouchard, C., Ryan, D., & Katzmarzyk, P. T. (2009). Prevalence of risk factors for metabolic syndrome in adolescents National Health and Nutrition Examination Survey (NHANES), 2001–2006. *Archives of Pediatrics and Adolescent Medicine, 163*, 371–377. doi:10.1001/archpediatrics.2009.3

Jones, D. C. (2004). Body image among adolescent girls and boys: A longitudinal study. *Developmental Psychology, 40*, 823–835.

Joubert, J., Norman, R., Lambert, E. V., Groenewald, P., Schneider, M., Bull, F., et al. (2007). Estimating the burden of disease attributable to physical inactivity in South Africa in 2000. *South African Medical Journal, 97*, 725–731.

Jung, J., & Forbes, G. B. (2012). Body dissatisfaction and characteristics of disordered eating among black and white early adolescent girls and boys. *Journal of Early Adolescence, 33,* 737–764. doi:10.1177/0272431612468504

Juonala, M., Magnussen, C. G., Berenson, G. S., Venn, A., Burns, T. L., Sabin, M. A. … Raitakari, O. T. (2011). Childhood adiposity, adult adiposity, and cardiovascular risk factors. *New England Journal of Medicine, 365*(20), 1876–1885. doi:10.1056/NEJMoa1010112

Keast, D. R., Nicklas, T. A., & O'Neil, C. E. (2010). Snacking is associated with reduced risk of overweight and reduced abdominal obesity in adolescents: National Health and Nutrition Examination Survey (NHANES) 1999–2004. *The American Journal of Clinical Nutrition, 92*, 428–435.

Kelder, S. H., Hoelscher, D., & Perry, C. L. (2015). How individuals, environments, and health behaviors interact: Social cognitive theory. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (5th ed., pp. 159–181). San Francisco, CA: Jossey-Bass.

Kelishadi, R. (2007). Childhood overweight, obesity, and the metabolic syndrome in developing countries. *Epidemiological Reviews, 29*, 62–76.

Kimani-Murage, E. W. (2013). Exploring the paradox: Double burden of malnutrition in rural South Africa. *Global Health Action, 6*, 19249. doi.10.3402/gha.v6i0.19249

Kranz, S., Lin, P. J., & Wagstaff, D. A. (2007). Children's dairy intake in the United States: Too little, too fat? *Journal of Pediatrics, 151*, 642–646.

Kulkarni, B., Hills, A. P., & Byrne, N. M. (2014). Nutritional influences over the life course on lean body mass of individuals in developing countries. *Nutrition Reviews, 72,* 190–204. doi:10.1111/nure.12097

Kuo, T., Jarosz, C. J., Simon, P., & Fielding, J. E. (2009). Menu labeling as a potential strategy for combating the obesity epidemic: A health impact assessment. *American Journal of Public Health, 99*, 1680–1686.

Kurz, K. M., & Johnson-Welch, C. (1994). *The nutrition and lives of girls in developing countries: Findings from the nutrition of adolescent girls research program*. Washington, DC: International Center for Research on Women.

Kurz, K. M., & Johnson-Welch, C. (2000). *Enhancing nutrition results: The case for a women's resources approach*. Washington, DC: International Center for Research on Women.

Lam, C. B., & McHale, S. M. (2012). Developmental patterns and family predictors of adolescent weight concerns: A replication and extension. *International Journal of Eating Disorders, 45*, 524–530.

Lange, D., Wahrendorf, M., Siegrist, J., Plachta-Danielzik, S., Landsberg, B., & Mu¨ller, M. J. (2011). Associations between neighbourhood characteristics, body mass index and health-related behaviours of adolescents in the Kiel Obesity Prevention Study: A multilevel analysis. *European Journal of Clinical Nutrition, 65*, 711–719.

Larson, N., & Story, M. (2013). A review of snacking patterns among children and adolescents: What are the implications of snacking for weight status? *Childhood Obesity*, *9*, 104–115. doi:10.1089/chi.2012.0108

Lassi, Z. S., & Bhutta, Z. A. (2015). Obesity, prediabetes and diabetes in adolescents and women: Evidence-based interventions. In Z. A. Bhutta, M. Makrides & A. M. Prentice (Eds.), *Health and nutrition in adolescents and young women: Preparing for the next generation* (Nestlé Nutrition Institute Workshop Series, Vol. 80, pp. 95–104). Vevey, Switzerland: Nestec Ltd. & Basel; Switzerland: S. Karger AG.

Levine, M. P., & Smolak, L. (2010). Cultural influences on body image and the eating disorders. In W. S. Agras (Ed.), *The Oxford handbook of eating disorders* (pp. 223–246). New York, NY: Oxford University Press.

Lien, L., Lien, N., Heyerdahl, S., Thoresen, M., & Bjertness, E. (2006). Consumption of soft drinks and hyperactivity, mental distress, and conduct problems among adolescents in Oslo, Norway. *American Journal of Public Health, 96*, 1815–1820.

Liu, J., Hay, J., Faught, B. E., Wade, T., Cairney, J., Merchant, A. T., et al. (2012). Family eating and activity habits, diet quality and preadolescent overweight and obesity. *Public Health, 126*, 532–534. doi:10.1016/j.puhe.2012.02.012

Loth, K. A., MacLehose, R. F., Fulkerson, J. A., Crow, S., & Neumark-Sztainer, D. (2013). Food-related parenting practices and adolescent weight status: A population-based study. *Pediatrics, 131,* e1443–e1450. doi:10.1542/peds.2012-3073

Ludwig, D. S., Peterson, K. E., & Gortmaker, S. L. (2001). Relation between consumption of sugar-sweetened drinks and childhood obesity: A prospective, observational analysis. *The Lancet, 357*, 505–508. doi:10.1016/S0140-6736(00)04041-1

Malik, V. S., Popkin, B. M., Bray, G. A., Despres, J. P., Willett, W. C., & Hu, F. B. (2010). Sugar-sweetened beverages and risk of metabolic syndrome and type 2 diabetes: A meta-analysis. *Diabetes Care, 33*, 2477–2483.

Marques, L., Alegria, M., Becker, A. E., Chen, C. N., Fang, A., Chosak, A., et al. (2011). Comparative prevalence, correlates of impairment, and service utilization for eating disorders across US ethnic groups: Implications for reducing ethnic disparities in health care access for eating disorders. *International Journal of Eating Disorders, 44*, 412–420. doi:10.1002/eat.20787

Marshall, T. A., Eichenberger, G. J. M., Broffitt, B., Stumbo, P. J., & Levy, S. M. (2005). Diet quality in young children is influenced by beverage consumption. *Journal of the American College of Nutrition, 24*, 65–75.

Massey-Stokes, M. (2002). Adolescent nutrition: Needs and recommendations for practice. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas*, 75, 286–291. doi:10.1080/00098650209603957

Massey-Stokes, M., Barton, B. A., Golman, M., & Holland, D. J. (2012). An ecological approach to the prevention of eating disorders in children and adolescents. In K. Goodheart, J. Clopton, & J. Robert-Mccomb (Eds.), *Eating disorders in women and children: Prevention, stress management, and treatment* (2nd ed., pp. 225–267). Boca Raton, FL: CRC Press.

Mauriello, L. M., Ciavatta, M. M., Paiva, A. L., Sherman, K. J., Castle, P. H., Johnson, J. L., et al. (2010). Results of a multi-media multiple behavior obesity prevention program for adolescents. *Preventive Medicine, 51,* 451–456. doi:10.1016/j.ypmed.2010.08.004

May, A. L., Kuklina, E. V., & Yoon, P. W. (2012). Prevalence of cardiovascular disease risk factors among US adolescents, 1999–2008. *Pediatrics, 129*, 1035–1041. doi:10.1542/peds.2011-1082

McGuire, W., Dyson, L., & Renfrew, M. (2010). Maternal obesity: Consequences for children, challenges for clinicians and carers. *Seminars in Fetal & Neonatal Medicine, 15*, 108–112. doi:10.1016/j.siny.2009.09.005

McKinney, C., Bishop, V., Cabrera, K., Medina, R., Takawira, D., Donate N. … Guevara, B. (2014). NuFit: Nutrition and Fitness CBPR Program Evaluation. *Journal of Prevention & Intervention in the Community, 42*, 112–124. doi:10.1080/10852352.2014.881180

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education & Behavior, 15*, 351–377. doi:10.1177/109019818801500401

Misra, M., & Klibanski, A. (2006). Anorexia nervosa and osteoporosis. *Reviews in Endocrine and Metabolic Disorders, 7*, 91–99.

More, J. (2013). *Infant, child and adolescent nutrition: A practical handbook*. Boca Raton, FL: CRC Press.

Mota, J., Fidalgo, F., Silva, R., Ribeiro, J. C., Santos, R., Carvalho, J., et al. (2008). Relationships between physical activity, obesity and meal frequency in adolescents. *Annals of Human Biology, 35*, 1–10.

Murphy, J. M. (2007). Breakfast and learning: An updated review. *Current Nutrition & Food Science, 3,* 3–36. doi:10.2174/1573401310703010003

National Consortium for Credentialing Health and Wellness Coaches. (2015). *What is health and wellness coaching?* Retrieved from http://www.ncchwc.org/

National Heart, Lung, and Blood Institute. (2011). *What is metabolic syndrome?* Retrieved from http://www.nhlbi.nih.gov/health/health-topics/topics/ms

National Heart, Lung, and Blood Institute. (2014). *What is the DASH eating plan?* Retrieved from http://www.nhlbi.nih.gov/health/health-topics/topics/dash

Nazem, T. G., & Ackerman, K. E. (2012). The female athlete triad. *Sports Health, 4*, 302–311. doi:10.1177/1941738112439685

NEDA. (n.d.a). *Factors that may contribute to eating disorders*. New York, NY: National Eating Disorders Association. Retrieved from http://www.nationaleatingdisorders.org/factors-may-contribute-eating-disorders

NEDA. (n.d.b). *Health consequences of eating disorders*. New York, NY: National Eating Disorders Association. Retrieved from http://www.nationaleatingdisorders.org/health-consequences-eatingdisorders

Neumark-Sztainer, D. R., Wall, M. M., Haines, J. I., Story, M. T., Sherwood, N. E., & van den Berg, P. A. (2007). Shared risk and protective factors for overweight and disordered eating in adolescents. *American Journal of Preventive Medicine, 33*, 359–369.

Nichols, J. F., Rauh, M. J., Lawson, M. J., Ji, M., & Barkai, H. S. (2006). Prevalence of the female athlete triad syndrome among high school athletes. *Archives of Pediatrics & Adolescent Medicine, 160*, 137–142. doi:10.1001/archpedi.160.2.137

Nicklas, T. A., O'Neil, C. E., & III Fulgoni, V. L. (2009). The role of dairy in meeting the recommendations for shortfall nutrients in the American diet. *Journal of the American College of Nutrition, 28*(supplement 1), 73S–81S.

Nitert, M. D., Matusiak, K., Barrett, H. L., & Callaway, L. K. (2015). Interventions before and during pregnancy to minimize the risks of an overweight pregnancy. In Z. A. Bhutta, M. Makrides & A. M. Prentice (Eds.), *Health and nutrition in adolescents and young women: Preparing for the next generation* (Nestlé Nutrition Institute Workshop Series, Vol. 80, pp. 105–116). Vevey, Switzerland: Nestec Ltd. & Basel; Switzerland: S. Karger AG.

Nord, M. (2009). *Food insecurity in households with children: Prevalence, severity, and household characteristics*. (U.S. Department of Agriculture, Economic Research Service Economic Information Bulletin No. 56). Retrieved from http://www.ers.usda.gov/media/155368/eib56_1_.pdf

Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2014). Prevalence of childhood and adult obesity in the United States, 2011–2012. *Journal of the American Medical Association, 311*, 806–814.

Ogden, C. L., & Flegal, K. M. (2010). Changes in terminology for childhood overweight and obesity. *National Health Statistics Reports, 25*, 1–5.

Ogden, C. L., Kit, B. K., Carroll, M. D., & Park, S. (2011). *Consumption of sugar drinks in the United States, 2005–2008.* (NCHS Data Brief, No. 71). Hyattsville, MD: National Center for Health Statistics. Retrieved from http://www.cdc.gov/nchs/data/databriefs/db71.pdf#x2013;2008

Park, S., Blanck, H. M., Bettylou, S., Brener, N., & O'Toole, T. (2012). Factors associated with sugar-sweetened beverage intake among United States high school students. *The Journal of Nutrition, 142,* 306–312. doi:10.3945/jn.111.148536

Park, J., Hilmers, D. C., Mendoza, J. A., Stuff, J. E., Liu, Y., & Nicklas, T. A. (2010). Prevalence of metabolic syndrome and obesity in adolescents aged 12 to 19 years: Comparison between the United States and Korea. *Journal of Korean Medical Science, 25*, 75–82.

Parvanta, C. E., Nelson, D. E., Parvanta, S. A., & Harner, R. N. (2011). *Essentials of public health communication*. Sudbury, MA: Jones & Bartlett.

Patton, G. C., & Sawyer, S. M. (2015). Adolescent health globally: Issues and challenges. In Z. A. Bhutta, M. Makrides & A. M. Prentice (Eds.), *Health and nutrition in adolescents and young women: Preparing for the next generation* (Nestlé Nutrition Institute Workshop Series, Vol. 80, pp. 1–14). Vevey, Switzerland: Nestec Ltd. & Basel; Switzerland: S. Karger AG.

Pew Research Center. (2015). *Teens, social media & technology overview 2015*. Retrieved from http://www.pewinternet.org/2015/04/09/teens-social-media-technology-2015/

Popkin, B. M., Adair, L. S., & Ng, S. W. (2012). Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews*, 70, 3–21. doi:10.1111/j.1753-4887.2011.00456.x

Prentice, A. (2004). Diet, nutrition and the prevention of osteoporosis. *Public Health Nutrition*, *7*(1A), 227–243. doi:10.1079/PHN2003590

Prentice, A. M. (2015). Nutrition challenges and issues of relevance to adolescents in low- and middle-income countries. In Z. A. Bhutta, M. Makrides & A. M. Prentice (Eds.), *Health and nutrition in adolescents and young women: Preparing for the next generation* (Nestlé Nutrition Institute Workshop Series, Vol. 80, pp. 49–59). Vevey, Switzerland: Nestec Ltd. & Basel; Switzerland: S. Karger AG.

Prentice, A., Schoenmakers, I., Laskey, M. A., de Bono, S., Ginty, F., & Goldberg, G. R. (2006). Nutrition and

bone growth and development. *Proceedings of the Nutrition Society, 65*, 348–360. doi:10.1079/PNS2006519

Prochaska, J. O., & DiClemente, C. C. (1983). Stages and processes of self-change of smoking: Toward an integrative model of change. *Journal of Consulting and Clinical Psychology, 51*, 390–395.

Prochaska, J. O., Redding, C. A., & Evers, K. E. (2015). The transtheoretical model and stages of change. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (5th ed., pp. 125–148). San Francisco, CA: Jossey-Bass.

Rampersaud, G. C., Pereira, M. A., Girard, B. L., Adams, J., & Metzl, J. D. (2005). Breakfast habits, nutritional status, body weight, and academic performance in children and adolescents. *Journal of the American Dietetic Association, 105*, 743–760.

Reedy, J., & Krebs-Smith, S. M. (2010). Dietary sources of energy, solid fats, and added sugars among children and adolescents in the United States. *Journal of the American Dietetic Association, 110*, 1477–1484.

Reilly, J. J., & Kelly, J. (2011). Long-term impact of overweight and obesity in childhood and adolescence on morbidity and premature mortality in adulthood: Systematic review. *International Journal of Obesity, 35*, 891–898. doi:10.1038/ijo.2010.222

Ricciardelli, L. A., & McCabe, M. P. (2004). A biopsychosocial model of disordered eating and the pursuit of muscularity in adolescent boys. *Psychological Bulletin, 130*, 179–205.

Richardson, J., & Harris, J. L. (2011, November). *Food marketing and social media: Findings from Fast Food FACTS and Sugary Drink FACTS*. Paper presented at the American University Digital Food Marketing Conference, Washington, DC. Retrieved from http://www.uconnruddcenter.org/files/Pdfs/FoodMarketingSocialMedia_AmericanUniversity_11_11.pdf

Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). *Generation M^2: Media in the lives of 8- to 18-year-olds.* Menlo Park, CA: The Henry J. Kaiser Family Foundation. Retrieved from http://files.eric.ed.gov/fulltext/ED527859.pdf

Rimal, R. N., & Lapinski, M. K. (2009). Why health communication is important in public health. *Bulletin of the World Health Organization, 87,* 247–247. doi:10.2471/BLT.08.056713. Retrieved from http://www.who.int/bulletin/volumes/87/4/08-056713/en/

Ritchie, L. D. (2012). Less frequent eating predicts greater BMI and waist circumference in female adolescents. *American Journal of Clinical Nutrition, 95*, 290–296. doi:10.3945/ajcn.111.016881

Robert-McComb, J., & Massey-Stokes, M. (2014). Body image concerns throughout the lifespan. In J. McComb, R. Norman, & M. Zumwalt (Eds.), *The active female: Health issues throughout the lifespan* (2nd ed., pp. 3–23). Totowa, NJ: Humana.

Rodgers, R. F., Paxton, S. J., & Chabrol, H. (2009). Effects of parental comments on body dissatisfaction and eating disturbance in young adults: A sociocultural model. *Body Image, 6*, 171–177.

Rodin, J., Silberstein, L., & Striegel-Moore, R. (1985). Women and weight: A normative discontent. In T. B. Sondereregger (Ed.), *Psychology and gender* (pp. 267–307). Lincoln, NE: University of Nebraska Press.

Rooney, B. L., Mathiason, M. A., & Schauberger, C. W. (2011). Predictors of obesity in childhood, adolescence, and adulthood in a birth cohort. *Maternal and Child Health Journal, 15*, 1166–1175.

Ruxton, C., & Derbyshire, E. (2014). Strategies to encourage healthy eating among children and young adults. *Primary Health Care, 24*, 33–41.

Sallis, J. F., & Glanz, K. (2009). Physical activity and food environments: Solutions to the obesity epidemic. *The Milbank Quarterly, 87*, 123–154.

Sallis, J. F., & Owen, N. (2015). Ecological models of health behavior. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (5th ed., pp. 43–64). San Francisco, CA: Jossey-Bass.

Savage, J. S., Fisher, J. O., & Birch, L. L. (2007). Parental influence on eating behavior: Conception to adolescence. *The Journal of Law, Medicine & Ethics, 35*, 22–34. doi:10.1111/j.1748-720X.2007.00111.x

Sawyer, S. M., Afifi, R. A., Bearinger, L. H., Blakemore, S.-J., Dick, B., Ezeh, A. C., et al. (2012). Adolescence: A foundation for future health. *Lancet, 379*, 1630–1640. doi:10.1016/S0140-6736(12)60531-5

Schwandt, P., Kelishadi, R., Ribeiro, R. Q. C., Haas, G., & Poursafa, P. (2010). A three-country study on the components of the metabolic syndrome in youths: The BIG Study. *International Journal of Pediatric Obesity, 5*, 334–341. doi:10.3109/17477160903497043

Scully, M., Wakefield, M., Niven, P., Chapman, K., Crawford, D., Pratt I. S. … Morley, B. (2012). Association between food marketing exposure and adolescents' food choices and eating behaviors. *Appetite, 58*, 1–5. doi:10.1016/j.appet.2011.09.020

Sebastian, R. S., Cleveland, L. E., & Goldman, J. D. (2008). Effect of snacking frequency on adolescents' dietary intakes and meeting national recommendations. *Journal of Adolescent Health, 42,* 503–511. doi:10.1016/j.jadohealth.2007.10.002

Seifert, S. M., Schaechter, J. L., Hershorin, E. R., & Lipshultz, S. E. (2011). Health effects of energy drinks on children, adolescents, and young adults. *Pediatrics, 127*, 511–528. doi:10.1542/peds.2009-3592

Shtasel-Gottlieb, Z., Palakshappa, D., Yang, F., & Goodman, E. (2015). The relationship between developmental assets and food security in adolescents from a low-income community. *Journal of Adolescent Health, 56*, 215–222.

Singh, N., Parihar, R. K., Saini, G., Mohan, S. K., Sharma, N., & Razaq M. (2013). Prevalence of metabolic syndrome in adolescents aged 10–18 years in Jammu, J and K. *Indian Journal of Endocrinology & Metabolism, 17*, 133–137. doi:10.4103/2230-8210.107849

Skolnik, R. (2012). *Global health 101* (2nd ed.). Burlington, MA: Jones & Bartlett Learning.

Slawta, J. N., & DeNeui, D. (2010). Be a fit kid: Nutrition and physical activity for the fourth grade. *Health Promotion Practice, 11,* 522–529. doi:10.1177/1524839908328992

Smetana, J. G., Campione-Barr, N., & Metzger, A. (2006). Adolescent development in interpersonal and societal contexts. *Annual Review of Psychology*, *57*, 255–284. doi:10.1146/annurev.psych.57.102904.190124

Smink, F. R., van Hoeken, D., & Hoek, H. W. (2012). Epidemiology of eating disorders: Incidence, prevalence and mortality rates. *Current Psychiatry Reports, 14*, 406–414.

Society for Adolescent Health and Medicine. (2015). *Topics in adolescent health*. Retrieved from https://www.adolescenthealth.org/Topics-in-Adolescent-Health.aspx

Sohn, W., Burt, B. A., & Sowers, M. R. (2006). Carbonated soft drinks and dental caries in the primary dentition. *Journal of Dental Research, 85*, 262–266.

Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin, 128*, 825–848. doi:10.1037//0033-2909.128.5.825

Story, M., Neumark-Sztainer, D., & French, S. (2002). Individual and environmental influences on adolescent eating behaviors [Supplement]. *Journal of the Academy of Nutrition and Dietetics, 102*(3), S40–S51. doi:10.1016/S0002-8223(02)90421-9

Swami, V., Frederick, D. A., Aavik, T., Alcalay, L., Allik, J., Anderson, D. … Simonetti, F. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the International Body Project I. *Personality and Social Psychology Bulletin, 36,* 309–325. doi:10.1177/0146167209359702

Swanson, S. A., Crow, S. J., LeGrange, D., Swendsen, J., & Merikangas, K. R. (2011). Prevalence and correlates of eating disorders in adolescents: Results from the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry, 68*, 714–723. doi:10.1001/archgenpsychiatry.2011.22

Thompson, T. G., & Veneman, A. M. (2005). Dietary guidelines for Americans 2005. United States Department of Health and Human Services and United States Department of Agriculture.

Thompson, D., Cullen, K. W., Boushey, C., & Konzelmann, K. (2012). Design of a website on nutrition and physical activity for adolescents: Results from formative research. *Journal of Medical Internet Research, 14,* e59. doi:10.21196/jmir.1889

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. Washington, DC: American Psychological Association.

UNICEF. (2011). *The state of the world's children 2011: Adolescence—An age of opportunity*. New York, NY: Author.

UNICEF. (2014). *Adolescents and youth—Health and wellbeing*. Retrieved from http://www.unicef.org/adolescence/index_action.html

United Nations. (2013). *Millennium development goals and beyond 2015: Goal 5—Improve maternal health* (Fact Sheet). Retrieved from http://www.un.org/millenniumgoals/pdf/Goal_5_fs.pdf

USA.gov. (2012). *The Guide to Community Preventive Services.* Retrieved from http://www.thecommunityguide.org/index.html

USDA. (n.d). *SuperTracker: My foods. my fitness. my health.* Washington, D.C.: U.S. Department of Agriculture. Retrieved from https://www.supertracker.usda.gov/Documents/SuperTracker_10_Tips.pdf

USDA. (2015a). *Scientific Report of the 2015 Dietary Guidelines Advisory Committee*. Washington, D.C.: U.S. Department of Agriculture. Retrieved from http://www.health.gov/dietaryguidelines/2015-scientific-report/pdfs/scientific-report-of-the-2015-dietary-guidelines-advisory-committee.pdf

USDA. (2015b). *Summer Food Service Program (SFSP).* Washington, D.C.: U.S. Department of Agriculture. Retrieved from http://www.fns.usda.gov/sfsp/summer-food-service- http://www.fns.usda.gov/sfsp/summer-food-service-program-sfsp

USDA & USDHHS. (n.d). *ChooseMyPlate.gov.* Washington D. C.: U.S. Department of Agriculture & U.S. Department of Health and Human Services. Retrieved from http://www.choosemyplate.gov/index.html

USDA & USDHHS. (2010). *Dietary guidelines for Americans, 2010 (*7th ed.). Washington, DC: U.S. Department of Agriculture, and U.S. Department of Health and Human Services. Retrieved from http://www.health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf

USDHHS & Office of Adolescent Health. (n.d.). *Office of Adolescent Health.* Retrieved from http://www.hhs.gov/ash/oah/

USDHHS & Office of Disease Prevention and Health Promotion. (2015). *What is health communication?* Retrieved from http://www.health.gov/communication/resources/

USDHHS, Office of Disease Prevention and Health Promotion. (n.d.a). *About Healthy People*. Retrieved from http://www.healthypeople.gov/2020/About-Healthy-People

USDHHS & Office of Disease Prevention and Health Promotion. (n.d.b). *Adolescent health*. Retrieved from http://www.healthypeople.gov/2020/topics-objectives/topic/Adolescent-Health

USDHHS & Office of Disease Prevention and Health Promotion. (n.d.c). *Healthy People 2020—nutrition and weight status.* Retrieved from http://www.healthypeople.gov/2020/topics-objectives/topic/nutrition-and-weight-status

Vorster, H. H., Venter, C. S., Wissing, M. P., & Margetts, B. M. (2005). The nutrition and health transition in the North West Province of South Africa: A review of the THUSA (Transition and Health during Urbanisation

of South Africans) study. *Public Health Nutrition, 8*, 480–490.

Weaver, C. M., & Boushey, C. J. (2003). Milk—good for bones, good for reducing childhood obesity? *Journal of the American Dietetic Association, 103*, 1598–1599.

Westerberg-Jacobson, J., Ghaderi, A., & Edlund, B. (2012). A longitudinal Study of motives for wishing to be thinner and weight-control practices in 7-to 18-year-old Swedish girls. *European Eating Disorders Review, 20*, 294–302.

WHO. (n.d.a). *Iron deficiency anaemia*. Geneva: World Health Organization. Retrieved from http://www.who.int/nutrition/topics/ida/en/

WHO. (n.d.b). *Nutrition—Challenges*. Geneva: World Health Organization. Retrieved from http://www.who.int/nutrition/challenges/en/

WHO. (2002). Quantifying selected major risks to health. In *The World Health Report 2002: Reducing risks, promoting healthy life* (pp. 47–97). Geneva: World Health Organization. Retrieved from http://www.who.int/whr/2002/en/whr02_ch4.pdf?ua=1

WHO. (2009). *Global health risks: Mortality and burden of disease attributable to selected major risks*. Geneva: World Health Organization. Retrieved from http://www.who.int/healthinfo/global_burden_disease/GlobalHealthRisks_report_full.pdf

WHO. (2014a). *Adolescents: Health risks and solutions.* Geneva: World Health Organization. Retrieved from http://www.who.int/mediacentre/factsheets/fs345/en/

WHO. (2014b). *10 facts on obesity*. Geneva: World Health Organization. Retrieved from http://www.who.int/features/factfiles/obesity/en/

WHO. (2015a). *Adolescent health*. Geneva: World Health Organization. Retrieved from http://www.who.int/topics/adolescent_health/en/

WHO. (2015b). *Global strategy on diet, physical activity, and health: What is overweight and obesity*? Geneva: World Health Organization. Retrieved from http://www.who.int/dietphysicalactivity/childhood_what/en/#

WHO. (2015c). *Health for the world's adolescents: A second chance in the second decade* (Multimedia Online Report). Geneva: World Health Organization. Retrieved from http://apps.who.int/adolescent/second-decade/

WHO. (2015d). *Health promotion*. Geneva: World Health Organization. Retrieved from http://www.who.int/topics/health_promotion/en/

WHO. (2015e). *Media centre: Adolescence: Health risks and solutions.* Geneva: World Health Organization. Retrieved from http://www.who.int/mediacentre/factsheets/fs345/en/

WHO. (2015f). *Media centre: Obesity and overweight.* Geneva: World Health Organization. Retrieved from http://www.who.int/mediacentre/factsheets/fs311/en/

WHO. (2015g). *Media centre: Physical Activity*. Geneva: World Health Organization. Retrieved from http://www.who.int/mediacentre/factsheets/fs385/en/

Widenhorn-Müller, K., Hille, K., Klenk, J., & Weiland, U. (2008). Influence of having breakfast on cognitive performance and mood in 13- to 20-year-old high school students: Results of a crossover trial. *Pediatrics, 122,* 279–284. doi:10.1542/peds.2007-0944

Wilking, C., Gottlieb, M., Bonacore, M., Cheyne, A., Meija, P., Dorfman, L., et al. (2013*). State law approaches to address digital food marketing to youth* (Executive Summary). Public Health Advocacy Institute. Retrieved from http://www.bmsg.org/sites/default/files/phai_bmsg_cdd_digital_food_mktg_full_report.pdf

Juvenile Justice and Adolescent Health: Crime, Punishment, and Life-Course Trajectory

12

Mary E. Dillon

Health and Incarcerated Adolescents

In the USA, approximately 54,148 adolescents who were incarcerated in 2013, over 50 % (more than 27,000 adolescents) will reoffend and be incarcerated again later in life (Child Trends DataBank 2015; Sickmund et al. 2015). Given this outcome, many would ask, why are we sending adolescent offenders to programs that we know result in 1 out of 2 adolescents being repeatedly incarcerated throughout the rest of their life? In many ways, that has been the product for the billions of dollars spent in the USA arresting, prosecuting, imprisoning, and controlling adolescents.

When designing programs and services to improve the adolescent health and development, incarcerated adolescents and adolescents in custody are a distinct group, whose health needs are different in some important ways from the general population of adolescents. Given these facts, one goal of the health policy is to reduce the harm to the adolescent's health. In the case of an adolescent taken into custody, there is an exceedingly high risk of an adolescent experiencing health and mental health problems in the short term and for many years to come in the future. For too many adolescents, being arrested changes their life forever—sadly, in the most tragic of ways.

What makes adolescent justice and health an international concern is the global influence of the philosophy and theory of the juvenile justice system in the USA. When there was a major shift in the USA from a "rehabilitation and restoration" perspective to a "retribution and responsibility" perspective, much of the world's juvenile justice community also adopted a similar criminological framework. When the *tough-on-crime* philosophy became the "new approach" to adult crime, it was quickly extended to cover adolescent offenders. The juvenile court procedures (welfare-oriented) that had protected adolescents from the stigma and harsh punishment of adult justice were systematically dismantled in the 1980s. In most countries in Western Europe, there was a convergence with the US policy on criminal justice for adults and juveniles. Following the US lead, policy focused on "deeds" rather than "needs" of the adolescent. In part, this global shift occurred because of the international dominance of the US economy. US economic globalization is based on a neoliberal economic ideology that advocates for the removal of all barriers to commerce, and the privatization of all available resources and services. Under a neoliberal economic ideology, social services are defunded, while individuals (irrespective of age) are held responsible and punished for their criminal behavior (Sudbury 2014).

M.E. Dillon (✉)
School of Social Work, University of Central Florida, Orlando, FL, USA
e-mail: mdillon10@cox.net

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_12

By the mid- to late 1990s, the pendulum began to swing back toward rehabilitation and welfare approaches, and to diversion and restorative justice models. While the punishment orientation is losing support, it continues to be influential. The potential harm to the health of and to the adolescent's future from harsh interventions continues to put adolescents who offend at greater risk of health and mental health injury both during adolescence and as adults.

United Nations Convention on the Rights of the Child

The primary voice against a focus on "deeds" rather than "needs" and on "offender punishment" rather than "rehabilitation" and "welfare" approaches in juvenile or youth justice (a term preferred by the United Nations) comes from international courts and human rights conventions—primarily codified by the United Nations (Muncie 2005). International adolescent rights became virtually statutory law with the 1989 United Nations Convention on the Rights of the Child (UNICEF 1989). This convention established the basic rights of all children to a life free from discrimination, to be protected in armed conflicts, to be protected from degrading and cruel punishment, to receive special treatment in justice systems, and to be granted freedom from discrimination, exploitation, and abuse. The 1989 Convention was an expansion of the 1985 United Nations Standard *Minimum* Rules for the Administration of Youth Justice (the Beijing Rules), which acknowledged "special needs of children" and the importance of being flexible when dealing with adolescent offenders. Additionally, subsequent rights of children and adolescents have been articulated in later articles and conventions (Lundy 2014).

The United Nations Guidelines for the Prevention of Juvenile Delinquency (the Riyadh Guidelines) in 1990 stated that youth justice policy should have a number of *child-centered characteristics*. For instance, the well-being of young people from their early childhood should be the focus of any juvenile delinquency prevention program. Youth justice systems should avoid criminalizing and penalizing a child for behavior that does not cause serious damage to the development of the child or harm to others. Juvenile delinquency prevention programs should recognize that youthful problem behavior is most often simply a part of the maturation process and virtually all adolescents will grow out of it. Programs should avoid labeling adolescents as "deviant," "delinquent," or "pre-delinquent" to avoid the development of a pattern of undesirable behavior associated with labeling adolescents as delinquent. Programs supporting community-based services are preferred over incarceration.

Formal adult and juvenile criminal justice agencies typically use social control to enforce laws. However, in practice, there are very few juvenile justice systems anywhere in the world that meet the standards of the 1989 convention. It has been ratified by 195 member nations (but not by the USA) and is lauded as the "most widely ratified international human rights treaty in history" (Attiah 2014; UN News Center 2015).

International Norms and Practices

These United Nation conventions, standards, treaties, and rules, formally adopted by the United Nations General Assembly and ratified by its nation-states since 1998, consider specific harsh treatment of adolescents, a violation of international law. It is a violation of international laws for individual nation-states to execute a person if they were younger than 18 years of age when they committed the crime. In addition, life without parole, detaining and incarnation of children with adults, trying children and adolescents as adults, solitary confinement, and corporal punishment are also violations of international law. The internationally accepted age for criminal responsibility is 12 (Goldson and Muncie 2012).

The European Union has made progress in developing a justice system that is more "child-friendly." The agenda also supports and encourages the development of training curricula

for judges, police, and other professionals regarding the optimal care of children and adolescents involved in the judicial system. This is quite a contrast to the recent era of punishment-based corrections, when longer sentences and cruel punishment were the order of the day. In too many programs that incarcerated adolescents, treatment was so inappropriate that correction officers in adult jails and prisons would not use the same tactics for fear of severe retaliation from the adult inmates.

If the outcome of adolescent detention is to prevent the future crime, there is no evidence that longer sentences reduce reoffending or reduce the likelihood of reoffending. Meta-analyses that combine the results of juvenile studies have found that longer sentences did not reduce recidivism and may have caused an increase in reoffending (Winokur et al. 2008).

The Globalization of Juvenile Justice System

The numbers of adolescents involved in the global juvenile justice system began to grow during the 1980s and 1990s, and the numbers are staggering. During this period, there was a global shift to the public acceptance and use of more punitive approaches when dealing with social problems. The previous approaches and interventions that had been based on welfare, education, and rehabilitative strategies gave way to punitive programs of control and containment.

A philosophy that permeated public attitude about social service systems was also articulated by opponents to social spending on delinquent adolescents. This group argued persuasively that the welfare, education, and rehabilitative approaches had not fixed the social problems of the day and should be defunded and replaced. *Welfare-to-work* was one such program type designed to force people on welfare to work for their benefits. This more punitive approach to providing social services and criminal justice was also applied to programs for adolescent offenders. The ideas were more influential in the developed countries, but this trend also influenced attitudes in developing countries—albeit in some cases—indirectly. By 2005, characteristics of *zero tolerance policing* (the theoretical foundation for using a punitive approach) could be found in Western Europe, South America, Australia, Canada, and Singapore and, to some degree, in other countries and regions. Interventions such as curfews, electronic monitoring, Scared Straight programs, mandatory sentencing, pretrial detention, and transfer to adult court had become commonplace by 2000 (Muncie 2005).

One of the more harmful policy changes during this period was the reduction in age of criminal responsibility. The age of criminal responsibility is defined by the term *doli incapax* (Latin: incapable of crime). This is the age when a child is too young to understand right from wrong; thus, the child cannot be held responsible for his or her criminal actions. The problem is that the age of *doli incapax* is not determined by a developmental marker, but by politicians and policy makers. This is painfully obvious in the variation in age from 8 years of age in Scotland and 10 years of age in England and Wales at the low end of the range and Denmark, Norway, Finland, and Sweden at the high end, whereas a 15-year-old child can be held criminally responsible for his or her actions. Most countries define 14 and younger as the age of *doli incapax.* The age of criminal responsibility in Belgium and Luxembourg is 18. The lower the age of formal involvement in the juvenile justice system has consistently been shown to increase the risk of future incarceration, and health and mental health problems in the short run and throughout the life course (Dünkel and Pruin 2012).

The number of juveniles accused of violating a law, which are transferred to adult criminal court, began going up in the mid-1980s. The number peaked in the mid-1990s. Laws were rewritten to make it easier to transfer adolescent offender cases to adult court. By the 1990s, all 50 states had written transfer laws that allow or require criminal prosecution in adult court of some youthful offenses, even though they were below the jurisdictional age limit. In some states in the USA, specific crimes such as murder,

rapes, and violence with a deadly weapon are mandated to be transferred to adult court.

Transfer laws in juvenile justice were not new in the 1980s, but legislative changes expanded their scope and the number of adolescent offenders whose case was transferred to adult court. What had been the "exception" (i.e., a juvenile case being transferred to adult court) had become the foundation of a frightened public response to youthful offenders.

In the USA, each individual state sets the age at which a child's case can be transferred to an adult court; thus, the age varies from state to state. Often, the debate is over (for lack of a better term) *conservative* and *liberal* models of social services. In reaction to public and political demands, by the mid-1990s, in most states in the USA, there was no minimum age in their juvenile justice code to prevent a case from being transferred to an adult criminal court. Theoretically, a one-year-old child could "stand" trial in an adult court. In other states, the age varies from 11 to 15 years of age (see Table 12.1). During this same period, a number of states established a minimum age of criminal responsibility, but again, these ages varied in a nonsensical way. In Oklahoma, for example, children aged 7 and older are presumed to know right from wrong, and they are capable of committing a crime. To convict a child between 7 and 14 years of age, however, the state prosecutor is required to prove that the child actually knew the act was wrong (Griffin et al. 1998).

There were a few notable countries that resisted employing punitive interventions in youth justice. Belgium, Finland, and Norway are notable. For example, instead of focusing on punishment, the Belgium youth justice system employed restorative justice principles at all stages of the judicial process. The aim of restorative justice is to keep children and adolescent offenders out of the criminal and court processes by using several types of family group conferences where victim and offender are involved in defining and determining restorative justice in their individual case (Tickell and Akester 2004; Walgrave 2011, 2012).

By 2007, juvenile court statistics show that the punitive trend had started to subside. While the number of adolescent cases being transferred to adult court reached their highest numbers in 1997, the number dropped by 35 % in 2007 (the last reported numbers available). Adolescent defendants whose cases were remanded to adult court in 2007 were almost all male (96 %) and primarily African American (62 %). Based on available data from 2007 sources, nearly 14,000 adolescent offender cases were transferred to adult criminal courts in the 21 states that kept records. In 2011, only 13 states reported the total

Table 12.1 Minimum age by state for transferring juvenile cases to the adult criminal court

No minimum age		Age 11	Age 12	Age 13	Age 14	Age 15
Alaska Arizona Delaware Washington, DC Florida Georgia Hawaii Idaho Indiana Maine Maryland Nebraska Nevada	Oklahoma Oregon Pennsylvania Rhode Island South Carolina South Dakota Tennessee Washington West Virginia Wisconsin	Kansas Vermont	Colorado Missouri Montana	Illinois Mississippi New Hampshire New York North Carolina Wyoming	Alabama Arkansas California Connecticut Iowa Kentucky Louisiana Massachusetts Michigan Minnesota New Jersey North Dakota Ohio Texas Utah Virginia	New Mexico

Source Griffin et al. (1998)

number of their adolescent cases that were transferred to an adult court. Even fewer states reported "offense profiles, demographic characteristics, or details regarding processing and sentencing." This makes it difficult to assess historic changes in the treatment of children and adolescents involved in the US criminal justice system. Each state has different laws related to juvenile jurisprudence. More problematic, there are no national data sets that track adolescents who have been tried and sentenced in the criminal justice system in the USA (Addie et al. 2011).

The Numbers in Prison Are Perplexing

Confinement, as a way of controlling crime, is widespread and, in general, is used for both adult and juvenile offenders. Facilities that confine young offenders are not called jails or prisons; they are often given names such as detention centers, training school/secure facility, reception/diagnostic center, and residential treatment center. By the 1990s, these facilities became a primary resource for controlling juvenile delinquency in many countries around the world. Globally, this ripple effect caused by changes in the USA is observable in the numbers of adolescents in prison during this period. Between the period 2004–2006 and the period 2011–2013, the number of young people in prison between 12 and 17 years of age fell from 12 to 10 per 100,000 in this age group. This translates into an estimated drop in the number confined by law enforcement from 86,420 to 72,100. Prison populations under the age of 21 in Ireland make up about 24.7 %, Scotland 18.8 %, England 17.8 %, France 10 %, Italy 4.5 %, and Finland 3.6 %, respectively. In Fig. 12.1, significant increases in Central America increased incarceration rates for all the Americas. In Europe, the juvenile prison population dropped by more than 30 % in most subregions, with the exception of Southern Europe (UNODC 2015).

If the range of age is increased to include young people between 12 and 24, there were 1.6 billon young people globally. This converts into an estimated drop in confinement in this age group from 192,000 to 160,000 young in prison worldwide. The world's young offenders make up a total population about the size of Orlando, Florida, or the population of Sutton, the London borough. This number does not include the number of young people that have a case in a juvenile court or are involved with social services because of adolescent "unlawful" behavior (UNODC 2015).

The numbers of confined young people are not very reliable because many countries do not report the numbers, or for that matter, data on young people in their criminal justice system are collected. In the USA, where the numbers are

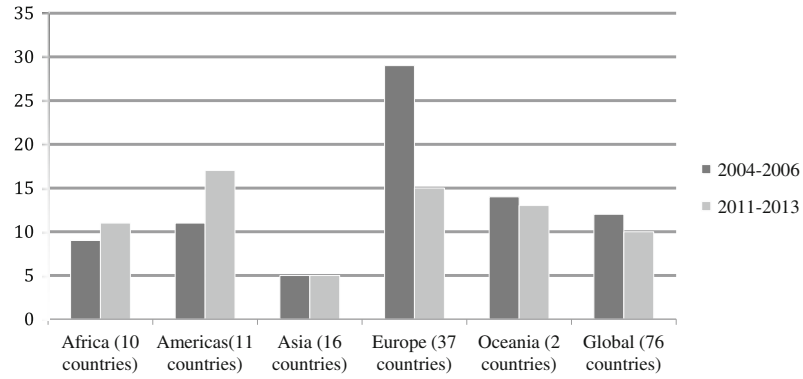


Fig. 12.1 Juvenile prison population, per 100,000 juvenile population, by region (average for the periods 2004–2006 and 2011–2013). *Source* United Nations Survey of Crime Trends and Operations of Criminal Justice Systems 2015

somewhat reliable, in 2013 (the latest data available), a total of 54,148 adolescents were held in publicly and privately operated juvenile residential facilities. The number of adolescents held in residential placement decreased 50 % between 1999 (107,493 juveniles) and 2013 (54,148 juveniles) (Sickmund et al. 2015).

This has not been good news for all adolescents. These numbers include a troubling trend. When residential placement during 2011 was examined by race and ethnicity, the rate of residential placement for African American youth was 4.5 times the rate for white youth. The rate of residential placement for Hispanic youth was 1.8 times the rate for white youth. As a group, these adolescents have several important characteristics in common (i.e., poor neighborhoods and lack of resources) (Hockenberry 2014). This is a condition that is found globally in systems of youth justice. Adolescents from poor families, who are also from a minority group that is discriminated against in their community, make up the majority of adolescents arrested and incarcerated by the youth justice systems.

Given the environmental background of the adolescent offenders, as a group, they are already at high risk of health disparities. Once an adolescent is arrested, the risk of experiencing health problems is increased. In adolescents, not only health problems but also mental health problems are compounded throughout the adolescent's lifetime.

Effects of Arrest: Institutional Risk

What should help shape our thinking is the knowledge that the vast majority of adolescents who violate a law or statue are never caught or taken into custody. Despite one's view of adolescent criminal behavior, the juvenile justice system has a separate and independent effect on all aspects of the life of an adolescent taken into custody. This effect of involvement in the criminal justice system, aside from any punishment or retribution, is almost always devastating to the life-course trajectory of the adolescent. In particular, this is true for adolescents with few resources and those with or developing a mental health disorder. In the USA, the number of adolescents diagnosed with "depression, anxiety, attention, and thought disorders" is twice as high as that found in the general population, approximately 18–22 % (Grisso 2000). Amazingly, this percentage does not include adolescents with the diagnoses of "conduct disorders and substance use disorders." When you include these disorders, the percentages increase to between 65 and 70 % of young people arrested each year in the USA. Over 15 % of these young people have a mental illness so severe: "It impairs his or her ability to function as a young person and grow into a responsible adult" (Hammond 2007).

The Effects of Incarceration on Psychosocial Maturity

As one develops physically during adolescence, one also develops psychosocially. Psychosocial maturity is characterized by improvements in perspective, responsibility, and temperament. Furthermore, the developmental course of psychosocial maturity is shaped and influenced by normative variations in the adolescent's social context. In the case of juvenile justice, how does an abnormal context, such as incarceration, influence the adolescent's psychosocial maturation?

To answer this question, Dmitrieva et al. (2012) used data from a 7-year longitudinal study of 1171 adolescent males. They compared the effects of confinement in a secure juvenile facility as opposed to residential treatment facilities and examined whether the facility and age at incarceration affected psychosocial maturity. What they learned was that incarceration in a secure facility had a short-term negative effect. There was a decline in temperance and responsibility. The total amount of time in a residential treatment facility had a negative effect on the developmental trajectory of psychosocial maturity. Age at the time of the incarceration moderated the effect of the incarceration for all adolescents. Older adolescents experienced more short-term negative effects of incarceration in a

secure facility. Moreover, older adolescents (more than younger adolescents) experienced some short-term positive effects in a residential treatment setting. Additionally, adolescents who felt that the facility where they were confined was unsafe showed a decline in temperance.

LGBTQ Health and Justice

There is a long-standing disconnect between the reality of being an LGBTQ adolescent and the juvenile justice policy makers, managers, and staff (Himmelstein and Brückner 2011). Contemporary juvenile justice models are designed to accommodate heterosexual staff and offenders. Once adjudicated, LGBTQ youth experience bias and discriminatory treatment. In too many cases, this occurs within organizations and programs that are unable to respond to the unique experiences and circumstances of LGBTQ offenders (Hunt and Moodie-Mills 2012). Consequently, LGBTQ adolescents are another group that are overrepresented and underserved in the juvenile justice system.

LGBTQ adolescents, much like the heterosexual adolescents, must navigate many challenges as they mature into adulthood. Yet, in addition, LGBTQ adolescents must deal with institutional discrimination because of their sexual orientation and gender identity (Garnette et al. 2011). They must deal with sexual, physical, and emotional abuse, both from peers and family members (Birkett et al. 2009). Unlike their heterosexual peers, however, LGBTQ adolescents face numerous additional health risks, for example, bullying, depression, substance abuse, risky sexual behavior, suicidal thoughts and attempts, running away, and homelessness (Garofalo et al. 2006; Salomonsen-Sautel et al. 2008; Walls et al. 2010).

A condition that helps modify and even inoculate the LGBTQ adolescent from the health burden (e.g., mental and physical health) associated with social stigma, rejection, and discrimination is family support and acceptance. High levels of family acceptance result in better self-esteem, more general social support, and better long-term health among LGBTQ youth (Development Services Group, Inc. & United States of America 2014).

When examining LGBTQ youth involved in the juvenile justice system, it is clear that delinquent LGBTQ youth are treated more harshly than their contemporaries. Compared to their incarcerated heterosexual peers, LGBTQ youth are more often held in secure confinement for offenses such as school truancy, probation violations, running away, prostitution, and for their own safety (Development Services Group, Inc. & United States of America 2014). When LGBTQ youth are taken into custody, they are twice as likely as their heterosexual counterpart to have experienced family conflict, child abuse, homelessness, and school expulsion. Of these adolescents, some 26 % report being pushed out of their home by their parents, by non-accepting families (Holsinger et al. 2016). Alterative programs that should step into support these adolescents, such as foster care, health centers, and other youth-serving institutions, are all too often unsafe for LGBTQ adolescents (Hunt and Moodier-Mills 2012). Similar trends were observed for school expulsion, juvenile arrest, and conviction.

Reforms are needed in systems that provide services to adolescents so as to better meet the needs of LGBTQ youths: specific training for juvenile justice personnel on the nature and appropriate treatment and management of incarcerated LGBTQ youth; the development of specific policies and procedures for interacting with incarcerated LGBTQ adolescents; and identifying and eliminating the discrepancy between school disciplines imposed on these LGBTQ adolescents as compared to their heterosexual peers. At the macrolevel, federal legislation is needed to prohibit discrimination against LGBTQ in schools and in the juvenile justice system. What is unassailable is the knowledge that LGBTQ adolescents suffer disproportionate educational and criminal punishment than their heterosexual counterpart, an inconsistency that cannot be explained by greater LGBTQ engagement in illegal behavior and activity.

Juvenile Suicide in Confinement

The national data on suicide in the US general population published by the National Center for Injury Prevention and Control show that suicide is the 2nd leading cause of death for those between 15 and 24 years of age and suicide is the 3rd leading cause of death for those between 10 and 14 years of age. Suicide takes the life of approximately 4600 young people a year or 10.9 per 100,000 adolescents. The most common forms of suicide are firearms (45 %) and suffocation (40 %). In addition to those who commit suicide, approximately 157,000 young people a year in this age group (ages between 10 and 24) are treated at emergency hospital departments across the USA for self-inflicted injuries. Nationally, some 16 % of young people in grades 9 through 12 have reported that they had seriously considered suicide. Another 13 % of students developed a plan. Of serious concern, some 8 % of the adolescents in US high schools (secondary education) reported attempting suicide in the past year. These suicides are among adolescents in the general population (Kann et al. 2014).

In the USA, there is no federal agency that has the responsibility to keep records of suicide among adolescents in juvenile detention facilities. Consequently, we only have estimates not a real count. An estimate based on scientific studies by Hayes (2009) suggests that the suicide rates are more than four times higher for adolescents in confinement than for adolescents in the general population. This would be a rate of approximately 45 per 100,000 adolescents in confinement compared to 10.9 pre 100,000 for adolescents in the general population.

A 2009 nationwide study, in the USA, found that 48.1 % of all adolescents who committed suicide while in legal confinement were in state-run juvenile facilities. Many adolescents committed suicide (39.2 %) in county-run juvenile facilities. Another 12.7 % of adolescent suicide occurred in private juvenile detention programs. Nearly 80 % of adolescents who committed suicide were held in detention centers. Virtually, all suicides in juvenile detention centers took place in the first 4 months in detention. More than 40 % of adolescent suicides occurred in the first 72 h of the juvenile being confined in a juvenile detention centers. The average age of adolescents who commit suicide while in confinement was 15.7. Some 70 % of the victims were between 15 and 17 years of age. While the majority of adolescents in the juvenile justice system were African American (917 out of 100,000 adolescents in confinement), Native American (663 out of 100,000 adolescents in confinement), and Hispanic (341 out of 100,000 adolescents in confinement), the vast majority (68.4 %) of those committing suicide were Caucasian (197 out of 100,000 adolescents in confinement) and male (79.7 %). Roughly 70 % of the adolescents who committed suicide were confined for nonviolent offenses (Hayes 2009; National Center for Juvenile Justice 2011). This is a national disgrace. The vast majority of the suicides among incarcerated youth are preventable.

Mental Health Issues in Detained Youth

When an adolescent's behavior comes to the attention of law enforcement, the behavior should also be considered a likely symptom of a health issue. This would necessitate, at the very least, a biopsychosocial assessment to determine the individual adolescent's health, social service, and mental health needs. Inadequate health care for adolescents in confinement is a social justice issue. Subsequently, the inadequate health care contributes to a higher crime rate, disability, and rate of mental illness as these adolescents reach adulthood.

Generally, between 18 and 20 % of adolescents in the US experience a mental health problem. Among adolescents who were incarcerated (approximately 60,000 yearly), the numbers of adolescents presenting with one or more mental health problems approaches 70 %. Co-occurring with delinquent behavior are often mental health issues and prodromal symptoms of a developing mental health problem.

It is widely acknowledged that alcohol, other drug abuse, and mental health disorders are linked with risk factors that result in an unacceptable burden of illness, disability, and death among incarcerated adolescents. Likewise, in addition to substance abuse, the most common mental health disorders are as follows: ADHD (attention deficit hyperactivity disorder), bipolar disorder, and depression. Furthermore, as many as 93 % of incarcerated youth have experienced one or more serious traumas (Children's Defense Fund 2012).

Despite the circumstances and conditions, which contribute to delinquent behavior, this lack of maturity in cognition is too often an impediment in emotionally charged situations. Because adolescents are less capable of adequately regulating emotions and actions, adolescents often excerpt less self-control, making more risky decision, and even get involved in behavior they know will harm them. They often are self-destructive and participate in self-harm.

Racial and Ethnic Disparities in the Utilization of Mental Health Services

Another serious public health problem that directly harms racial and ethnic adolescents is the underutilization of mental health services. This has been a long-standing problem. Research continues to find differences in mental health service use across racial and ethnic groups. In a study of high-risk adolescents, Garland et al. (2005) reported that they looked at the case records of 1256 youths, 6–18 years of age, who received services from agencies servicing children and adolescents (i.e., alcohol and drug abuse treatment services, child welfare, juvenile justice, special education, and mental health service). They reported that high-risk adolescents are about one-half as to receive mental health services.

The lack of access and cultural norms continues to be a problem for minority youth. Fewer racial and ethnic adolescents are referred for mental health treatment, and when they are referred, treatment varies depending on the parents' level of education and prior use of mental health services. Among African Americans, unlike whites, the more the education, the less likely they are to use mental health services. Even more frustrating, African Americans who had used mental health services in the past were less likely to be current users of mental health services (Broman 2012). Because mental health services can make such a positive difference in the life-course trajectory of many minority at-risk children and adolescents, these differences in utilization must be resolved.

Given the reality of the high numbers of mental health issues among arrested adolescents and the propensity for arrested youth to self-medicate; we argue, best practices, when evaluating adolescents in detention is to screen and assess for substance abuse, trauma, and mental health problems. What is not in dispute, substance abuse and mental health disorders are a major challenge to a successful rehabilitation.

Mental Health Screening

Screening for substance abuse, trauma, and mental health disorders should be standard part of the protocol. If screening indicates a possible mental health problem, screening should be followed by a complete evaluation. Screening and assessment need to occur as early in detention as possible. The goal is to identify adolescents with serious mental health disorders that could deteriorate or be exacerbated by incarceration. If indicated, adolescents with a serious mental health disorder should be transferred to a more appropriate facility.

A free rapid screen to begin the process of assessing an adolescent for the co-occurring disorders of mental health, substance abuse, suicide risk, and trauma is available. Type into an Internet browser the following: *AC-OK-COD Adolescent Screen* to download the free screen and a brief report on the metrics of the screen.

Neuroscience and Adolescent Criminal Culpability

Neuroscience was first applied to the legal definition of adolescent in 2005, when the majority opinion of the US Supreme Court held that "execution of offenders under the age of 18 violated the Eighth Amendment barring cruel and unusual punishments" (Roper v. Simmons, 543 US 551). This ruling necessitated a shift away from "criminality and punishment" to the recognition that adolescents may not be fully mature emotionally or they may be still developing cognitively. Nothing short of politics has had a greater impact on how juvenile justice is administered than neuroscience.

The Supreme Court, Neuroscience, and Adolescents' Criminal Culpability

An evolving set of decisions by the US Supreme Court, in part based on developmental science, has reasserted the legal requirement for differential treatment of juvenile offenders as opposed to adult offenders. The impact on juvenile law and policy and general health will be important for adolescents in the USA. In these Supreme Court decisions, the majority opinion cited scientific evidence on both behavioral and brain development (i.e., immature cognitive functioning in juveniles). When the Supreme Court found that execution of offenders under the age of 18 violated the Eighth Amendment (Roper v. Simmons, 543 US 551), approximately 100 juveniles were moved off of *death row*. Another Supreme Court decision in 2010 (Graham v. Florida, US 560 2010) used neuroscience to rule that juvenile offenders could only be sentenced to life in prison without parole for homicide. An additional 100 juveniles serving a sentence of life without parole for non-homicide offenses were affected. This trend continued; in 2012, the Supreme Court held that mandatory sentences of life without parole for juveniles also violate the Eighth Amendment, barring cruel, and unusual punishments (Cohen and Casey 2014; Partridge 2013; Steinberg 2013). These Supreme Court decisions have taken a first step, but the USA still has a long way to go to be in compliance with the 1989 United Nations Convention on the Rights of the Child (UNICEF 1989), which the USA has not signed.

Adolescence Cognition and Maturity

The Supreme Court rulings, which basically ordered that "adolescence" be considered a mitigating factor during the sentencing phase, based their decisions on scientific evidence. The court accepted the science on cognitive development and maturity, which shows that during adolescence, the older regions of the brain (the reptilian brain) is the first to reach maturity. The higher order association in the neocortex and limbic brain (which is responsible for emotions), both mature later. The neocortex is responsible for the development of human language, abstract thought, imagination, and consciousness. These areas of the prefrontal cortex play an important role in the regulation of behavior. Consequently, in the heat of the moment, confronted by a conceivable threat, in the company of peers, adolescents may employ emotionally based responses, which utilize less mature prefrontal control leading to poor behavior choices. Adolescents are more reliant on emotional regions of their brain than on prefrontal control regions as compared to adults (Bonnie and Scott 2013).

Subsequently, what makes life complicated and difficult for adolescents is that they are often faced with adult situations and problems. These adult situations require maturity and self-control—a response that adolescents can find difficult because their higher order cognitive functions do not reach maturity until they are in their early twenties (Gogtay et al. 2004; Pfeifer and Allen 2012).

Age–Crime Curve

As a child reaches adolescence, there are marked changes in behavior, some quite dramatic. Physically, the child quickly turns into a little

adult. In many ways, they are able to do what adults can do. In other ways, decision making and behavior are impaired by elevated risk taking and the lack of mature judgment, self-control, and impulsiveness, which depend on neurobiological changes that will develop throughout adolescence and young adulthood (Spear and Varlinskaya 2010).

Probably, one of the best illustrations of this lack of immature, emotional decision making, and risk taking among adolescents is what is known as the "age–crime curve." It is an age- and gender-related behavioral phenomenon. The instances of criminal behavior increase rapidly from age 12 and peak around 17, and then decline rapidly (see Fig. 12.2). This graph approximates the age range for males who were arrested for a crime. By plotting offenders by age, what we see on the graph is an "age affect" on criminal behavior (Richards 2011). Using this chart, among male children born today, between 6 and 7 out of every 100 will be arrested before they are 18 years of age. Of those arrested, the vast majority will be for nonviolent offenses. However, slightly over 1 per 100 will be arrested for a violent crime before they are 18 years of age. These numbers are from the National American data related to the age and crime index collected and distributed by the Federal Bureau of Investigation, Washington, D.C. (Federal Bureau of Investigation 2014).

While Farrington's curve is being used here to illustrate this phenomenon in adolescence, the relationship between age and crime is one of the well-established tenets of criminology (Fagan and Western 2005). Hirschi (the developer of "Control Theory") wrote that the age–crime curve is universal (Hirschi and Gottfredson 1983). Whereas the graph is an expression of juvenile crime, keep in mind that juveniles can be arrested for offenses that are not an offense for adults. Additionally, changes in legislation and public policy can increase the contact between adolescents and the police. A study by Farrell (2009), for instance, which examined laws allowing police to use a "move on" authority, found that adolescents were disproportionately impacted along with other groups, such as the homelessness.

What this curve also illustrates is that most adolescents "grow out" of criminal behavior. Based on self-report studies, 80–90 % of teenage boys admit committing crimes that if caught would have resulted in arrest and incarceration (Moffitt 1993). Therefore, the curve also suggests that more boys will commit a crime than are incarcerated for a crime (Scott and Steinberg 2008).

Although there are racial differences, almost 40 % of adolescents and young adult males in the USA are arrested by the age of 23. In an analysis of national survey data of adolescents and young adults in the USA from 1997 to 2008, Brame et al. (2014) found that:

- By 18 years of age, 30 % of African American teens, 26 % of Hispanic teens, and 22 % of white teens had been arrested for a non-traffic offense, at least once.

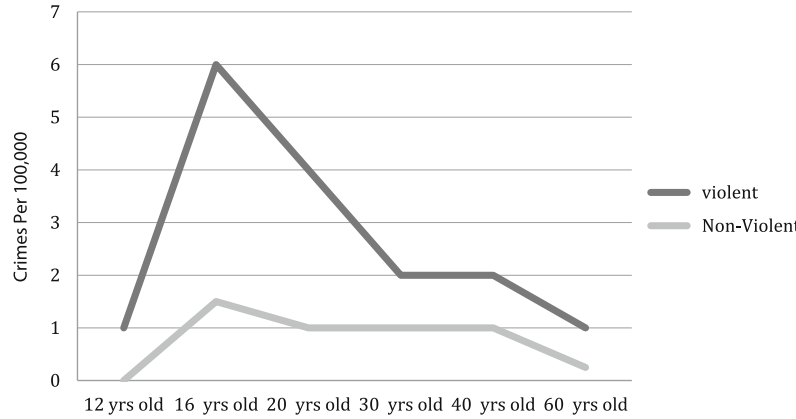


Fig. 12.2 An age–crime curve for US males

- By 23 years of age, 49 % of African American, 44 % of Hispanic, and 38 % of white young adult men had been arrested for a non-traffic offense.

As for adolescent and young adult females, Brame and colleagues found that arrest for a non-traffic offense increased between the ages of 18 and 23, respectively. Unlike adolescent boys, there was a little racial difference in arrests. They are as follows:

- By 18 years of age, arrest rates were 12 % for white females, 11.8 % for Hispanic females, and 11.9 % for African America females.
- By 23 years of age, there was slightly more racial difference among the young women. Roughly 20 % of white females, 18 % of Hispanic females, and 16 % of African American females were arrested.

These differences in age and crime are influenced by many variables. This relationship between criminal behavior and age is extremely important, because it has been found to exist independently on other influences such as poverty, lack of education, growing up in a violent community, and lack of social capital (Farrington 1986).

Ethical Issues About Neurosciences and Juvenile Justice

Critics rightly point out that research from the neurosciences can often be more influential than the science would suggest. It certainly is not clear whether neuroscience will ever be able to answer questions about the culpability of juvenile defendants or mitigate the culpability of juvenile defendants. Given the current validity and reliability of the science, critics question the usefulness. Neuroscience is not a tool or a science that can replace or add to the psychosocial assessments currently available and in use (Aronson 2009; Moreno 2009).

Accordingly, this lack of predictive accuracy and reliability is the seed of the ethical issues. Essentially, because there are so many other factors involved in delinquent behavior, especially socioeconomic issues, it is the potential harm that is of concern. If neuroscience becomes developed enough to predict a person's future cognitive structure and behavior, the ethical question becomes one of validity. Can cognitive structure predict deviant behaviors and thinking? Finally, if it is used to determine guilt or threat, who will decide when and how to use that information (Greely 2015)? Will there be *false positives*?

Despite its shortcomings, the science continues to improve our understanding of the development of cognition. Whether or not neuroscience becomes a viable tool for predicting behavior or whether it will be able to aid sentencing or parole determination is yet to be determined. Despite the questions, findings from neuroscience do strongly support the long-standing observation that there are major cognitive differences between the adolescent brain and the adult brain (Thayer et al. 2012).

Risks to Adolescent Health

All children, adolescents, and young people are "resources to be developed" (Roth and Brooks-Gunn 2003). In other words, children and adolescents of both offender and non-offender reflect the communities in which they grow up. Communities shape families, and families and the communities shape adolescent development and behavior.

Girls, Health, and Juvenile Justice

Most of the factors and circumstances that threaten the health of adolescent boys also threaten the health of adolescent girls. Indeed, while there are many similarities, there are significant differences related to the impact of risks on girls who are identified as "offenders." Knowledge of these differences is essential for developing and identifying effective prevention and rehabilitation programs for adolescent girls and young women who are at risk and those who are involved in a juvenile justice system.

Research over the years has identified critical protective and risk factors, which can increase an adolescent's chances of becoming involved in the juvenile justice system (Ferreiro et al. 2012). Risk and protective factors for adolescent girls and young women can be categorized under individual, family, peers, school, and community (Lerner et al. 2007). First, the protective factors will be presented; then, these will be compared to risk factors. Using this approach, we start with differences between girls who do not become offenders and girls who become involved in juvenile offending.

Adolescent girls and young women who do *not* offend are distinct in that they have supportive families. Parental discipline is consistent. Their behavior is monitored. The girls have positive bonds with family, school, and community (Mullis et al. 2004). Adolescent girls who do *not* offend are girls with higher levels of self-esteem and girls who score high on measures of optimism and confidence (Bloom et al. 2002; Cernkovich et al. 2008). Girls and young women who are committed to academic pursuits and participate in extracurricular activities in and outside school, and associated with conventional peers, typically do not become involved in delinquent behavior (Cernkovich et al. 2008). Mutuality and bonding are key factors in building resilience (Cherry and Dillon 2014). In addition, adolescent girls with stable caregivers (other than a parent) are less likely to be impacted by a dysfunctional, unhealthy community (Patterson et al. 1998).

Etiology of Adolescent Female Offending

Probably, one of the most important things to keep in mind when trying to understand girls who are convicted of a crime is that typically they have had a childhood with more disadvantages than their male offending counterpart. In an analysis of the Stockholm Birth Cohort Study (which followed a group of girls and boys until they were 48 years of age), Estrada and Nilsson (2012) compared the social background and adult living conditions of males and females who had been convicted of a crime. Their findings were conclusive: Females who had been incarcerated as a group had experienced more disadvantages during childhoods than the males who had been convicted of a crime. These childhood disadvantages are well known, and the research has verified their link to criminal conviction over many generations.

Adolescent girls and young women who do become involved in the juvenile justice system have a number of characteristics in common. Studies of adolescent risk factors in the USA over the years have validated these risk factors, for example:

- Poverty,
- Low socioeconomic status,
- Inadequate health care,
- Psychopathology and insufficient mental health care,
- Trauma,
- Lack of adequate nurturing,
- Poor nutrition,
- Weak parental support,
- Poor parenting practices,
- Parental history of violence or involvement in criminal activities,
- Communities with little social capital,
- Community violence,
- Racial disparities,
- Psychopathology,
- Child abuse (physical, sexual, and emotional abuse),
- Large and impersonal school environments,
- School failure,
- Substance abuse,
- Immersion in a negative peer culture, and
- Tolerance of social deviance criminality (Cernkovich et al. 2008; Foy, Ritchie and Conway 2012; Goldner et al. 1988; Peters et al. 2011; Kerr et al. 2014; Vagi et al. 2013).

In these studies, poverty was typically defined as the parents' income level. Socioeconomic status was defined as the parents' education and occupational levels. The psychopathology domain includes anxiety, depression, trauma, PTSD, suicidality, and other mental health disorders. These risk factors, which are preventable,

affect the health and future of adolescent girls and young women during adolescence and across their life span.

Child Sexual Abuse and Adolescents

For a large number of children around the world, especially among girls, child sexual abuse and sexual assault are the first trauma and threat to their short- and long-term health. These are not small numbers of girls and boys who are sexually abused. In a prevalence study of adolescents, the question was asked: What is the probability of an adolescent being sexual abuse and experiencing sexual assault by the age of 17 in the USA? The adolescents were contacted by telephone, and self-report information was collected in 2003, 2008, and 2011, respectively. What was revealed adds to the accumulated knowledge about the negative effects on a lifetime experience with sexual abuse and sexual assault during adulthood (Finkelhor et al. 2014).

The incidence of sexual abuse and sexual assault experienced by the age of 17 was 26.6 % for girls and 5.1 % for boys, respectively. For adolescent girls, the chances of experiencing sexual abuse and sexual assault were 1 of 4, whereas for boys, the chances of being sexually abused and sexual assaulted were 1 of 20. When the researchers looked at the difference between those abused by adults and peers, 11.2 % of girls and 1.9 % of boys in this cohort were sexually abused and sexual assaulted by adults. This indicates that peers are responsible for the majority of the sexual abuse and sexual assault of children and adolescents. Girls also experience sexually abuse and sexual assault later in their teens than boys. The occurrences increased for girls from 16.8 % when they were 15 years of age to 26.6 % for girls who were 17 years of age at the time of the survey. For boys, sexual abuse and sexual assault increased from 4.3 % at 15 years of age to 5.1 % at 17 years of age (Finkelhor et al. 2014).

The actual numbers are certainly higher than reported. Most researchers would agree that individual information about past sexual abuse in a self-report survey would typically be underreported. Even so, these are appallingly high numbers of sexual abuse and sexual assault among children and adolescents in the USA. The health burden among children and adolescents from sexual abuse, a preventable crime, is absolutely unacceptable.

Objectification Theory

One of the theories put forth to explain the experiential consequences of being female in the USA (i.e., the large numbers of sexual assaults on females) is *objectification theory*. This theory underlines a women's experience as growing up in a sociocultural context where the female body is sexually objectified. A woman's worth is based on her body's appearance and sexual functions (Fredrickson and Roberts 1997). In this environment, girls and women develop chronic body and behavior checking. The purpose is to fit into the concept of appearance and behavior to increase their social worth, which in turn perpetuates the *objectification* of all girls and women. The accumulation of these sexist pressures results in an increased shame, anxiety, suicidality, cutting, self-harm, and reduced motivation to compete with males, and it can help explain mental health disorders, which unduly affect girls and women (i.e., depression, eating disorders, and sexual dysfunction) (Fredrickson and Roberts 1997; Kerr et al. 2014). The general effect of *objectification* has implications for the current health and life course of all girls and women.

Sexually Abused Adolescents in the Juvenile Justice System

Research over the years has confirmed the association between sexual abuse and trauma, non-suicidal self-injury, post-traumatic stress symptoms, and dissociation. When these associations were tested with a sample of adolescents recruited from the juvenile justice system in the USA, the researchers found that sexual abuse

predicted post-traumatic stress symptoms and self-injury over and above other forms of traumatic experiences. Youth in the juvenile justice system who experience sexual abuse typically have higher rates of post-traumatic stress symptoms (PTSD) (Chaplo et al. 2015). Interventions that treat adolescence trauma among those in the juvenile justice system could reduce the harm and improve the life-course trajectory of those who are sexually abused, as well as those who have survived a life-changing traumatic experience, and as a result suffer from PTSD.

Adolescents Sexual Offenders

Sadly, both boys and girls who have been sexually abused are frequently incarcerated for committing a sexual offense against other children and adolescents. These adolescents face suspicion, reticule, and exploitation by staff and peers when incarcerated. They are enveloped in a cultural of bias that sets them apart from other adolescents even as they are being victimized. The question that must be asked is, are these sexual offending adolescents victims or perpetrator? Although in most cases these sexual offenders are both victim and perpetrator, little research focusing on adolescent sexual offenders has been conducted. A recent study by Van der Put et al. (2014) found that while both boys and girls who were incarcerated for a sexual offense were very similar, girls who were incarcerated for a nonsexual but violent offense were very different from girls who were incarcerated for a sexual offense.

Girls incarcerated for a sexual offense when compared to girls incarcerated for a violent offense had fewer antisocial friends and fewer school problems such as being truant and dropping out of school. Girls incarcerated for a violent offense had more family problems. They ran away from home more often, and they were more rebellious and more defiant of authority. Girls incarcerated for a sexual offense were more often socially isolated and were more often sexually abused by a non-family member than boys incarcerate for a sexual offense or girls incarcerated for a violent offense (Van der Put et al. 2014). Studies of this type are providing a better understanding of the etiology of adolescent sexual offending. With increased knowledge about adolescents who are sexual offenders, prevention and treatment programs can be developed and improved. Without effective treatment, the life-course trajectory of many incarcerated adolescent sexual offenders is at risk of a life of reoffending and subsequent incarcerations.

Racial Health Disparities in the Juvenile Justice System

There is no dispute that racial disparities permeate the current US juvenile justice system. African American adolescents and youth of color are arrested, convicted, and incarcerated in larger numbers than other adolescents, particularly white adolescent boys. Social scientist have long recognized that race and ethnic groups in the USA are arrested and incarcerated far more often than adolescents identified as white. Similarly, racial and ethnic minority in most countries around the world typically experience more severe justice and longer incarceration than those in the majority. This disparity in the application of punitive legal sanctions extends from the adult into the juvenile justice system. The numbers of minority adolescents arrested support such bold and all-encompassing statements (Lacey 2013).

According to the US Bureau of Census in 2014, 63 % of the population was made up of Non-Hispanic whites. Hispanics accounted for 17 %, African Americans 12.7 %, and Asian 5 %, and multiracial Americans make up 2.4 % of the population. Yet, of the 1,508,636 people in prison, whites (63 % of the population) account for 34.4 % of people in federal and state prisons, African Americans (12.7 % of the population) account for 37.4 %, and Hispanic (17 % of the population) made up 22.3 % of people in federal and state prisons. On any given day in the USA, 60 % of all people in prison are people of color. Looking closer at the numbers, 10 % of all African American men in their thirties and 12 %

of African Americans youth in their 20s are in prison or jail on any given day (Carson 2015).

The racial disparities in the US justice system are staggering. African American males have a 1 in 3 chance of going to prison in their lifetime. African American women have a 1 in 18 chance of going to prison during their lifetime. Hispanics males who have 1 of 6 chances of going to prison and Hispanic females who have 1 of 45 chances are slightly less at risk of going to prison than African Americans. The real disparity is between whites, African Americans, and Hispanics. White males have a 1 in 17 chance of going to prison, while white females have a 1 in 111 chance of going to prison during their lifetime. Adding to a widening justice and health disparity, the US Sentencing Commission found that African Americans receive sentences that are 10–20 % longer than those of whites for the same crime (Sessions 2010).

The numbers of both adult and adolescent offenders have declined. After hitting a high of 77,800 incarcerated adolescents in 1999, the number of incarcerated youth had declined to 35,200 by 2013. Although the number of adolescents transferred to adult prisons and jails to serve their sentences has declined from 15,000 in 1997, there were still 5235 adolescents transferred to adult prisons and jails in 2014 (Sickmund et al. 2015).

Crime and Disadvantaged Communities

Notwithstanding research that continues to search for differences in individual biological and psychological characteristics and markers to explain criminal behavior, what is no long in doubt is the important role that communities play in racial differences in criminal behavior. When this hypothesis was tested in the 1990s to validate differences in the structural context of communities, the researchers found that communities with higher levels of disadvantage (low social capital) had higher levels of crime than communities with more advantages (high social capital). Although more minority groups live in these disadvantaged communities, such communities damage and injure minority and white children, adolescents, and adults who grow up and live in these communities (Krivo and Peterson 1996; Krivo et al. 2009).

Using instructional supports and social capital as a framework to categorize these communities has revealed institutional and ideological forces, which makes it very difficult for adolescents to navigate the transition into adulthood. To succeed in life, African Americans, Hispanics, and other minority children, adolescents, and adults who live in these ecologically dissimilar communities must develop and manage multiple cultures, develop strategies for overcoming cultural hurdles, and secure and retain support from institutions with adequate social capital (Stanton-Salazar 1997). Consequently, because white adolescents tend to live in communities with more advantage and because African American adolescents are more likely to live in disadvantaged communities, research over the years has shown that racial differences in crime are heavily attributable to structural differences in the communities in which adolescents and their families live (McNulty 2001; Peterson 2012).

Living in a poor, dysfunctional community is only one problem that plagues adolescent health and their life course (Goldner et al. 2011). By virtue of living in these communities, most children will accumulate a number of co-occurring problems by the time they reach adolescent. Fundamentally, because crime among adolescents typically emerge from an combination of problems, and a lack of community resources, it could be observed that adolescents often become as dysfunctional as the community in which they grow up and live (Garbarino 2009; Wright et al. 2014).

Parental Involvement in Juvenile Justice

To this point in this chapter, parents and their role in the juvenile justice system have not been explicated, for good reason. Social researchers, family advocacy groups, and criminologist have

pointed out that there is a general lack of parental involvement in the juvenile justice system. As a result, the research is limited on the role of parents and their capacity for contributing to the prevention and rehabilitation of their children (Burke et al. 2014). When the juvenile justice system functions from an authoritarian focus (i.e., to punish and control), families and parents are not essential to incarceration and probation. Even in the face of clinical, developmental, sociocultural, and intervention theory, many in the juvenile justice system do not include family (Jacobs et al. 2011). To make the point more clearly, if the goal of juvenile justice is to punish and control, families have no role. If the goal is to influence and improve the adolescent development and level of social function, the parent(s) involvement (if possible) is a significant resource.

The role of parents in shaping adolescent behavior can be subtle and crucial (Burke et al. 2014). In a study by Janssen et al. (2014), the importance of parenting in reducing delinquent behavior of their adolescent children was tested. They used one of the well-known correlates to examine parenting, the amount of time adolescents spend in criminogenic settings and delinquent behavior. The study Janssen and his group conducted, with a sample of 603 Dutch adolescents 12–19 years of age, showed that "more parental monitoring," "more parental limit setting," and "a higher quality of the parent adolescent relationship" were predictive of adolescents spending less time in criminogenic settings among adolescents. Conversely, when parental limit setting was inadequate or nonexistent, and when the parent–adolescent relationship was poor or strained, the time the adolescent spent in criminogenic settings increased over time.

A qualitative study by Elkington et al. (2015) found basically the same family dynamics. When the level of family function was lower, adolescent risk behavior increased. When the quality of relationships and communication between parents and adolescents was poor, delinquent behavior was high. When parents do not set limits and monitor their adolescent's behavior, adolescents are disposed to be more delinquent. The participation of families in family-based interventions with their at-risk youth who were on probation was able to strengthen family functioning and decrease juvenile delinquent behavior. The researchers also reported that the families were willing participants and interested in helping their at-risk adolescents, which could be a mitigating factor. Of course, as we know, many adolescents in custody do not have functioning families. Where families are available and willing to get involved with the juvenile justice system to help their children, they need to be cultivated, supported, and strengthened both emotionally and financially by the juvenile justice system.

Preventing Delinquent Behavior

There is no question or argument about the need for effective adolescent crime prevention programs to reduce the number of adolescents who are arrested and incarcerated. Theoretically, prevention programs are the best hope in the short run, and if successful, they can improve the life course of at-risk adolescents. The caveat is that prevention programs can be effective and some can be ineffective and even catastrophic. Evaluations of the effectiveness of adolescent crime prevention programs indicate some prevention programs work, some are promising, and others do not work. Some programs work for some children and adolescents, and others do not or have less than desired outcomes (Sherman et al. 1998). The question is, what works, for whom, and under what conditions?

In the USA, as in other countries with developed economies, reducing serious crime depends on building effective prevention programs in urban communities where poverty is highly concentrated. In general, interventions such as behavioral-oriented programs, which focus on parenting skills training, behavioral modeling, and behavioral contracting, have produced the best outcomes. Multimodal programs, or several programs, focused on an at-risk adolescent carried out in the family context are more

effective than individual- and group-based programs. Less intensive programs typically result in better outcomes; however, the intensity of the program needs to match the level of risk from the adolescent (Vries et al. 2015).

Preadolescent programs designed to promote normal and positive youth development, and growth must begin with a solid foundation during early childhood. Some of the most effective early interventions are home visits for infants by nurses and other professionals (i.e., psychologist and social workers), preschool classes with weekly home visits by preschool teachers, family therapy and parent training for families with at-risk preadolescents and delinquent youth, teaching social competency, and coaching high-risk children in thinking skills (Sherman et al. 1998).

Program types that are growing in popularity such as community courts and home detention for youth still have not been subjected to rigorous outcome evaluation studies. Although a few programs have been evaluated that reduce violent crime, only a small number are considered effective and model programs; the vast majority was found to be ineffective or promising. The National Institute of Justice reported that among 394 programs evaluated, only about 21 % were effective, 60 % were promising, and 19 % had no effect (Office of Justice Programs 2015).

The absence of rigorous evaluations of most of the programs dedicated to reducing juvenile crime suggests that nationally, adolescent crime prevention policies and programming (such as prevention programs for adults) continue to be politically and ideologically driven rather than evidence-based practice (National Gang Center 2010).

Prevention Program that Work

There are 55 programs for at-risk children and adolescents that have been evaluated and found to be effective by the US National Institute of Justice (Office of Justice Programs 2015). The following are the examples of the programs:

- Adolescent Diversion Project (Michigan State University) is a strength-based, advocacy-oriented program that diverts arrested youth from formal processing in the juvenile justice system and provides them community-based services.
- Adolescent Community Reinforcement Approach is an outpatient program targeting 13–25-year-olds that aims to replace activities supporting alcohol and drug use with positive behaviors that support recovery.
- Adult in the Making (AIM) is a family-centered preventive intervention designed to enhance the family protective process and self-regulatory competence to deter escalation of alcohol use and development of substance use problems.
- Big Brothers Big Sisters of America (BBBS) Community-Based Mentoring (CBM) offers one-to-one mentoring in a community setting for at-risk youth between 6 and 18 years of age.
- Multidimensional Family Therapy is a manualized family-based treatment and substance abuse prevention program developed for adolescents with drug and behavior problems. The program is typically delivered in an outpatient setting, but it can also be used in inpatient settings.
- Multidimensional Treatment Foster Care–Adolescents is a behavioral treatment alternative to residential placement for adolescents who have problems with chronic antisocial behavior, emotional disturbance, and delinquency.
- SNAP® Under 12 Outreach Project is a multisystemic intervention for boys under age 12 displaying aggressive and antisocial behavior problems.

Prevention Program That Do Not Work

Adolescent crime prevention programs that have been rigorously evaluated and that clearly do *not* worked are strewn across the landscape. Even prevention programs that are popular may

actually harm the adolescents they are trying to help. There are 45 programs for at-risk children and adolescents listed on the US National Institute of Justice Web site that have been evaluated and found *not* to be effective (Office of Justice Programs 2015). The following are the examples of the programs:

- Taking Charge of Your Life (TCYL) is a school-based universal substance abuse prevention program that targets middle school youths. However, outcome evaluations found that the program had negative effects on students who participated in it. Substance abuse prevention programs can increase experimentation among the children and adolescents who participate (Cherry et al. 2002).
- Juvenile Boot Camps do more harm than good. Many studies of juvenile and adult boot camps have demonstrated that the rates of reoffending to be higher for boot camp participants than controls. The aggressive interactions between staff and youth in boot camps neither model pro-social behavior nor help develop empathy for others that at-risk youth need to learn. Meta-analyses show boot camp and discipline-oriented programs for adolescent offenders to be ineffective or increasing reoffending by as much as 8 %. In contrast, therapeutic services, such as restorative, skill building, and counseling average between 10 and 12 % *reduction* in reoffending for participating adolescents (Peters et al. 1997). The US Department of Juvenile Justice does not support and is prohibited from funding any boot camp style program.
- The Scared Straight program is an example of a prevention program that was harmful. The Scared Straight program was started in the USA in the 1970s. It is an intervention that takes at-risk and delinquent adolescents on prison tours where they are told about the harsh reality of prison life from the inmates. The intent was to make adolescents afraid of being sent to prison, which was though would prevent or dissuade them from future criminality. Scared Straight programs spring up all across the USA, almost overnight. It was an idea that policing authorities and parents found irresistible, an idea that seemed logical. Over 30 years passed before researchers conducted a comprehensive study of outcome data to determine effectiveness. When looking at whether or not the program reduced the likelihood of participating adolescents committing a crime after being exposed to the program, the research findings revealed that adolescents who participated in the program were almost twice as likely to offend or reoffend than those adolescent in a control group (Petrosino 2000; Petrosino et al. 2002), an unexpectedly dreadful outcome. The Scared Straight program is ineffective at best and counterproductive at worst. Yet, in 2016, a quick search on the Internet shows that number of Scared Straight programs were still in operation and they are advertised as being effective. On the same Web search, which provided cites about the Scared Straight programs, the US Justice Department cite publicly discourages the use of "Scared Straight" programs (OJJDP 2010, 2011). The reason for the continued operation of Scared Straight programs is probably best illustrated by a mother who said, "I feel like I'm at my wit's end," before she sent her two adolescents to a Scared Straight program. The programs are still popular with many parents and local authorities because parents turn to the police when they lose control of their children (Yu 2014).
- Drug Abuse Resistance Education (D.A.R.E.) programs have been one of the most commonly used prevention programs in the USA. The D.A.R.E. program was started in 1983 by Los Angeles Unified County School District and the Los Angeles Police Department. According to the official D.A.R.E. Webpage (http://www.dare.org/), D.A.R.E. programs are running in 75 % of school districts in the USA. Additionally, the Web site claims that it is operating in more than 52 countries around the world. D.A.R.E. is a school-based drug-use education prevention program where community law enforcement officers, rather than teachers, present the D.A.R.E. curricular in a classroom setting. D.A.R.E.

programs over the years have not been able to demonstrate the ability to effect adolescents' drug use. Evaluations found *no* differences in adolescent participant's use of cigarette, tobacco, marijuana, or inhalants in the last year or even in the past month. The program did not improve attitudes toward police, coping strategies, attachment and commitment to school, rebellious behavior, or self-esteem (Ennett et al. 1994; Harmon 1993; Ringwalt et al. 1991). More recently, an evaluation study of D.A.R.E. programs in Brazil reported similar findings of ineffectiveness (Shamblen et al. 2014).

Restorative Justice

One of the bright spots in juvenile justice is called restorative justice. It is a growing movement that is worldwide. Emerging in the late 1980s, restorative justice theory continues to be a positive alternative to the standard criminal justice response to an offender. Restorative justice emphasizes the effort to make whole the victim of criminal behavior (Bazemore and Maruna 2009). Advocates believe that this is best accomplished through a cooperative processes that include both victims and offenders (McAlinden 2011). This approach is more comparable to the traditional welfare orientation used in the past in youth justice than the punishment-based correction approach.

Advocates also believe that restorative justice offers "hope to communities both fearful of crime and looking for more socially constructive responses to crime" (Walgrave 2011, 2012). For many, this is an element missing from adolescent criminal justice. Thus, as the criminal justice system begins moving away from a perspective of punish and control, a restorative justice perspective could help reform and improve the juvenile justice system. For many victims and adolescent offenders, who live in a community where there are restorative justice programs, the criminal justice process often begins with a restorative justice program.

Although restorative justice theory and practice have a number of critics and skeptics among the punishment-based corrections sector, the major hurdle could be the public perception that restorative justice does not punish the juvenile offender (Choi et al. 2012).

For a more detailed description of restorative justice, see the chapter in this volume titled: *Restorative Justice and Adolescent Health*, by Stefaan Pleysier, Inge Vanfraechem, and Lode Walgrave.

Letters from Prison

There are countless egregious stories of children and adolescents with immeasurable disadvantaged who are taken into custody and whose life course is set on an appalling negative trajectory. One such story is described in an autobiography written by a man who spends his childhood in foster care, most of his adolescence in juvenile detention, and much of his adult life in prison. Titled *In the Belly of the Beast: Letters from Prison,* this collection of letters written by Jack Abbot and sent to Normal Mailer was published in 1981 (Abbot 1981). It provides insight into the mind of a foster child who became involved in the juvenile justice system at a young age. Abbot, a foster child, who spent most of his life in juvenile detention and adult prison, ended his life by committing suicide at the age of 37. He was serving a life sentence for committing murder. It is the story of grievous and cataclysmic failure of the foster care and juvenile justice systems. It is an account of seriously deficient systems, which failed this child, adolescent, and society at large.

Abbot's book is a chilling commentary on two of the major programs providing services to the most needy of adolescents in society. His book is a warning about how bad things can get if we continue to ignore adolescents in custody. Adolescents who are subjected to a system of care that is intrinsically harmful can result in long-term emotional and mental health disability.

To introduce college students to the theoretic paradigm of the *life course* construct, I ask the question as follows: "If you were given a six-week-old puppy and you mistreated and abused the puppy for the next 12 months, how

would you expect that environment of abuse to affect the dog's adult behavior?" The potential negative impact on the health and life-course trajectory of an adolescent taken into juvenile custody cannot be overstated.

Finally, despite one's view of adolescent criminal behavior, the juvenile justice system has a separate and independent effect on all aspects of the life of an adolescent taken into custody. In particular, this is true for adolescents with few resources and those with or developing a mental health disorder. In the USA, the number of adolescents diagnosed with depression, anxiety, attention disorders, and thought disorders is twice as high as that found in the general population—approximately 18–22 % (Grisso 2000). Moreover, this does not include adolescents in the system with the diagnoses of "conduct disorders and substance use disorders." When you include these disorders, adolescents between 65 and 70 % of minors arrested each year in the USA need mental health services. Over 15 % have a mental illness so severe: "It impairs his or her ability to function as a young person and grow into a responsible adult" (Hammond 2007).

These threats to adolescent health and mental health are only made worse by systems of justice that ignore the concentrated disadvantages among offending adolescents, and the unintended consequences inflicted on vulnerable children and adolescent who are caught offending.

References

Abbot, J. H. (1981). *In the belly of the beast: Letters from prison*. New York, NY: Random House.

Addie, S., Adams, B., & Firestine, K. (2011). *Trying juveniles as adults: An analysis of state transfer laws and reporting*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Aronson, J. D. (2009). Neuroscience and juvenile justice. *Akron Law Review, 42*, 917.

Attiah, K. (2014). Why won't the U.S. ratify the U.N.'s child rights treaty? *The Washington Post*. Retrieved from http://www.washingtonpost.com/blogs/post-partisan/wp/2014/11/21/why-wont-the-u-s-ratify-the-u-n-s-child-rights-treaty/

Bazemore, G., & Maruna, S. (2009). Restorative justice in the reentry context: Building new theory and expanding the evidence base. *Victims and Offenders, 4*(4), 375–384.

Birkett, M., Espelage, D. L., & Koenig, B. (2009). LGB and questioning students in schools: The moderating effects of homophobic bullying and school climate on negative outcomes. *Journal of Youth and Adolescence, 38*, 989–1000.

Bloom, B., Owen, B., Deschenes, E. P., & Rosenbaum, J. (2002). Moving toward justice for female juvenile offenders in the new millennium: Modeling gender-specific policies and programs. *Journal of Contemporary Criminal Justice, 18*(1), 37–56. doi:10.1177/1043986202018001004

Bonnie, R. J., & Scott, E. S. (2013). The teenage brain adolescent brain research and the law. *Current Directions in Psychological Science, 22*(2), 158–161.

Brame, R., Bushway, S. D., Paternoster, R., & Turner, M. G. (2014). Demographic patterns of cumulative arrest prevalence by ages 18 and 23. *Crime & Delinquency, 60*(3), 471–486.

Broman, C. L. (2012). Race differences in the receipt of mental health services among young adults. *Psychological Services, 9*(1), 38.

Burke, J. D., Mulvey, E. P., Schubert, C. A., & Garbin, S. R. (2014). The challenge and opportunity of parental involvement in juvenile justice services. *Children and Youth Services Review, 39*, 39–47.

Caldwell, B. (2014). Globalization and juvenile life sentences: Creating meaningful opportunities for release for juvenile offenders. *Journal of the Institute of Justice and International Studies, 14*, 1–9.

Carson, E. A. (2015). *Prisoners in 2014*. Washington, DC: Bureau of Justice Statistics.

Cernkovich, S. A., Lanctôt, N., & Giordano, P. C. (2008). Predicting adolescent and adult antisocial behavior among adjudicated delinquent females. *Crime & Delinquency, 54*(1), 3–33. doi:10.1177/0011128706294395

Chaplo, S. D., Kerig, P. K., Bennett, D. C., & Modrowski, C. A. (2015). The roles of emotion dysregulation and dissociation in the association between sexual abuse and self-injury among juvenile justice-involved youth. *Journal of Trauma & Dissociation, 16*(3), 272–285. doi:10.1080/15299732.2015.989647

Cherry, A., & Dillon, M. E. (2014). *International handbook of adolescent pregnancy: Medical, psychosocial, and public health responses*. New York, NY: Springer. doi:10.1007/978-1-4899-8026-7

Cherry, A. L., Dillon, M. E., & Rugh, D. (Eds.). (2002). *Substance abuse: A global view*. Santa Barbara: Greenwood Publishing Group.

Child Trends DataBank. (2015). *Juvenile detention*. Retrieved from http://www.childtrends.org/?indicators=juvenile-detention

Children's Defense Fund. (2012). *Issue brief: Mental health screening in juvenile detention facilities*. Author. Retrieved from http://www.cdfohio.org/research-library/2012/mental-health-juvenile.pdf

Choi, J. J., Bazemore, G., & Gilbert, M. J. (2012). Review of research on victims' experiences in restorative justice: Implications for youth justice. *Children and Youth Services Review, 34*(1), 35–42.

Cohen, A. O., & Casey, B. J. (2014). Rewiring juvenile justice: the intersection of developmental neuroscience and legal policy. *Trends in cognitive sciences, 18*(2), 63–65.

Development Services Group, Inc., & United States of America. (2014). *LGBTQ youths in the juvenile justice system*. Retrieved from http://www.ojjdp.gov/mpg/litreviews/LGBTQYouthsintheJuvenileJusticeSystem.pdf

Dmitrieva, J., Monahan, K. C., Cauffman, E., & Steinberg, L. (2012). Arrested development: The effects of incarceration on the development of psychosocial maturity. *Development and Psychopathology, 24*(3), 1073–1090. doi:10.1017/S0954579412000545

Dünkel, F., & Pruin, I. (2012). Young adult offenders in juvenile and criminal justice systems in Europe. In F. Lösel, A. Bottoms, & D. P. Farrington (Eds.), *Young adult offenders: Lost in transition* (pp. 11–38). New York, NY: Routledge.

Elkington, K. S., Belmonte, K., Latack, J. A., Mellins, C. A., Wasserman, G. A., Donenberg, G. R., et al. (2015). An exploration of family and juvenile justice systems to reduce youth HIV/STI risk. *Journal of Research on Adolescence, 25*, 700–716. doi:10.1111/jora.12163

Ennett, S. T., Rosenbaum, D. P., Flewelling, R. L., Bieler, G. S., Ringwalt, C. L., & Bailey, S. L. (1994). Long-term evaluation of drug abuse resistance education. *Addictive Behaviors, 19*(2), 113–125.

Estrada, F., & Nilsson, A. (2012). Does it cost more to be a female offender? A life-course study of childhood circumstances, crime, drug abuse, and living conditions. *Feminist Criminology, 7*(3), 196–219. doi:10.1177/1557085111429783

Fagan, A., & Western, J. (2005). Escalation and deceleration of offending behaviours from adolescence to early adulthood. *Australian and New Zealand Journal of Criminology, 38*(1), 59–76.

Farrell, J. (2009). All the right moves? Police 'move-on' powers in Victoria. *Alternative Law Journal, 34*(1), 21–26.

Farrington, D. P. (1986). Age and crime. *Crime and Justice, 7*, 189–250.

Federal Bureau of Investigation. (2014). *Expanded homicide data. Crime in the United States.* Retrieved from https://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2014/crime-in-the-u.s.-2014/offenses-known-to-law-enforcement/expanded-homicide/expanded-homicide/expanded-homicide.pdf

Ferreiro, F., Seoane, G., & Senra, C. (2012). Gender-related risk and protective factors for depressive symptoms and disordered eating in adolescence: A 4-year longitudinal study. *Journal of Youth and Adolescence, 41*(5), 607–622.

Finkelhor, D., Shattuck, A., Turner, H. A., & Hamby, S. L. (2014). The lifetime prevalence of child sexual abuse and sexual assault assessed in late adolescence. *Journal of Adolescent Health, 55*(3), 329–333.

Foy, D. W., Ritchie, I. K., & Conway, A. H. (2012). Trauma exposure, posttraumatic stress, and comorbidities in female adolescent offenders: Findings and implications from recent studies. *European Journal of Psychotraumatology, 3*.

Fredrickson, B. L., & Roberts, T. A. (1997). Objectification theory. *Psychology of Women Quarterly*, *21*(2), 173–206. doi:10.1111/j.1471-6402.1997.tb00108.x. Retrieved from https://www.researchgate.net/publication/258181826_Objectification_Theory_Toward_Understanding_Women's_Lived_Experiences_and_Mental_Health_Risks

Garbarino, J. (2009). Why are adolescents violent? *Ciência & Saúde Coletiva, 14*(2), 533–538.

Garland, A. F., Lau, A. S., Yeh, M., McCabe, K. M., Hough, R. L., & Landsverk, J. A. (2005). Racial and ethnic differences in utilization of mental health services among high-risk youths. *American Journal of Psychiatry, 162*(7), 1336–1343. Retrieved from 10.1176/appi.ajp.162.7.1336

Garnette, L., Irvine, A., Reyes, C., & Wilber, S. (2011). Lesbian, gay, bisexual, and transgender (LGBT) youth and the juvenile justice system. *Juvenile Justice: Advancing Research, Policy, and Practice*, 156–173.

Garofalo, R., Deleon, J., Osmer, E., Doll, M., & Harper, G. W. (2006). Overlooked, misunderstood and at-risk: Exploring the lives and HIV risk of ethnic minority male-to-female transgender youth. *Journal of Adolescent Health, 38*, 230–236.

Gogtay, N., Giedd, J. N., Lusk, L., Hayashi, K. M., Greenstein, D., Vaituzis, A. C., …, Rapoport, J. L. (2004). Dynamic mapping of human cortical development during childhood through early adulthood. *Proceedings of the National Academy of Sciences of the United States of America*, *101*(21), 8174–8179.

Goldson, B., & Muncie, J. (2012). Towards a global 'child friendly' juvenile justice?. *International Journal of Law, Crime and Justice, 40*(1), 47–64.

Goldner, J., Peters, T. L., Richards, M. H., & Pearce, S. (2011). Exposure to community violence and protective and risky contexts among low income urban African American adolescents: A prospective study. *Journal of Youth and Adolescence, 40*(2), 174–186.

Graham v. Florida, U.S. 560 (2010).

Greely, H. T. (2015). Law and the revolution in neuroscience: An early look at the field. *Akron Law Review*, *42*(3), 2. Retrieved from http://ideaexchange.uakron.edu/akronlawreview/vol42/iss3/2

Griffin, P., Torbet, P., & Szymanski, L. (1998). *Trying juveniles as adults in criminal court: An analysis of state transfer provisions.* Washington, DC: US Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Grisso, T. (2000) Law and psychiatry: The changing face of juvenile justice. *Psychiatric Services, 51*(4): 51–54. Retrieved from 10.1176/appi.ps.51.4.425

Hammond, S. (2007). Mental health needs of juvenile offenders. In *National Conference of State Legislatures*. Retrieved from http://www.ncsl.org/print/cj/mentaljjneeds.pdf

Harmon, M. A. (1993). Reducing the risk of drug involvement among early adolescents an evaluation of drug abuse resistance education (DARE). *Evaluation Review, 17*(2), 221–239.

Hayes, L. M. (2009). *Juvenile suicide in confinement: A national survey*. Collingdale, PA: DIANE Publishing.

Himmelstein, K. E., & Brückner, H. (2011). Criminal-justice and school sanctions against nonheterosexual youth: A national longitudinal study. *Pediatrics, 127*(1), 49–57.

Hirschi, T., & Gottfredson, M. (1983). Age and the explanation of crime. *American Journal of Sociology, 89*, 552–584.

Hockenberry, S. (2014). *Juveniles in residential placement, 2011*. Washington, DC: U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention.

Holsinger, K., & Jessica, P., Hodge, J. P. (2016). The experiences of lesbian, gay, bisexual, and transgender girls in juvenile justice systems. *Feminist Criminology, 11*(1) 23–47. doi:10.1177/1557085114557071

Hunt, J., & Moodie-Mills, A. C. (2012). The unfair criminalization of gay and transgender youth: An overview of the experiences of LGBT youth in the juvenile justice system. *Center for American Progress*.

Jackson v. Hobbs, U.S. (2012).

Jacobs, F. H., Miranda-Julian, C., & Kaplan, R. (2011). Parents, families, and the juvenile justice system. *Juvenile Justice: Advancing Research, Policy, and Practice*, 197–222. doi:10.1002/9781118093375.ch10

Janssen, H. J., Deković, M., & Bruinsma, G. J. (2014). Parenting and time adolescents spend in criminogenic settings: a between-and within-person analysis. *British Journal of Criminology, 54*, 551–567. doi:10.1093/bjc/azu032

Kann, L., Kinchen, S., Shanklin, S. L., Flint, K. H., Kawkins, J., Harris, W. A., … Whittle, L. (2014). Youth risk behavior surveillance—United States, 2013. *Morbidity and Mortality Weekly Report (MMWR) Surveillance Summaries, 63*(Suppl 4), 1–168.

Kerr, D. C., DeGarmo, D. S., Leve, L. D., & Chamberlain, P. (2014). Juvenile justice girls' depressive symptoms and suicidal ideation 9 years after multidimensional treatment foster care. *Journal of Consulting and Clinical Psychology, 82*(4), 684–693. Retrieved from 10.1037/a0036521

Krivo, L. J., & Peterson, R. D. (1996). Extremely disadvantaged neighborhoods and urban crime. *Social Forces, 75*(2), 619–648.

Krivo, L. J., Peterson, R. D., Danielle, P., & Kuhl, D. P. (2009). Segregation, racial structure, and neighborhood violent crime. *American Journal of Sociology, 114*, 1765–1802.

Lacey, C. (2013). *Racial disparities and the juvenile justice system: A legacy of trauma.* Los Angeles, CA, and Durham, NC: National Center for Child Traumatic Stress.

Lerner, R. M., Phelps, E., Alberts, A., Forman, Y., & Christiansen, E. D. (2007). The many faces of urban girls: Features of positive development in early adolescence. *Urban Girls Revisited: Building Strengths, 2*, 19–53.

Lundy, L. (2014). United Nations convention on the rights of the child and child well-being. In *Handbook of child well-being* (pp. 2439–2462). Netherlands: Springer

McAlinden, A. M. (2011). 'Transforming justice': Challenges for restorative justice in an era of punishment-based corrections. *Contemporary Justice Review, 14*(4), 383–406.

McNulty, T. L. (2001). Assessing the race-violence relationship at the macro level: The assumption of racial invariance and the problem of restricted distributions. *Criminology, 39*, 467–490.

Miller v. Alabama, U.S. 567 (2012).

Moffitt, T. (1993). Adolescence-limited and life-course-persistent antisocial behavior: A developmental taxonomy. *Psychological Review, 100*, 674–701.

Moreno, J. A. (2009). The future of neuroimaged lie detection and the law. *Akron Law Review*, *42*(3), 717, 738.

Mullis, R. L., Cornille, T. A., Mullis, A. K., & Huber, J. (2004). Female juvenile offending: A review of characteristics and contexts. *Journal of Child and Family Studies, 13*(2), 205–218. doi:10.1023/B:JCFS.0000015708.71295.2a

Muncie, J. (2005). The globalization of crime control—the case of youth and juvenile justice Neo-liberalism, policy convergence and international conventions. *Theoretical Criminology, 9*(1), 35–64.

National Center for Juvenile Justice. (2011). *Easy access to the census of juveniles in residential placement 1997–2010*, (online tool). Retrieved from http://www.ojjdp.gov/ojstatbb/ezacjrp/asp/selection.asp

National Gang Center. (2010). *Best practices to address community gang problems: OJJDP's comprehensive gang model*. Washington, DC: U.S. Department of Justice.

Office of Justice Programs. (2015). *Juveniles*. Retrieved from http://www.crimesolutions.gov/TopicDetails.aspx?ID=5

OJJDP. (2010). *Statistical briefing book.* Office of Juvenile Justice and Delinquency Prevention, Washington, DC. Retrieved from http://www.ojjdp.gov/ojstatbb/offenders/qa03401.asp?qaDate=2008

OJJDP. (2011). *Justice Department discourages the use of "Scared Straight" Programs*. Washington DC: OJJDP News @ A Glance, Office of Juvenile Justice and Delinquency Prevention. Retrieved from https://www.ncjrs.gov/html/ojjdp/news_at_glance/234084/topstory.html

Partridge, B. C. (2013). The decisional capacity of the adolescent: An introduction to a critical reconsideration of the doctrine of the mature minor. *Journal of Medicine and Philosophy, 38*(3), 249–255.

Patterson, G. R., Forgatch, M. S., Yoerger, K. L., & Stoolmiller, M. (1998). Variables that initiate and maintain an early-onset trajectory for juvenile offending. *Development and Psychopathology, 10*(3), 531–547. doi:10.1017/S0954579498001734

Peters, M., Thomas, D., & Zamberlan, C. (1997). *Boot camps for juvenile offenders program summary*. Washington, DC: Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice.

Peterson, R. D. (2012). The central place of race in crime and justice—The American Society of Criminology 2011 Sutherland Address. *Criminology, 50*, 303–328.

Petrosino, A. (2000). How can we respond effectively to juvenile crime? *Pediatrics, 105*, 635–637.

Petrosino, A., Turpin-Petrosino, C., & Buehler, J. (2002). "Scared Straight" and other juvenile awareness programs for preventing juvenile delinquency. *The Cochrane Library*. Retrieved from https://www.ncjrs.gov/html/ojjdp/news_at_glance/234084/topstory.html

Pfeifer, J. H., & Allen, N. B. (2012). Arrested development? Reconsidering dual-systems models of brain function in adolescence and disorders. *Trends in Cognitive Sciences, 16*(6), 322–329.

Richards, K. (2011). What makes juvenile offenders different from adult offenders? *Trends and Issues in Crime and Criminal Justice No: 409*, 1–8. Retrieved from http://www.aic.gov.au/publications/current%20series/tandi/401-420/tandi409.html

Ringwalt, C., Ennett, S. T., & Holt, K. D. (1991). An outcome evaluation of Project DARE (drug abuse resistance education). *Health Education Research, 6*(3), 327–337.

Roper v. Simmons, 543 U.S. 551 (2005).

Roth, J. L., & Brooks-Gunn, J. (2003). What exactly is a youth development program? Answers from research and practice. *Applied Developmental Science, 7*, 94–111.

Salomonsen-Sautel, S., Van Leeuwen, J. M., Gilroy, C., Boyle, S., Malberg, D., & Hopfer, C. (2008). Correlates of substance use among homeless youths in eight cities. *American Journal of Addiction, 17*, 224–234.

Scott, E. S., & Steinberg, L. (2008). Adolescent development and the regulation of youth crime. *The Future of Children, 18*(2), 15–33.

Sessions, W. K. (2010). *Demographic differences in federal sentencing practices: An update of the Booker Report's Multivariate Regression Analysis*. United States Sentencing Commission. Retrieved from http://www.ussc.gov/Research/ResearchPublications/2010/20100311MultivariateRegressionAnalysisReport.pdf

Shamblen, S. R., Courser, M. W., Abadi, M. H., Johnson, K. W., Young, L., & Browne, T. J. (2014). An international evaluation of DARE in São Paulo, Brazil. *Drugs: Education, Prevention and Policy, 21*(2), 110–119. doi:10.3109/09687637.2013.779640

Sherman, L. W., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., & Bushway, S. (1998). *Preventing crime: What works, what doesn't, what's promising: A report to the United States Congress*. Washington, DC: US Department of Justice, Office of Justice Programs. Retrieved from https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=165366

Sickmund, M., Sladky, T. J., Kang, W., & Puzzanchera, C. (2015). *Easy access to the census of juveniles in residential placement*. Retrieved from http://www.ojjdp.gov/ojstatbb/ezacjrp

Spear, L. P., & Varlinskaya, E. I. (2010). Sensitivity to ethanol and other hedonic stimuli in an animal model of adolescence: implications for prevention science? *Developmental Psychobiology, 52*, 236–243.

Stanton-Salazar, R. (1997). A social capital framework for understanding the socialization of racial minority children and youths. *Harvard Educational Review, 67*(1), 1–41. doi:10.17763/haer.67.1.140676g74018u73k

Steinberg, L. (2013). The influence of neuroscience on US Supreme Court decisions about adolescents' criminal culpability. *Nature Reviews Neuroscience, 14*(7), 513–518.

Sudbury, J. (2014). *Global lockdown: Race, gender, and the prison-industrial complex*. New York, NY: Routledge.

Thayer, R. E., Crotwell, S. M., Callahan, T. J., Hutchison, K. E., & Bryan, A. D. (2012). Nucleus accumbens volume is associated with frequency of alcohol use among juvenile justice-involved adolescents. *Brain Sciences, 2*(4), 605–618.

Tickell, S., & Akester, K. (2004). *Restorative justice: The way ahead*. London: Justice.

UN News Center. (2015). *UN lauds Somalia as country ratifies landmark children's rights treaty*. Retrieved from http://www.un.org/apps/news/story.asp?NewsID=49845#.VYWLFVVVikr

UNICEF. (1989). Convention on the rights of the child. Author.

UNODC. (2015). *Thirteenth United Nations Congress on Crime Prevention and Criminal Justice*. Vienna: United Nations Office on Drugs and Crime. Retrieved from http://www.unodc.org/documents/congress//Documentation/A-CONF.222-4/ACONF222_4_e_V1500369.pdf

Vagi, K. J., Rothman, E. F., Latzman, N. E., Tharp, A. T., Hall, D. M., & Breiding, M. J. (2013). Beyond correlates: A review of risk and protective factors for adolescent dating violence perpetration. *Journal of Youth and Adolescence, 42*(4), 633–649.

Van der Put, C., van Vugt, E. S., Stams, G. J. J., & Hendriks, J. (2014). Psychosocial and developmental characteristics of female adolescents who have committed sexual offenses. *Sexual Abuse: A Journal of Research and Treatment, 26*(4), 330–342.

Vries, S. L., Hoeve, M., Assink, M., Stams, G. J. J., & Asscher, J. J. (2015). Practitioner review: Effective ingredients of prevention programs for youth at risk of persistent juvenile delinquency—Recommendations for clinical practice. *Journal of Child Psychology and Psychiatry, 56*(2), 108–121. doi:10.1111/jcpp.12320

Walgrave, L. (2011). Investigating the potentials of restorative justice practice. *Washington University Journal of Law & Policy, 36*, 91–139.

Walgrave, L. (Ed.). (2012). *Repositioning restorative justice*. New York, NY: Routledge.

Walls, N. E., Laser, J., Nickels, S. J., & Wisneski, H. (2010). Correlates of cutting behavior among sexual minority youths and young adults. *Social Work Research, 34*, 213–226.

Winokur, K. P., Smith, A., Bontrager, S. R., & Blankenship, J. L. (2008). Juvenile recidivism and length of stay. *Journal of Criminal Justice, 36*(2), 126–137.

Wright, K. A., Kim, B., Chassin, L., Losoya, S. H., & Piquero, A. R. (2014). Ecological context, concentrated disadvantage, and youth reoffending: Identifying the social mechanisms in a sample of serious adolescent offenders. *Journal of Youth and Adolescence, 43*(10), 1781–1799.

Yu, E. (2014). At 'Wit's End': Scared Straight programs remain popular among parents despite warnings. *Juvenile Justice Information Exchange*, May 9. Retrieved from http://jjie.org/at-wits-end-scared-straight-programs-remain-popular-among-parents-despite-warnings/

Legalizing Marijuana and Its Effect on Adolescent Behavior and Health in the USA: Risk and Opportunity

13

Andrew L. Cherry and Mary E. Dillon

Marijuana and Adolescent Health: The US Experiment

There is no adolescent malady that does more damage or is more preventable than adolescent substance misuse. If we are unable to reduce the burden of substance abuse, it will be virtually impossible to make progress toward improving adolescent health in any meaningful way. The apprehension over legalizing marijuana for adult use in the USA is the concern, even fear, that legalizing marijuana will increase the *risk* of adolescent use, abuse, and dependence.

In 1937, Marijuana possession became illegal in the USA. Nevertheless, the use of marijuana was not eradicated. During the early 1950s, marijuana was favored by jazz musicians and beatniks. In the 1960s and 1970s, Marijuana became the fundamental expression of rebellion for the "hippie counterculture." In 1996, California legalized Medical Marijuana. In 2014, Colorado legalized recreational marijuana. Marijuana is only the second *drug* to be legalized for unsupervised adult use in US history, following alcohol, which became legal after the ratification of the Twenty-first Amendment in 1933. Unfortunately, since then a great deal of misinformation about marijuana has been employed to shape public health policy, criminal law, and culture. The intent of the law was to prevent marijuana from harming adolescents. Unfortunately, disproportionate harm has been born by adolescents because of the law. The question addressed in this chapter is: How will decriminalizing the use of marijuana impact adolescent use, dependence, health, and life course in the USA?

There is no argument that in the USA, there has been a major shift in public opinion about legalizing marijuana; this is evidenced by legalization continuing to spread from state to state across the USA. Basically, public opinion about the danger marijuana poses to health and society has changed. The vast majority of people today believe marijuana is less harmful than alcohol. The numbers are reflective of a major shift in the public view of marijuana. The first time Gallup pollsters asked people in the USA if marijuana should be legal, 84 % answered "no." Overtime, however, attitudes began to change and approval of legalizing marijuana went from a low of 12 % in 1969 to a high of 58 % in 2013 (see Fig. 13.1).

This change in sentiment, however, has not lessened the concern about the risk of increased adolescent use. No issue is more hotly debated and contentious. Proponents and opponents of legalization typically base their arguments on health consequences and sequelae of adult drug

A.L. Cherry (✉)
Medicaid Endowed Professor of Mental Health Emeritus, School of Social Work, University of Oklahoma, Tulsa, OK, USA
e-mail: alcherry11@cox.net

M.E. Dillon
School of Social Work, University of Central Florida, Orlando, FL, USA
e-mail: mdillon10@cox.net

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_13

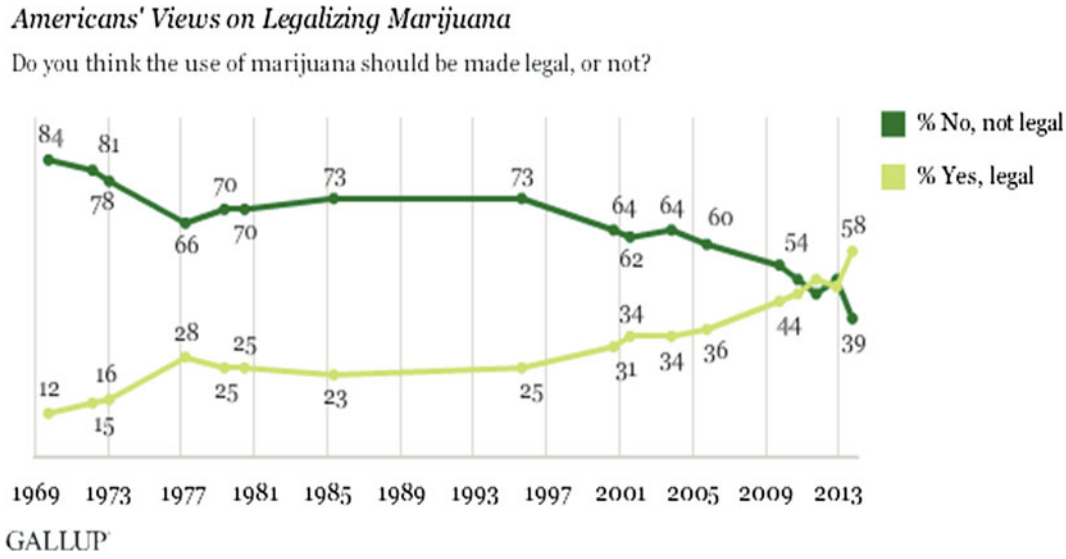


Fig. 13.1 American's views over time on legalizing marijuana. *Source* Swift (2013). http://www.gallup.com/poll/165539/first-time-americans-favor-legalizing-marijuana.aspx

abuse and addiction. The truth is no one can predict the outcome. Older demographic and prevalence research is not very useful because it was gathered in a different legal context. Under those circumstances, the norms around marijuana use were highly influenced by the legal and social consequences of use. How people will use marijuana in their lives where it is available and legal is still taking shape. For opponents, this uncertainty is an argument against legalization. Opponents predict marijuana abuse will increase. Moreover, they predict marijuana will be more available to children and adolescent, which will result in more adolescent marijuana and drug abuse.

While both sides are opposed to adolescent use of marijuana, they differ on how legalization will affect adolescent access. "Opponents of legalizing medical and recreational marijuana for adults predict that legal marijuana will be diverted to adolescents, which in turn will lead to increased adolescent marijuana use and subsequent psychosocial and health problems" (Joffe and Yancy 2004). Proponents of legalization argue that adolescents currently have unfettered access to illegal marijuana, and legalization and regulation will provide more controls. Moreover, there is undisputable evidence that arresting a young person for position of marijuana has a negative effect on the adolescent in the present and throughout their lives (Svrakic et al. 2011). Both positions on legalization are logical, but neither can be used to predict the effect that legal marijuana will have on adolescent behavior and health.

What can be used to help predict the effect of legal marijuana is the experiences of 23 states (out of the 50 in 2015) in the USA that have legalized marijuana. To that end, in this chapter, we will emphasize research and studies conducted within states (in the USA) that have legalized marijuana for medical use, or for medical and recreational use. Longitudinal studies and population comparisons will be used to examine differences in adolescent marijuana use and abuse before and after legalization. The areas covered are as follows: marijuana in context in the USA; the cost of criminalization; adolescent ease of access; risk factors for adolescent marijuana use; the self-medication hypothesis; concurrent use of alcohol, marijuana, and tobacco; gender ethnic and racial differences in marijuana use; and trajectory—effects of marijuana on the adolescent life course.

Each of these sections will then be used to inform a respond to the question: "How will decriminalizing marijuana impact adolescent use, abuse, health, and life course in the USA?"

Marijuana and Its Context in the USA

Marijuana has been well known in the USA since colonial times. George Washington grew it on his plantation. Based on his agricultural logs, Washington seemed to be growing marijuana for its medicinal properties. He recorded cutting out male plants before they fully flowered. The reason for cutting out male plants is to increase the level for tetrahydrocannabinol (THC), the active medical ingredient. Before the Civil War, marijuana was widely used for fiber and rope and followed behind cotton as a cash crop for export. Farming marijuana, however, has been against the law in the USA since 1937, when it was banned by congress under the Marijuana Tax Act of 1937, which imposed exorbitant taxes on marijuana production and use. There was opposition to the law; farmers and physicians opposed the law that basically outlawed what the American Medical Association, at a congressional hearing, described as a benign drug that had been prescribed by doctors for centuries. Marijuana oil and female flowers were widely used in medicines, elixirs, and patent medicines in the USA and around the world before 1937. A movie called "Reefer Madness" (1936) became the "poster child" for perceived dangers of marijuana. It showed teenagers driven to crime and murder after smoking a "reefer." Subsequently, the Controlled Substances Act of 1970 classifies marijuana as a Schedule I drug (in the class of drugs with heroin), because it was alleged to have a high potential for abuse and "has no acceptable medical use."

Marijuana, although illegal in the USA, has been available and easily obtained since the 1970s. Over several decades, marijuana has been the third most popular recreational drug in the USA, following behind alcohol and tobacco. In 2014, an estimated 120,460,000 (38 %) of people over the age of 12 had smoked marijuana in the USA. Some 25 million used marijuana in the past year before the survey. At the time of the survey, over 14 million people were estimated to be using marijuana regularly—in spite of the laws against its use. Some 7 % of people in the USA over the age of 12 had used marijuana in the past month, and 10–15 % of adults are long-term users. The numbers that alarm opponents of legalizing marijuana show that among 8th graders, 7 % used marijuana in the past month and 22.7 % of 12th graders used marijuana in the past month (Johnston et al. 2011).

Decriminalizing Marijuana

Theoretically, medical marijuana is being legalized so that patients may benefit from its therapeutic properties. Medical marijuana is prescribed to help people cope with chronic pain, loss of appetite accompanying serious illness, and other medical conditions. Of course, commerce opportunities related to legal marijuana in an already existing illegal market, not to mention it would be a new source of tax income for State and local governments, has not been lost on anyone. To be fair to business entrepreneurs and politicians, most people in the USA are tired of the legal harangue over marijuana. The laws and punishment are rightly viewed as more harmful than the drug. Almost everyone sees the lunacy of making criminals of people for the possession of marijuana.

The legalization of medical marijuana began in 1996 when California voters passed, what was known as Proposition 215, by 56 %. Known as the Compassionate Use Act, like most medical marijuana laws since, the California's law allows patients with a recommendation from a physician and their primary caretaker to possess and cultivate marijuana to treat medical disorders such as AIDS, cancer, migraines, muscular spasticity, and other medical disorders. In states where medical marijuana is available, physicians who recommend marijuana are not punished and they and their patients are not breaking the state law—although they are breaking the federal law. The US Attorney General, however, stated the Justice Department will not prosecute a person

for possession of marijuana if a state has decriminalized it.

In 2015, medical marijuana was legal in 23 states and recreational marijuana was legal in four of these states. Again, the essential question for opponents of legal marijuana is: How much will it harm health and increase adolescent alcohol and other drug abuse? Keeping in mind that after several years of declining use among adolescents, some studies suggest marijuana use could be slowly increasing. Opponents point to these studies and think it is reasonable to expect marijuana use to continue to increase among adolescents if marijuana is legalized, and this will result in an increase in adolescent alcohol and other drug abuse and addiction.

These are legitimate concerns, which can be somewhat addressed by studying adolescent marijuana use behavior in pre- and post-legal marijuana states in the USA. As a result, a great deal of data has been collected about how legalization is affecting people living in these states, particularly adolescents.

Illegal for almost a hundred years in the USA, marijuana was considered to be a drug such as heroin and cocaine. Possession was illegal, and people convicted of possession were severely punished and imprisoned. This continues to be the case in states where marijuana has not been, at least, decriminalized.

Legalizing marijuana is a social and health experiment because no one can say how it is going to turn out. For one, legalization will radically change the policing and judicial system. It will also change the role of marijuana in the culture, although in what ways and how much are unclear. For many in the helping professions, the questions about legalization of marijuana are focused on health consequences. Opponents ask: Will legalization of marijuana increase the use and abuse of marijuana among adolescents because of increased availability? What kind of health problems will be created by increased regular and chronic use of marijuana by adolescents?

Based on the assumption that marijuana use is harmful to adolescents (Spetz 2014), opponents of legalizing marijuana predict that marijuana use and abuse will increase among adolescents when states legalize medical marijuana and particularly when states legalize recreational marijuana use by adults. Legalizing marijuana, opponents argue, is also sending the wrong message to children and adolescents about the danger of marijuana and other drug use.

Supporters of legal marijuana (who are also opposed to adolescent marijuana use) predict the current levels of adolescent use will change little. Some adolescents will not use marijuana because of the side effects. Others will not use marijuana because they do not like the way it makes them feel. Given the current environment, where adolescents have unfettered access to illegal marijuana, if adolescents want to try it, they do. The difference is that even a de facto decriminalization of marijuana would reduce the legal enforcement and criminal penalties that are used disproportionately against minority adolescents.

Cost of Criminal Enforcement

Given the numbers of adolescents who use illegal marijuana, and based on the fear that it will increase adolescent marijuana access, use, and subsequent health burden, a substantial number of opponents continue to support the criminalization of marijuana. They make the argument that illegal drug dealers are easier than tax evaders to catch and prosecute (Glaeser and Shleifer 2001). As such, supporters of legalizing marijuana point out that enforcement has been very costly both in economic and in human terms (Becker et al. 2006).

There is little argument that the number of arrests for possession of marijuana is staggering. The Federal Bureau of Investigation (FBI) collects data for its Uniform Crime Reporting (UCR) Program on people arrested, cited, or summoned for an offense. The UCR reports the number of "Arrest for Drug Abuse Violations" and provides the number of arrest for "Sale/Manufacturing" and "Possession." For a baseline reference, over the last 15 years, some 10 million people were arrested for marijuana violations. That is approximately one arrest in every 40 for a marijuana violation. Some 75 % of those arrested and charged with

marijuana possession were adolescents and young people in their 20s.

These drug convictions are largely responsible for the inordinate rates of incarceration in the USA, which is among the highest in the world. Of the approximate two million people in jails and prisons in the USA, over 500,000 are imprisoned for marijuana violations. Among those arrested for a drug violation in 2012, as reported by the FBI, 17.8 % of the arrests were for "Sale/Manufacturing" of an illegal drug. Of the remainder, some 82.2 % were arrested for possession of an illegal drug. Some 42 % of all drug arrests in 2012 in the USA were for marijuana possession (see Table 13.1).

Human costs are also unacceptably high. Often hidden, the costs are difficult to put a dollar amount on in terms of economic loss. The consequences of an arrest for marijuana possession can be severe and long lasting. Being arrested for simple possession of even a small amount, in addition to the criminal consequences and jail time, could affect one's eligibility for student financial aid, employment opportunities, child custody determinations, eligibility for public housing, immigration status, and so on. Likewise, a failed drug test and/or drug violations among people on probation and parole often times result in many of the individuals being sent back to prison.

In terms of financial costs associated with criminal enforcement, an estimated $41 billion yearly are expended to enforce US laws against illegal drugs. Legalizing marijuana would reduce state and federal expenditures in the USA approximately $9 billion a year. In addition to reducing the cost of enforcement, legalization would generate tax revenue. It is estimated that legalizing marijuana would result in approximately $18 billion in new revenue annually from taxes derived from the sale of legal marijuana (Miron and Waldock 2010). Yet, given costly expenditures of public resources to stop marijuana use and despite eradication of marijuana being a priority for law enforcement nationwide, these efforts have not succeeded in reducing marijuana availability or use in the USA.

Another serious failure of criminal enforcement of marijuana laws is that it tears at our moral fabric. Marijuana laws have been enforced

Table 13.1 Arrests for drug abuse violations by region

Drug abuse violations		USA	Northeast	Mid-west	South	West
Sale/manufacturing	Heroin or cocaine and their derivatives	6.1	11.5	3.7	5.7	4.4
	Marijuana	5.9	6.1	8.8	5.1	5.2
	Synthetic or manufactured drugs	1.9	1.5	1.4	3.2	0.6
	Other dangerous non-narcotic drugs	4.0	2.2	4.8	3.5	5.3
	Subtotal	17.8	21.2	18.8	17.4	15.5
Possession	Heroin or cocaine and their derivatives	16.5	17.2	9.8	13.6	24.0
	Marijuana	42.4	46.9	51.9	51.0	22.1
	Synthetic or manufactured drugs	4.5	3.1	5.0	6.1	2.9
	Other dangerous non-narcotic drugs	18.7	11.5	14.5	11.8	35.5
	Subtotal	82.2	78.8	81.2	82.6	84.5
Total a	(%)	100	100	100	100	100

[a]Because of rounding, the percentages may not add to 100.0

Retrieved from http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s./2012/crime-in-the-UnitedStates-2012/persons-arrested/persons-arrested

in a manner that demonstrates pernicious racial bias. A study of 10 million people arrested for a marijuana violation (an average of about 700,000 arrests per year); over 7.5 million of those arrested were African Americans. This is a rate that is 3.75 times higher for African Americans than for "white" people for a marijuana violation (Federal Bureau of Investigation and US Dept. of Justice 2013).

With decriminalization, a vacuum will be created where services provided by the justice system will no longer be appropriate or available. In turn, this will create a need to redeploy resources from enforcement to prevention, treatment, and health programming to fill this lack of adolescent health services.

Adolescent Marijuana Use in the USA

Since the 1970s, marijuana has been ubiquitous in USA society and culture. Always the drug of the outsider and the rebellious, in the US marijuana, has touched everything and everyone in some way, but none more profoundly than adolescents as a group. Consequently, over the years, researchers have tracked adolescent's interest in marijuana by measuring adolescent's perception of *risk associated with using marijuana.* In other words, what message does legalizing medical marijuana send to adolescents when the "high perception of riskiness" is associated with decreased marijuana use? Based on this mechanism, opponents suggest that the growing perception among adolescents, that marijuana is a safe drug, may be the result of legalizing medical marijuana. Opponents submit that medication is something that is viewed as good; labeling marijuana as medicine reduces their perception of marijuana use as risky.

Understanding the effect of adolescent's perception of the risk of marijuana use, from a mental health perspective, can be very useful. Conditions and situations that increase or decrease the use and abuse of any drug are important for understanding the dynamics underpinning adolescent marijuana use. Prevention efforts depend on this type of information.

The Monitoring the Future Study (MTFS) is conducted each year out of the University of Michigan. These in-school surveys (started in 1991) collect data from approximately 50,000 8th, 10th, and 12th grade students. Based on the findings from the 2013 MTFS report, marijuana use among adolescents was declining in the late 1990s, but it began to increase again after 2008. The percentages apparently have been increasing slightly year after year since then. The study also found that in 2013, 18.0 % of 10th graders used marijuana in the past month (in 2008, it was 13.8 %) and 22.7 % of 12th graders (in 2008 it was 19.4 %). Daily use among 12th graders also increased from a low of 5 % in 2008 to 6.9 % in 2013 (see Table 13.2). A question on the survey asked about access to marijuana. Among 12th graders who were surveyed, 81 % reported that marijuana was easy to obtain. Conversely, 8th graders reported that marijuana was not easily obtained. The MTFS found only 36 % of 8th graders reported that marijuana was easy to get. As opposed to the report of increased use, a reduction in access is encouraging to many in the fields of prevention and treatment of drug addiction (Johnston et al. 2011).

The MTFS findings, however, have been questioned. In another national survey, the Health Behavior in School-Aged Children (HBSC), the researchers (Brooks-Russell et al. 2014) reported a statistically significant decline in marijuana use among this age group. Where

Table 13.2 Tends in prevalence of marijuana/hashish among 8th graders, 10th graders, and 12th graders; 2014

Time period	Lifetime (%)	Past year (%)	Past month (%)	Daily (%)
8th graders	15.6	11.7	6.5	1
10th graders	33.7	27.3	16.6	3.4
12th graders	44.4	35.1	21.0	5.8

Source Johnson et al. (2015)

the MTFS report showed 10th graders had increased their use of marijuana from 13.8 % in 2008 to 18 % in 2013, the Brook-Russell HBSC study found a decline in use from 34.6 % in 1998 to a low of 22.6 % in 2010 using marijuana. Brook-Russell and colleagues also reported declines in tobacco and alcohol use.

These inconsistencies, one group of researchers reporting adolescent marijuana use has increased and another group reporting it has decreased, do not give one much confidence in either report. It is interesting to note that both groups found a decline in adolescent alcohol and tobacco use and about the same percentages of adolescents using marijuana.

One of the predictors of adolescent alcohol, tobacco, and marijuana use as adults is the level of use at a young age. Typically, if substance misuse among young teens decreases, then use rates in high school will decrease. Even a small decrease in substance use by younger children can foretell lower rates throughout the upper grades as their influence affects peer's use over time.

To get some idea about future drug use by adolescents, the HBSC is a good source for information on drug use among children in the 6th and 7th grades. In the HBSC report, drug use by 6th and 7th graders since 1998 shows a significant decline. The reported overall rate of tobacco use declined from 22.1 % in 1998 to 9.7 % in 2010. The overall "current alcohol use" declined from 26.0 % in 1998 to 12.4 % in 2010. They also found a decline in adolescents who positively answered the question "ever been drunk," down from 28.7 % in 1998 to 15.8 % in 2010. And, in terms of marijuana use, in the past year before the survey, there was a decline from 22.1 % in 1998 to 12.0 % in 2010. The declines, however, were not as dramatic for African Americans and Hispanics (Brooks-Russell et al. 2014).

In addition to reporting a significant decline in tobacco, alcohol, and marijuana use, when drug use is broken down by grade, the declines in alcohol, marijuana, and tobacco use were greater for 6th and 7th graders than older adolescents. These declines over the years suggest that as these 6th and 7th graders age into high school, marijuana use among older adolescent students should continue to drop. At minimum, given the findings from the HBSC study, there should be little increase among older adolescents and young people in the future.

Brooks-Russell et al. (2014) attribute these significant declines in alcohol, marijuana, and tobacco use among adolescents since 1998 to the national campaign to reduce nicotine addiction (tobacco use), principally among adolescents. The national campaign in the USA included a national antismoking advertising campaign, stopping cigarette advertising on television and radio, and increases in the tax on cigarettes, bans on smoking in public places, and a ban on many other smoking behaviors (Lantz et al. 2000). If the national campaign was indeed, preventing adolescents from becoming addicted to nicotine, this may, in part, explain why there was a leveling off in adolescent-perceived risk and disapproval of smoking tobacco among adolescents (Johnston et al. 2011). This leveling off trend in the adolescent's negative view of tobacco correlates with a reduction of resources and interest in preventing tobacco use among adolescents. Over the years, the campaign has lost much of its energy and momentum. As the campaign lost financial support, the message about perceived risk and disapproval of tobacco has become less effective with adolescents. If there is a relationship between the national campaign and a decreased drug use, we should expect other drug use to increase as the anti-smoking campaign becomes less effective. Arguably, if funds are again increased for prevention programs, the percentage of adolescents who disapprove of tobacco should again increase. Not to ignore the inherent difference, it also suggests that prevention campaigns could be used to reduce adolescent alcohol and marijuana use and abuse.

Adolescent Opinions About Legalization

Adolescent attitude toward marijuana legalization is another bit of information that will inform our understanding of potential adolescent use. Presumably, adolescents who support legalization would tend to use marijuana more than adolescents opposed to legalization. Palamar (2014) tested this assumption using responses to the question about legalizing marijuana from 11,594 students (collected in the years 2007–2011) as a part of the MTFS. Palamar found that a third of students thought marijuana should be totally legal and 28.5 % thought that marijuana should be considered as a minor criminal violation. More important for prevention programming, 48.0 % thought that if marijuana were legal it should only be legally sold to adults. Some 10.4 % did not approve of selling marijuana to anyone. When opponents were examined by the subgroups of gender, race, religion, conservatism versus liberal, urban versus rural students, and friends who approved of marijuana, the results were what would be expected. Males, African Americans, and urban students tended to support legalizing marijuana. Females, religious students, and students with friends who disapproved of legalizing marijuana were not inclined to support legalizing marijuana.

There was another interesting finding among the adolescents in this study. If the adolescents were recent or frequent users of marijuana, they tended to strongly support legalizing marijuana. In the group, who had never used marijuana, only 16.7 % supported legalization (Palamar 2014). This is interesting because similar associations have been identified among adults, when asked about their opinion on legalizing marijuana. Research shows that people with more familiarity and experience with marijuana tend to support legalization of marijuana.

Williams et al. (2011) reported that people who had used marijuana in the past largely supported legalization of marijuana, even if they no longer used it. People's opinion was also affected by the length of time that they had used marijuana. In this sample of adults, the longer a person had used marijuana the more likely they were to support legalization. Such findings seem to suggest that the more familiar a person is with marijuana, the more likely they are to support legalization. These findings may be a little surprising. The researchers report that "those who have used marijuana believe it to be a mild drug with little downside compared to alcohol and tobacco."

State Medical Marijuana Laws and Their Effect on Adolescent Marijuana Use

Both opponents and advocates of medical marijuana agree on the need for laws to prevent adolescents from using and abusing marijuana. Of course, the difference is that opponents think medical marijuana will lead to increased marijuana use and abuse among adolescents. This is an important issue, one which opponents feel, if true, would sway public opinion about the harm that could be done by legalizing medical marijuana. As a result, a number of studies completed since 2010 looked at states that legalized medical marijuana.

One of the early studies compared the first 16 states to legalize medical marijuana to marijuana use among adolescents in states that had not yet legalized marijuana. The data used in the analysis came from the National Survey on Drug Use and Health conducted annually from 2002 to 2008. It is a representative sample with state-level data on 23,000 12–17-year-old adolescents (Wall et al. 2011). The researchers were expecting higher usage and a drop in perception of risk among teenagers in states that had legalized medical marijuana. What they found only partially supported their hypothesis. In this study of adolescent marijuana use, the overall average of marijuana use for all years and all states was 7.5 %. When analyzed by groups of users and nonusers, there was an overall higher average for

adolescent marijuana use in the 16 states that had legalized medical marijuana (8.68 %). In the 34 states that had not legalized medical marijuana, the average was 6.94 %, a rather small difference of 1.7 % but does show a difference.

The problem with this study is that there were several states that did not have medical marijuana laws but had higher than the national average percentage of use (i.e., New Hampshire 9.50 % and Massachusetts 9.34 %) than states with medical marijuana laws. In addition, there were three states with medical marijuana laws that fell below the national average of 7.50 % (i.e., Arizona 7.35 %, New Jersey 6.43 %, and California 7.30 %). California was the first state to legalize medical marijuana in 1996.

Wall et al. (2011) concluded that based on percentages and averages there was higher adolescent marijuana use and lower perceptions of risk in states that had legalized medical marijuana. Because percentages do not account for other influences, Wall and colleagues offered three possible explanations for their findings of increased use: (1) Passing medical marijuana laws may have indeed caused the increased use; (2) states with higher percentages of use may be more likely to enact medical marijuana laws; and (3) there are other influences that could be effecting adolescent marijuana use in addition to medical marijuana laws, such as social norms, and state differences.

Wall's study was a good start. Moreover, it motivated other studies. One in particular addressed Wall's third explanation and asked: What would the percentages of marijuana use look like if the analysis controlled for state characteristics and measurement error? The differences found by Wall and colleagues were small, making it possible that measurement error could explain differences this small.

To test the question, Harper and his team of researchers (2012) moved the analysis of the data study beyond simple descriptive information by controlling for individual state characteristics that could distort the difference in percentages between states with medical marijuana laws and states with no medical marijuana laws. They used a more recent version of the same national survey: the 2002–2009 National Survey on Drug Use and Health for their state-level estimates of marijuana use (SAMHSA 2014).

Accounting for differences in state characteristics and measurement error in this study did have an important impact on estimates of the influence of state medical marijuana on adolescent marijuana use. In fact, when Harper and his team did a multivariate analysis of the data used by Wall and colleagues, they found a small decrease in the past-month use of marijuana among adolescents by 0.53 % in states that had legalized medical marijuana. Moreover, they found no change in "perceived riskiness of monthly use." They concluded that when state characteristics were controlled for with a multivariate analysis, there was very little evidence that states with medical marijuana laws experienced an increase in adolescent use. They reported no evidence of increased use among adolescents in states with medical marijuana laws or for any other age group in those states.

In another study, Lynne-Landsman (2013) used a different database, the Youth Risk Behavior Survey to determine whether medical marijuana laws have caused an increase in marijuana use among adolescents in states that had recently passed medical marijuana laws (i.e., Montana, Rhode Island, Michigan, and Delaware). For these states, there is before and after data related to: (1) the passage of medical marijuana laws and (2) adolescent use in the years of 2003–2011.

Using these data and based on 40 pre- and post-planned comparisons across states, there was no significant evidence of medical marijuana laws influencing self-reported prevalence or frequency of marijuana use. Lynne-Landsman (2013) concluded from her analysis that medical marijuana laws "have not measurably affected adolescent marijuana use in the first few years after their enactment." Even though after medical marijuana laws are more fully implemented, longer-term results could be different than the experience to this point. These studies strongly suggest that it is unlikely adolescent marijuana use will increase in any meaningful way when medical marijuana laws are passed in a state.

Adolescent Marijuana Use and Ease of Access

Will legal medical marijuana increase adolescent access? This is another important question about a position all agree on. Legal marijuana should not be diverted to adolescents. To prevent the illegal use and specifically adolescent use of medical marijuana, states impose strict controls over growth and the sale of marijuana (Pudney 2010).

Friese and Grube (2013) sought to address the question about the impact on adolescent access. Using survey data from Montana, they examined county-level archival data, which included the number of residents who voted for legalized marijuana in Montana, and the number of medical marijuana cards issued in each county in the state. Paring these numbers with lifetime and 30-day marijuana use from 17,482 adolescents (13–19 years of age), Friese and Grube found that there was no difference in the adolescents' perception of ease of access in Montana. The conclusion was that perceived ease of access among adolescents is associated with an overall normative environment where the population is "more tolerant of marijuana use."

Arguably, one could observe that it would be difficult for medical marijuana laws to cause a major increase in Marijuana use among adolescents in the USA primarily, because marijuana is available to adolescents across the USA. Consequently, virtually all adolescents who want to try it or who use it are doing so. For adolescents, the laws that prohibit adolescent use do not change when medical marijuana becomes legal for adults. What does change is the decline of adult contact with criminals and a criminal environment where marijuana and other more harmful and addictive drugs are sold.

Even when legal for adults, a substantial percentage of adults and adolescents will not use marijuana because of the paradoxical effect, which can result in short-term anxiety and panic attacks. Other people simply do not like marijuana intoxication or do not think it is worth the trouble and effort. What is clear, people who do use the drug regularly report feeling less pain and despair. Patients using medical marijuana typically are trying to regulate their affect. They are attempting to improve their level of functioning. They are not using the marijuana to get "high and to party."

Risk Factor for Adolescent Marijuana Use

A public focus on the effects of legalizing marijuana on adolescent access and use is important; however, other conditions and risk factors that drive adolescent marijuana use and abuse are also important. Risk factors (that do not include legalization) have been identified consistently in the research (van den Bree and Pickworth 2005). They are as follows:

1. Low levels of pro-social activities;
2. Poor control of emotions, depression, and anxiety;
3. Limited inner resources to cope with psychological stress, poor self-concept, rebelliousness, and unconventionality;
4. Poor academic performance, low connectedness to school, and dropping out of school;
5. Lack of positive family structure and rules, family conflict, poor family bonds, and poor parental supervision;
6. Use of other drugs, drug-using friends and peers, delinquency, precociousness, and risk-taking behavior;
7. Low religiosity; and
8. Living in disadvantaged neighborhoods.

Peer and parental influences have been by far the better predictors of marijuana use and abuse. Even so, it is not quite that straight forward. Peer influence on adolescent intentions to use marijuana is a risk factor to the degree that an adolescent may be ambivalent about trying marijuana. Similar to many other situations, peers and parents have the most influence during periods of ambivalence. What's more, high adolescent ambivalence about the risk of using marijuana tends to minimize a positive view of marijuana by friends and peers. When

adolescents associate with friends and peers who have a positive view of marijuana, the norms and marijuana use by friends are the better predictors of attitude and intentions to use marijuana than legalization (Hohman et al. 2014).

One of the problems with the research on peer influence and marijuana initiation and use is that the research does not consistently find that friends and peers have a significant influence on marijuana initiation. Social network studies consistently find that friends and peers play a significant role in virtually all adolescent substance use but not marijuana. In the case of marijuana, the inconsistency has been confusing to researchers and not very helpful in planning prevention programs. If we keep in mind, however, that there are many types of friendships and different social networks that each person belongs to, and functions in, friendships that affect marijuana use probably play out in several different ways from other illegal drugs. Tucker et al. (2014) found two types of friendships that affect marijuana use. One type of friendship is a reciprocal relationship, characterized by closeness and trust. The other type of friendship that was found to be significant involved the dynamics of adopting friends' marijuana use as a way of increasing one's status.

Social Influence on Substance Use Behaviors

The *social ecological model* proposes a system where there are multiple levels of influence that shape human behavior (i.e., broader sociocultural factors, institutional context, and interpersonal interactions). Over the years, research has validated numerous social factors that have influenced adolescent substance use behavior, which included marijuana use. On the macrolevel, research suggests that the larger cultural views about substance use and the way in which the media portrays substance use influence the view and behavior of adolescents (Morgenstern et al. 2013). Public policies such as legal age for purchase and high taxation on cigarette and alcohol have an important role in adolescent behavior and perception of drugs and use of substances (Bader et al. 2011). Modeling the drug-using behavior of parents, sibling, friends, and peers tends to be a strong predictor of early drug use (Ennett et al. 2010). Norms and the behavior of members of the adolescent's primary social group regarding drug use is a very powerful influence on drug access, experimentation, and use and abuse (Eisenberg and Forster 2003). The school environment is one of those conditions that contribute to student substance abuse. Restrictive use policies and consequences are associated with lower adolescent substance use (Evans-Whipp et al. 2007).

Juvenile justice involvement is another environmental condition that is associated with increased adolescent drug use. Criminal involvement and substance use tend to be associated with gender, race, and income. Past research has been generally consistent in finding that past arrests for any offense were a strong predictor of recent drug use, particularly marijuana use. Furthermore, Quinn (2014) reports that compared to white youth in the juvenile justice system, African Americans were less likely to report any substance use, and Asian Americans and Hispanics were less likely to report alcohol or marijuana use. These numbers are a bit distorted because the probability that an adolescent will report illicit drug use decreased as their family income increased.

In prevention programming, knowing the strength of the influence of social environments, which affect adolescent drug use, can help estimate risk of early drug initiation and use. Social factors also have a major role in adolescent health behaviors (which include substance use) and other developmental health issues unique to adolescence (Christie and Viner 2005).

How decriminalizing marijuana, as a social message, will influence adolescent's perception and problematic use is still unknown? Given the research to date on the effect of legalizing medical marijuana in some states, legalization does not appear to have had much effect on adolescent's perception and use. One explanation for the lack of effect on adolescent marijuana use is that while access to marijuana may increase for

some adolescents because of legalization, adult use is typically among those with chronic medical problems. These are adults that do not inspire adolescent to emulate their marijuana use.

Interpersonal Influence on Marijuana Use Behaviors

One of the major links between personality and substance use is expectancy. Explained by the acquired preparedness model, frequency of marijuana use (for instance) is in part moderated by expectancies. In a study by Bolles and associates (2014), tension-reduction expectancies were shown to be involved in mediating the relation between impulsivity and marijuana use. Expectancies and impulsivity levels were reported to predict marijuana use. When expectancies were elevated or increased, impulsivity was strongly related to increased use of marijuana. Impulsive individuals are very likely to use substances when they have positive expectancies about them. The researchers concluded that impulsive individuals are at high risk of problematic use particularly when they have a positive expectation of marijuana or other drugs that will modify their impulsive behaviors.

The mechanism of tension-reduction expectancies is particularly strong in people who find that marijuana improves their mood. It has a positive effect on their physical and emotional sense of well-being. This would explain why impulsive people are at high risk of marijuana use. It also suggests that mental health disorders can drive marijuana use among people who find it improves their affect and mental health. Twin studies are used to help us answer these types of questions and to separate behaviors that are the result of genetics from behaviors that are shaped by the environment. In one such study of female twins, Kendler and Prescott (1998) found that, in general, genetic risk factors such as mental health disorders had a modest effect on the risk of twins ever using marijuana. These same genetic risk factors, however, are strongly associated with the heavy marijuana use and dependence among twins. The role of the family and social environment was interesting in that they increased the risk of twins ever using marijuana, but did not increase the risk of heavy use or dependence among twins. These findings suggest that adolescents with more access to marijuana are more likely to try it. These findings also suggest that access is not the cause of heavy use and dependence. Genetic factors such as mental health disorders were associated with heavy marijuana use and dependence among this group of twins.

The Self-Medication Hypothesis of Addiction and Adolescents

The *self-medication hypothesis* of substance abuse emerged from drug treatment clinicians, who observed that many people treated for an addiction became addicted because they discovered that specific drugs relieved or reduced their physical or emotional pain (Khantzian 1997, 2003). It is a logical and compelling argument in a society where a pill or some other forms of medication can fix just about anything that is wrong with a human. Yet, logic does not settle the controversy about addiction being the *cause or consequence* of drug use (the debate about which came first the physical/emotional pain or the addiction). Research has not satisfactorily answered the question either. While some studies that tested the *cause or consequence* question have found support for the self-medication hypothesis of addictive disorders, other studies have not, and some found evidence of both cause and consequence (Blume et al. 2000; Suh et al. 2008).

The link between anxiety, depression, co-occurring disorders, post-traumatic stress disorder (PTSD), human immunodeficiency virus (HIV), and substance use has been observed in a number of studies. The work by Weiss and associates (1992) found that most hospitalized drug abusers reported they self-medicate to manage depression and experienced an elevated mood when using marijuana or other drugs.

In a NIMH-funded qualitative study to evaluate the self-medicating hypothesis among dual-diagnosed homeless individuals, Henwood and

Padgett (2007) found that when self-medicating behavior is defined as *using drugs to cope with symptoms of mental disorders*, only 15 % of responses agreed that they self-medicated. In contrast, when self-medicating behavior was defined as *using substances to cope with painful emotions*, more than 50 % of the respondents agreed that they used drugs to self-medicate.

In terms of specific emotional pain such as depression, the effects of marijuana are mixed. In one study (Arendt et al. 2007), participants tended not to use marijuana as a means of self-medicating depression, but they did self-medicate with marijuana to help control aggression. A side effect on some that reduces aggression is significant and could be important. In other studies, there are some reported benefits of marijuana for self-medicating depression with marijuana, or that marijuana use did not lead to increased depression (Pedersen 2008). In the vast majority of the studies involving depression and marijuana, marijuana use was reported to be associated with depression *not* a cause of depression.

PTSD and Marijuana

As for other mental health disorders such as PTSD, research on the positive effect of self-medicating with marijuana is more conclusive. PTSD is one of the disorders that allow state residents to legally buy medical marijuana in states that have legalized medical marijuana. Prior research has consistently shown that people with more severe PTSD use marijuana more frequently than people with less severe PTSD symptoms (Bonn-Miller et al. 2014). In another study of people treated with Δ^9-THC (an orally absorbable compound), the treatment produces a "statistically significant improvement in global symptom severity, sleep quality, frequency of nightmares, and PTSD hyperarousal symptoms." Importantly, the treatment was found to be safe and well tolerated by patients with chronic PTSD (Roitman et al. 2014).

Similar findings have been reported among combat veterans. In a study of combat-exposed male veterans (who used marijuana at least once a week), who were compared on the magnitude of self-reported PTSD symptoms, the findings indicate that combat-exposed veterans, who use marijuana regularly, increased their use when their PTSD symptoms increased and their expectancy was that marijuana would relieve their PTSD symptoms (Earleywine and Bolles 2014). Adolescents report using alcohol and marijuana in much the same way, to reduce the symptoms of trauma and PTSD. Adolescents exposed to trauma are more likely to use alcohol and marijuana than peers and friends who were not traumatized (Allwood et al. 2014). The authors suggest that children and adolescents who are exposed to trauma could benefit from early health and mental health interventions, as a possible mediator in the development of PTSD and substance use disorders. Research findings from Allwood and associates also support the hypothesis that one of the symptoms of PTSD is marijuana use.

HIV/AIDS and Marijuana

Adolescents, young adults, and adults who become infected with HIV typically experience symptoms of anxiety, depression, pain, and other serious biopsychosocial problems. Marijuana is used as treatment to reduce the severity of the symptoms. As a treatment, research on marijuana and HIV/AIDS typically finds that around half of the people infected with HIV/AIDS use marijuana to help manage their symptoms. On further inspection, however, the use of marijuana to manage HIV/AIDS symptoms seems to vary by symptom. For instance, HIV/AIDS-infected individuals who reported severe *depression* are more likely to use only FDA-approved antidepressant medication than marijuana to treat their depression. Among those who do report using marijuana to help manage their depression, they also reported symptoms of pain and anxiety. People infected with HIV/AIDS who report severe *pain* are more likely to use only FDA-approved analgesic medication than they are to use only marijuana. They also were

significantly more likely to use only marijuana than other illegal drugs (Smith 2013). As a result, in order to provide an additional medical treatment for people infected with HIV/AIDS, this infection is one of the medical conditions that make and individual eligible for a Medical Marijuana Card (or some other type of certification) in states in the USA that have medical marijuana laws.

This certainly could be the reason that HIV/AIDS-infected adolescents use marijuana. Self-medicating with marijuana to deal with psychological distress has been observed for some time (Murphy et al. 2001). Essentially, this is referred to as the *affect regulation model*. A need to self-regulate one's affect is likely, a leading cause of adolescent marijuana use. The desire to maintain or elevate one's mood was the primary reason adolescents gave for frequent marijuana use. Shrier et al. (2014) found that negative affect was significantly higher before the adolescent-used marijuana compared to other times. Possibly more important, researchers found an increase in positive affect after marijuana use.

As the medical use of marijuana evolves, it will become clearer on how it will be used. Once the human ailments that are best treated with marijuana—and ailments not helped by using marijuana—are identified, most likely marijuana will be consciously integrated into a person's regiment of daily medication.

Adolescent Drug Use into Adulthood

There are countless reasons why adolescents should not have legal access to marijuana; one of them is concern over the consequences of marijuana use on the adolescent's life trajectory. Generally, drug use in adolescence has been a strong indicator of drug use as an adult (Guy et al. 1994). Thus, concern about chronic drug use in adolescence is warranted.

From a mental health perspective, however, the use of marijuana by an adolescent to manage their affect indicates a need for a full mental health assessment. Untreated mental health disorders in adolescents often result in mental health disorders in adulthood. It is no surprise that middle school students who have a history of solitary drug use may be at a higher risk to use drugs as young adults. What may be a bit surprising is that among sixth- to seventh-grade students who had ever drunk alcohol, 25 % reported a history of solitary drinking and 31 % reported solitary marijuana use. Compared to adolescents who were social-only users, solitary users had higher positive expectations of their drug than social-only users. Solitary users also reported more negative consequences (Tucker et al. 2014).

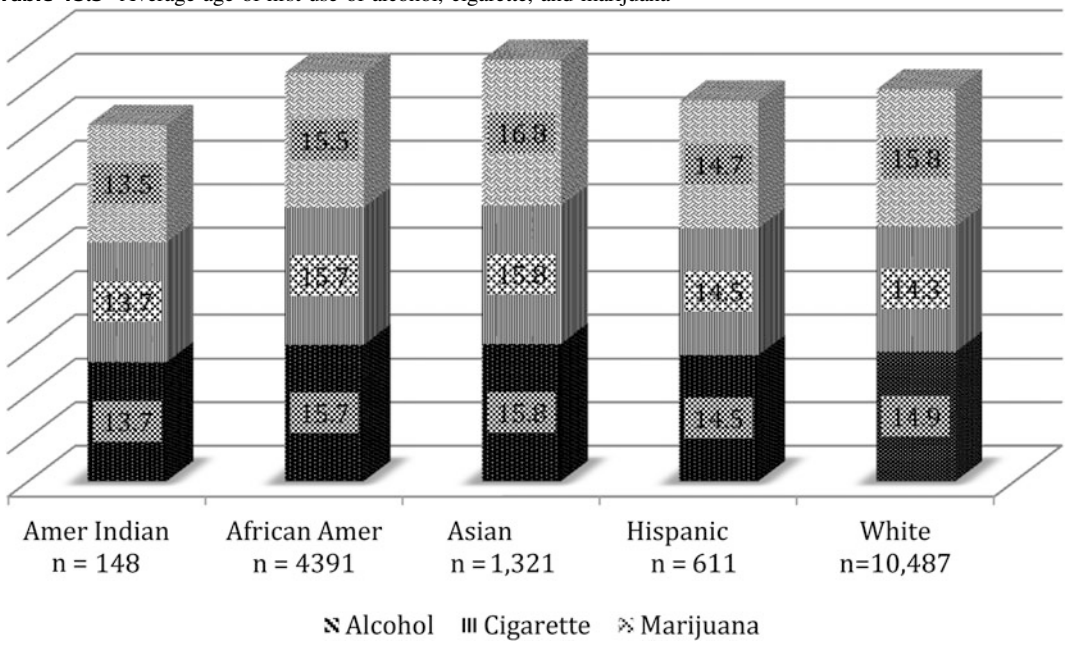
Early onset of drug involvement (including alcohol and tobacco) increases risk of long-term drug use, dependence, and related health problems (Cherry et al. 2002). Based on a 2013 study, Asian and African Americans had the latest onset of alcohol, cigarette, and marijuana use. American Indian adolescents have the youngest age of onset (see Table 13.3).

Because adolescent drug use is so important to adult health, annual surveys are conducted to get an idea of the drugs being used by adolescents. These surveys can be thought of as taking the pulse of adolescent drug use. Putting the data together over the years revealed a pattern of increases and decreases in drug use. The obvious conclusion from the data is that substance use is not stable over time. Not only does substance use rise and fall over time, new drugs tend to become popular and then fall out of favor. What does not appear to change, however, are the health needs of adolescents who become involved with drugs.

Alcohol Versus Marijuana

Another debate over marijuana and adolescent use is about which is more dangerous and harmful, marijuana use or alcohol use. In this debate, there is almost unanimous agreement. Almost everyone thinks it is unhealthy for adolescents to use alcohol and marijuana. There is still too little known about how drugs such as alcohol and marijuana effect maturation. There is, nonetheless, psychosocial evidence about the

Table 13.3 Average age of first use of alcohol, cigarette, and marijuana



Source of data Clark et al. (2013)

difference in behavior between adolescents who primarily use marijuana and adolescents who primarily use alcohol. The group of marijuana users reported more problems with teachers and supervisors. They may be less energetic and less ambitious. Thus, they may have lower grades in secondary school. These characteristic about adolescent marijuana use have strong support in the literature. The alcohol-using group reported more problems with friends and significant others. Females reported more regret about their behavior. And, they reported driving unsafely (Palamar et al. 2014).

The lifetime use of marijuana in the USA is about 50 %. Abuse (as defined by the DSM-IV) is around 7 %, and dependence (as defined by the DSM-IV) is approximately 2 % (Kendler and Prescott 1998). Marijuana has never caused death from an overdose. What we can agree on is that a subset of *vulnerable individuals* abuse and become dependent on marijuana (Hurd et al. 2014).

In comparison, almost 90 % of people 18 or older have drunk alcohol at some point in their lifetime. About 7 % needed treatment for alcohol dependence in 2012. Some 3.4 % of adolescents 12 through 17 years of age also needed treatment in 2012 for alcohol dependence. Every year in the USA, nearly 88,000 people die from alcohol-related causes. Death from alcohol-related causes is the third leading cause of preventable death in the USA (NIAAA 2014). Similar to all drugs, outcomes from the use of alcohol and marijuana are effected by gender, race/ethnicity, drug expectation, legal status, and related stigma.

Concurrent Use of Alcohol, Marijuana, and Tobacco

All too often adolescent substance use is a combination of alcohol, marijuana, and tobacco. In a study that examined adolescent and young adult concurrent use of alcohol, marijuana, and tobacco, the 23 % of young people who used all three drugs were four times more likely to also present with a generalized anxiety disorder

(GAD) than their peers who used no drugs (Brook et al. 2014).

Whether or not marijuana is legal for adults, we need to recognize that a significant percent of adolescents (approximately 20 %) may be current users of marijuana, and as many as 5 % of high school students may be smoking marijuana daily. The reasons adolescents give for smoking marijuana vary, but they can generally be categorized as: experimentation, to obtain status among peers, recreational use, and to regulate their mood. From a mental health perspective, adolescents who use marijuana on a regular basis need to be evaluated for mental health issues.

So, while some adolescents are regular users of marijuana (in an effort to better regulate their mood) regular use of marijuana is a *red flag*, a symptom indicating a possible underlying mental health issue. Early mental health intervention can reduce the risk of drug use lasting into adulthood.

Traffic Fatalities

Unanticipated positive outcomes are easier to miss. A bias in the early years of marijuana research too often was looking for anything negative about marijuana. Regardless, there are some interesting studies about the effect of legalizing marijuana that can be described as unanticipated positive changes in problem behaviors. The effect was to reduce "impaired driver" traffic fatalities, and suicide.

The prevalence of both alcohol and marijuana use, and the high rate of traffic fatalities associated with impaired drivers, has resulted in a great deal of research to better understand the causes and differences so as to improve prevention programming. Traffic fatalities in the USA are the leading cause of death among people 5–34 years of age. Alcohol impaired driving crashes in 2012 accounted for the death of 10,322 people. Of those who died, 6688 (65 %) were the driver of the vehicle who had a blood alcohol concentration (BAC) of 0.08 or higher. It is illegal in all 50 states and the District of Columbia to drive with a BAC level of 0.08 or higher. Alcohol-impaired-driving crashes also took the lives of 2824 (27 %) people riding in the motor vehicles driven by the drunk driver and 810 (8 %) were people not even in the vehicle. Among impaired drivers that died in a vehicle accident, 758 (18 %) were between 16 and 20 years of age (National Center for Statistics and Analysis 2013).

Marijuana Impaired Driving

There is little disagreement among researchers that using alcohol and marijuana together, dangerously impairs a number of driving-related skills. The research, however, is not as conclusive about driving under the influence of the active ingredient in marijuana. In older research studies, there are a number of negative reports about the effect of marijuana on vehicle fatalities, whereas more recent research has called into questions older studies, which tended to be more a reflection of bias than reality. While no one is saying that it is safe to drive while impaired by marijuana, the differences are very interesting. A marijuana high generally peaks within a half hour of smoking Marijuana, and dissipates within three hours, but traces of THC can linger for days in the bodies of habitual smokers (van den Bree and Pickworth 2005). Teenage boys and young men are the most likely to be smoking marijuana and driving. They are also more likely to have an accident while driving even if they are not using marijuana. Reckless behavior and sensation-seeking behavior can explain both marijuana use and traffic accidents (National Center for Statistics and Analysis 2013). The question researchers and the public are asking is: Will legalizing medical marijuana and marijuana for recreational use increases alcohol- and marijuana-related traffic accidents and fatalities?

More recently, research studying the relationship between the legalization of medical marijuana and traffic fatalities in the USA has been found to be somewhat positive (from a harm reduction perspective) than previously reported. In a more current study, researchers found that in 19 states which legalized medical marijuana (after one full year of legalization),

there was an 8–11 % decline in fatal traffic accidents. There was also a sharp decline in alcohol consumption and a decrease in the price of marijuana (Anderson et al. 2013).

Everyone is in agreement that driving under the influence of any drug that affects cognitive and motor abilities is unsafe. This includes illicit drugs, marijuana, and many types of legal medications. The disagreement is on the question of how to deal with the problem of adolescent impaired driving.

Adolescent Suicide

Suicide risk is associated with a number of mental health problems and drug use. In the USA, suicide is a serious public health issue that gravely impacts adolescents and young people. The data on suicide published by the National Center for Injury Prevention and Control, Division of Violence Prevention (2014) indicate that suicide is the third leading cause of death for those between 10 and 24 years of age in the USA. Suicide takes the life of approximately 4600 young people a year. The most common forms are by firearms (45 %) and suffocation (40 %). In addition to those who commit suicide, approximately 157,000 young people a year in this age group (ages between 10 and 24) are treated at emergency hospital departments across the USA for self-inflicted injuries.

Suicide and attempted suicide typically follow an extended period of time where the person is exposed to serious stress and depression. While the numbers of adolescent suicides are far too high, we know more adolescents think about suicide than actually follow through with it. All the same, when children, adolescents, and young adults are thinking about suicide it is serious and should not be ignored. Nationally, some 16 % of young people in grades 9–12 have reported having seriously considered suicide. Another 13 % of students developed a plan. Of serious concern, some 8 % of the adolescents in US high schools (secondary education) reported attempting suicide in the past year (National Center for Injury Prevention and Control, Division of Violence Prevention 2014).

To determine whether legalizing marijuana would cause an increase in the rate of state-level suicide, Anderson et al. (2014) used data from the National Vital Statistics System's Mortality Detail Files for 1990–2007. With these data, the yearly rate of suicides in states that had legalized marijuana was compared to states that had not legalized marijuana. There was no difference in female suicide rates between the two state groups. They did, however, report that among men 20 through 39 years of age, the suicide rate declined in states that had legalized marijuana. It was not a statistically significant decline, but they did find an approximate decline of 10 % in this age group of males. The researchers concluded that the relationship between marijuana legalization and suicides among young men can be explained by the fact that marijuana is used by many to cope with stressful life events (probably by reducing aggression and anger) (Anderson et al. 2014). While consistent with the mood regulation hypotheses about marijuana, this study does not prove that adolescent suicide behavior will drop when it is legalized. What it strongly suggests is that legalizing marijuana will likely not increase adolescent suicidal behavior.

What we do know is that a sizable number of adolescents use some form of drug to deal with stress. Marijuana and other drug use should be viewed as a symptom of an underlying problem. These findings also should put us on notice to look for both the negative and the positive effects of legalizing marijuana so that we can take advantage of positive effects.

Gender Ethnic and Racial Differences in Marijuana Use

Similar to all psychoactive drugs both legal and illegal, marijuana use differs by gender, race, and ethnicity. This is important information because these differences are used to develop and design prevention health and mental health interventions and programming.

How adolescents perceive their friend's drug use is important because it acts to influence their own drug use. Friend's use can have both a direct and an indirect effect; moreover, an adolescent's perception of their friend's drug use also varied by gender and race. Research on peer attitudes has consistently shown that peer attitudes, to some degree, influence substance use for all races and gender. In terms of cigarette and marijuana use among adolescents, the attitude of close friends influences female cigarette and marijuana use but not adolescent male use. White adolescent females also tend to be influenced by friends more than African American and Hispanic females (Mason et al. 2014).

While it may surprise some, during adolescence and young adulthood, African Americans as a group tend to use less alcohol, marijuana, and tobacco; yet they have more problems from using these drugs than non-Hispanic whites (Swendsen et al. 2012; Zapolski et al. 2014). In addition, non-Hispanic whites more than African Americans engage in at-risk alcohol use. This difference, however, tends to fade out as African Americans reach adulthood (Pacek et al. 2012). Other studies have reported that African American youth who do use these drugs become dependent on them quicker than white adolescents (Alvanzo et al. 2011), and they tend to use drugs longer (Caetano and Kaskutas 1995). In these studies, environmental context that also influences marijuana use cannot be ignored.

In many studies, personal characteristics of African American adolescents have been isolated to explain marijuana use. "Self-control" is one such individual characteristic. When defined as low emotional control, risk-taking, and rule-breaking (to some degree individual characteristic associated with drug use among all races and ethnic groups of adolescents), self-control in part explains some portions of use. The level of self-control exerted by African American adolescents living in urban environments influences the degree of their marijuana use. High levels of self-control are associated with low levels of marijuana used during adolescence and into young adulthood. To the contrary, low self-control is associated with high marijuana use (Pahl et al. 2014). This association is broadly supported in the literature; nevertheless, the question that must be asked is how much self-control is a personal choice made by the individual African American adolescent given the stressors in their dysfunctional urban environment?

What is evident in the literature is that African American youth who use these drugs experience more consequences related to substance use than other racial and ethnic groups. Because of racial disparity, African American young people are more likely to also experience legal, social, and interpersonal problems related to use (Witbrodt et al. 2014). They also are more likely to be arrested and incarcerated for marijuana-related offenses (Ramchand et al. 2006). In general, marijuana use and the frequency of use are higher among males than females. Marijuana use is also higher for whites during adolescents and young adulthood, although as adults African American women have a higher frequency of use than non-Hispanic white women (Keyes et al. 2015).

Adolescent American Indian Alcohol and Other Drug Use

American Indian adolescents in the USA are another group that bears a disproportionately high burden of disability from substance abuse (Stanley et al. 2014). Precisely, American Indian adolescents living on or near an Indian reservation have a significantly higher rate of drug use over the national adolescent rate of drug use. Their drug use is also higher than American Indian adolescents who do not live on or near a reservation. The highest rate of drug use by these American Indian adolescents was reported among 8th graders. Lifetime marijuana use for adolescents in 8th through 12th grades was over 50 %. Higher rates of binge drinking and use of pharmaceuticals such as OxyContin are also reported for these American Indian adolescents.

The rate of drug use among American Indian adolescents is very concerning, especially when they live in an environmental context that is highly

associated with above average adolescent drug use. Academic failure, delinquency, violent criminal behavior, suicidality, and alcohol-related mortality rates are also above national averages among American Indian adolescents who live on or near Indian reservations (Stanley et al. 2014).

Response to Different Contextual Exposure

The difference in marijuana use among African American adolescents, when compared to other marijuana using subgroups, is that African American adolescent use of marijuana can be shown to be in part associated with their contextual experiences. When contextual stress is defined as neighborhood disorder, community violence exposure, and racial discrimination, there are clear differences in exposure response. For instance, youth who reported exposure to community violence, witnessing or being a victim of community violence, was significantly more likely to move from no involvement with marijuana, to seeking opportunities to use marijuana and then abusing marijuana.

Experiencing racial discrimination is also associated with African American adolescents using marijuana. In this case, the more intense the racial discrimination is, the more probable the adolescent will seek out opportunities to use marijuana (Reboussin 2014). This supports the self-medication hypotheses. In stressful environments, regulating one's mood or reducing the sense of stress can be good for one's health both emotionally and physically.

Trajectory: Effects of Marijuana on the Adolescent Life Course

Understanding life course patterns of substance use is essential for designing effective health and mental health prevention programs for adolescents. Although highly influenced by the environmental context, adolescent drug use and abuse tends to predict drug use as a young adult and into adulthood. Identifying the differences in trajectories of gender, racial/ethnic, and degree of drug use helps identify critical periods when prevention programs might be more effective.

In terms of alcohol, marijuana, and tobacco use, the underlying developmental patterns across gender and race/ethnicity (e.g., African Americans, Asians, and Hispanics) seem to follows a fairly common behavioral pathway during adolescence. So far, we can say with some confidence, early onset predicts a more severe problem with drugs throughout the life cycle. The earlier adequate treatment begins the higher the chances of changing the trajectory. Typically when drug use starts in early adolescence (12 years of age or younger), drug use increases into young adulthood (mid-20s) and then declines by early adulthood (approximately 35 years of age). This timeline assumes no treatment for mental health or substance misuse, which could have moderated the life course.

As would be expected, adolescent males and females differ in their drug use trajectory. Typically, females tend to have higher levels of drug use in early adolescence, while male adolescents typically have higher levels of drug use in mid-adolescence and early adulthood. Ethnic and racial similarities and differences are also fairly consistent. While the trajectory for Hispanic adolescents shows a higher initial rate of drug use, the white adolescent trajectory reveals a higher level of drug use from mid-adolescence into their early 30s. By their mid-30s, there are few racial/ethnic differences in drug use. The exceptions are African Americans, who have higher use of tobacco and marijuana (Chen and Jacobson 2012).

Effect on Motivation, Ambition, and Education

Another area of concern over frequent marijuana use during adolescence is the worry about the consequences for the adolescent's life course. Of particular interest is how marijuana use in adolescence effects motivation and ambition, and the impact on their post-secondary educational experience. To examine the effect on the life course of adolescent marijuana use among

females, Homel et al. (2014) analyzed data collected between 2003 and 2011 biennially from 322 young women. Data were also collected from these young women on the frequency of marijuana use when they were between 15 and 25 years of age.

The young women were grouped into three categories based on marijuana involvement. Those adolescents who "abstained" from using marijuana made up 31 % of the sample. Student in the group of "occasional users" was the largest group at 44 %. The third group, identified as "frequent users," comprises 25 % of the participants. The researchers compared the three groups on the type of post-secondary education involvement, timing of enrollment, and dropping out. They controlled for gender, maternal education, family structure, and high school grades. They did not control for any psychopathology.

In their analysis, an association was found between the group of "frequent users" and young women with the lowest high school grades. The "frequent users" also had more conduct problems. Fewer "frequent users" moved on to post-secondary education especially at the university level. Occasional users, however, did not look any different from the group who abstained from marijuana use on high school grades, conduct problems, and enrolling in a post-secondary educational institution. They did differ as a group in that they delayed enrollment and were more likely to drop out than the group who abstained.

Two important points about marijuana use are supported in this study. First, the percent of adolescents who are "frequent users" needs a healthcare system that provides adolescent-centered treatment. Secondly, adolescents who are "occasional users" cannot be ignored. Long-term "occasional use" may be an early warning sign (the proverbial canary in the coal mine).

Effect on Adult Work Commitment, Financial Stability, Drug Use, and Violence

There is also a concern about how adolescent marijuana use trajectories effect adult work commitment, financial stability, drug use, and violence. In one study, African American and Puerto Rican students from the East Harlem area of New York City were interviewed five times over 20 years. The average age of the adolescents at each interview was: 14, 19, 24, 29, and 32. Obviously, this is not a representative sample of adolescents in the USA, but it is a good sample of disadvantaged minority adolescents living in large urban areas of the USA.

Of the 816 participants, 60 % were females, 52 % African American, and 48 % Puerto Rican. In this group of minority adolescents, those who were frequent marijuana users in adolescence had higher negative scores as an adult at 32 years of age in each area examined: lower work commitment, less financial stability, more drug use, and more violence (Brook et al. 2013).

Similar to other studies that suggest a negative life course for adolescent marijuana use, Book and colleagues did not show that marijuana use was the cause. It does, however, contribute to the finding that heavy marijuana use during adolescence is associated with a negative outcome as adults. Moreover, few would argue against that assumption. What is in question is causation. Does marijuana cause these problems or do these problems drive marijuana use. What everyone agrees on is that adolescents who are chronic marijuana users are jeopardizing their future. Whether the danger to one's adult life is from marijuana or a mental health disorder, or both is still unclear. If marijuana use delays an adolescent receiving mental health services because the adolescent is diagnosed as a drug addict, the delay in and of itself may be as harmful as the marijuana use.

Effect on Adolescent Psychopathology

Adolescent psychopathology is another outcome that is commonly associated with adolescent marijuana misuse (Martino and Collins 2004). This is a popular explanation even though the mechanism that results in adolescent psychopathology and causal role of marijuana use is not well explained. In one attempt to understand

the connection, a longitudinal study of 205 men was carried out. Data were collected annually on "individual psychopathology" and "family characteristics" from adolescence into their mid-30s. Based on marijuana use in adolescence, Washburn and Capaldi (2014) were able to predict patterns of marijuana use when the participants were in their 20s, and they were able to predict psychopathology when the participants were in their mid-30s. They concluded that "patterns of heavy marijuana use in early adulthood are associated with psychopathology toward midlife." Using the same analysis, they could have correctly concluded that heavy marijuana use was a precursor to the development of a diagnosable mental health disorder in young adulthood.

The short coming of many longitudinal studies is that they do not show causation. After Moore and his team (2007) completed an exhaustive and systemic review of the literature on the relationship between psychosis and marijuana, they concluded that longitudinal research was unlikely to resolve the question about marijuana use causing psychosis, or psychosis causing marijuana use. The reason longitudinal research cannot answer the question about marijuana causing mental health disorders is because it is impossible to tell which came first, the mental health disorder or the regular use of marijuana (Manrique-Garcia et al. 2012). For sure we know the self-medicating hypothesis would explain some percentage of the use by people who develop a mental health problem. What these longitudinal studies do tell us in no uncertain terms is that marijuana is used by a significant number of adolescents who will develop a psychosis in adolescence or during their young adulthood.

What We Have Learned

The best answer to the question "How will decriminalizing marijuana impact adolescent use, abuse, health, and life course in the USA?" is based on the experience of states, which have legalized marijuana.

Legalization of marijuana for adult use by individual states in the USA, in many ways, is an ongoing social and public health experiment. It is a profound social and political change, which has been met with resistances and predictions of harm to adolescent social morals and health. Likewise, even those who support legalization are concerned about adolescent exposure.

Legalization of marijuana is driven by a major shift in public opinion, from supporting the criminalization of marijuana to a view that marijuana is less harmful than alcohol, and, at least, medical marijuana should be legal. This shift in public opinion has been translated into 23 states (out of the 50 in 2015) legalizing medical marijuana.

Illegal marijuana has been available and easily obtained since the 1970s. And, although illegal, marijuana is the third most popular recreational drug in the USA following behind alcohol and tobacco. Research in 2014 estimated that 120,460,000 (38 %) people over the age of 12 had smoked marijuana, at least once. Some 25 million used marijuana in the past year. Some 7 % of people over the age of 12 used marijuana in the past month before the survey. Furthermore, research indicates that adolescents use marijuana at about the same rate as the national average, somewhere between 7 and 8 %. The overall average of marijuana use in the USA for all years and all states is 7.5 %. Among 12th graders, 81 % reported that marijuana was easy to obtain.

Adolescent's reasons for smoking marijuana vary, but they can generally be categorized as: experimentation, to obtain status among peers, recreational use, and to regulate their mood. Contextual stresses such as neighborhood disorder, community violence exposure, and racial discrimination are also strongly correlated with drug use and other serious health and psychosocial problems experienced by adolescents.

Clinically, we have learned that when adolescents present with marijuana or other drug problem, the best practice protocols are: (1) rule out health (physical symptoms) and mental distress (depression, anxiety, prodromal symptoms, etc.); (2) if mental distress cannot be ruled out, treat for a co-occurring disorder of mental health and substance abuse.

The most harmful effect of marijuana use in the USA is related to its criminalization. Some 75 % of those arrested and charged with marijuana possession were adolescents and young people in their 20s. In 2011, 42 % of all drug arrests in the USA were for marijuana possession. This resulted in over 500,000 people being imprisoned for marijuana violations. Enforcement costs the USA an estimated $41 billion a year.

We know a history of juvenile justice involvement increases the risk to the adolescent's life course. This makes the arrest of minority youth for marijuana possession especially troubling. Criminal statistics indicate about 75 % of the 700,000 people arrested each year are African Americans. This is a rate 3.75 times higher for African Americans than for people identified as "white." Even though, when compared to white youth in the juvenile justice system, African Americans were less likely to report substance use. Decriminalization would reduce the cost of criminal enforcement and the human collateral damage. It would also provide the opportunity to shift resources currently spent on criminal prosecution to drug prevention and treatment.

Even when and if marijuana does become legal for adults in a state or nationwide, it will still be illegal for adolescents to possess marijuana. More importantly, the meaning of adolescent marijuana use will not change. It will still be a health issue for adolescents. It will still be a signal of a possible psychosocial or a developing mental health disorder. In addition, the risk factor for adolescent smoking marijuana will not change. Social networks, peers, parental influences, and behaviors (self-medicating) to regulate one's mood will continue to be the best predictors of marijuana use and abuse.

No doubt, legalizing marijuana sends the message to adolescents that marijuana is not as harmful as once thought. Nevertheless, adolescents who use marijuana will still report problems with personal relationships (i.e., teachers and supervisors). They will also be less engaged in school and work.

Another message that is being disseminated is that marijuana is less harmful than alcohol. Adolescents who only drink alcohol report relationship problems with friends and family, and also report more regret about their behavior and driving unsafely. Problems faced by adolescent users of alcohol and marijuana will not change when legal marijuana is available to adults. Indeed, the risk of concurrent use of alcohol, marijuana, and tobacco will not change. Nor will the fact that early mental health and health services can reduce the risk of drug use continuing into adulthood.

In contrast to the problems predicted if marijuana is legalized for adults, there have been some interesting changes in negative behavior observed in states that have legalized marijuana. While everyone is in agreement that driving under the influence of any drug that affects cognition and motor abilities is unsafe, traffic statistics surprisingly show that in states, which have legalized medical marijuana, deadly auto crashes have decreased. After one full year of legalization, there was an 8–11 % decline in fatal traffic accidents. These findings are not evidence that fatal auto accidents will decrease when marijuana is legalized, but it does suggest that adolescent impaired driving that ends in a fatal auto crash is unlikely to increase as a result of states legalizing marijuana.

Suicide is another such problem that has possibly declined in states that have legalized marijuana, especially among men 20–39 years of age. There was an approximate decline of 10 % in this age group of males. The researchers concluded that the relationship between marijuana legalization and suicides among young men can be explained by the fact that marijuana is used by many to cope with stressful life events. What this research strongly suggests is that legalizing marijuana is unlikely to increase adolescent suicide behavior. In states that legalized marijuana, there was also a sharp decline in alcohol consumption and a decrease in the price of marijuana.

Whether or not marijuana is legal for adults, we need to expect a significant percent of adolescents, probably over 50 %, will try marijuana at least once during their adolescence Additionally, we can expect between 7 and 10 % of adolescents to use it on a regular bases. What

will change is the view of adolescent marijuana use. If decriminalized, the use of marijuana will shift from being a criminal enforcement problem to a health issue. Reframed as a health issue, decriminalization will significantly reduce the harm done by arrest and incarceration. It will also reduce the contact between adolescents and a criminal element that sells hard drugs.

Once the novelty of legal marijuana wears off, research strongly suggests that it is unlikely adolescent marijuana use will increase. Even so, legalization of marijuana will not reduce the need to deploy and support health-oriented prevention and treatment programs that target adolescent alcohol, marijuana, tobacco, and other drug use.

References

Allwood, M. A., Esposito-Smythers, C., Swenson, L. P., & Spirito, A. (2014). Negative cognitions as a moderator in the relationship between PTSD and substance use in a psychiatrically hospitalized adolescent sample. *Journal of Traumatic Stress, 27*(2), 208–216.

Alvanzo, A. A., Storr, C. L., La Flair, L., Green, K. M., Wagner, F. A., & Crum, R. M. (2011). Race/ethnicity and sex differences in progression from drinking initiation to the development of alcohol dependence. *Drug and Alcohol Dependence, 118*(2), 375–382.

Anderson, D. M., Hansen, B., & Rees, D. I. (2013). Medical marijuana laws, traffic fatalities, and alcohol consumption. *Journal of Law and Economics, 56*(2), 333–369.

Anderson, D. M., Rees, D. I., & Sabia, J. J. (2014). Medical marijuana laws and suicides by gender and age. *American Journal of Public Health, 104*(12), 2369–2376. doi:10.2105/AJPH.2013.301612

Arendt, M., Rosenberg, R., Fjordback, L., Brandholdt, J., Foldager, L., Sher, L., et al. (2007). Testing the self-medication hypothesis of depression and aggression in cannabis-dependent subjects. *Psychological Medicine, 37*(07), 935–945.

Bader, P., Boisclair, D., & Ferrence, R. (2011). Effects of tobacco taxation and pricing on smoking behavior in high risk populations: A knowledge synthesis. *International Journal of Environmental Research and Public Health, 8*(11), 4118–4139.

Becker, G. S., Murphy, K. M., & Grossman, M. (2006). The market for illegal goods: The case of drugs. *Revista de Economía Institucional, 8*(15), 17–42.

Blume, A. W., Schmaling, K. B., & Marlatt, G. A. (2000). Revisiting the self-medication hypothesis from a behavioral perspective. *Cognitive and Behavioral Practice, 7*(4), 379–384.

Bolles, J. R., Earleywine, M., & Gordis, E. (2014). Acquired preparedness model and impulsivity moderated expectancies: Examining predictors of marijuana use. *Addiction Research & Theory, 22*(6), 490–497.

Bonn-Miller, M. O., Babson, K. A., & Vandrey, R. (2014). Using cannabis to help you sleep: Heightened frequency of medical cannabis use among those with PTSD. *Drug and Alcohol Dependence, 136*, 162–165. doi:10.1016/j.drugalcdep.2013.12.008

Brook, J. S., Lee, J. Y., Finch, S. J., Seltzer, N., & Brook, D. W. (2013). Adult work commitment, financial stability, and social environment as related to trajectories of marijuana use beginning in adolescence. *Substance Abuse, 34*(3), 298–305.

Brooks-Russell, A., Farhat, T., Haynie, D., & Simons-Morton, B. (2014). Trends in substance use among 6th- to 10th-grade students from 1998 to 2010 findings from a national probability study. *The Journal of Early Adolescence, 34*(5), 667–680.

Caetano, R., & Kaskutas, L. A. (1995). Changes in drinking patterns among whites, blacks and Hispanics, 1984–1992. *Journal of Studies on Alcohol and Drugs, 56*(5), 558.

Chen, P., & Jacobson, K. C. (2012). Developmental trajectories of substance use from early adolescence to young adulthood: Gender and racial/ethnic differences. *Journal of Adolescent Health, 50*(2), 154–163.

Cherry, A., Dillon, M. E., & Rugh, D. (2002). *Abuse of alcohol and other drugs: A global view*. Westport, CT: Greenwood Publishing Group, Inc.

Christie, D., & Viner, R. (2005). Adolescent development. *BMJ, 330*(7486), 301–304.

Clark, T. T., Doyle, O., & Clincy, A. (2013). Age of first cigarette, alcohol, and marijuana use among US biracial/ethnic youth: A population-based study. *Addictive Behaviors, 38*(9), 2450–2454.

Earleywine, M., & Bolles, J. R. (2014). Marijuana, expectancies, and post-traumatic stress symptoms: A preliminary investigation. *Journal of Psychoactive Drugs, 46*(3), 171–177. doi:10.1080/02791072.2014.920118

Eisenberg, M. E., & Forster, J. L. (2003). Adolescent smoking behavior: Measures of social norms. *American Journal of Preventive Medicine, 25*(2), 122–128.

Ennett, S. T., Foshee, V. A., Bauman, K. E., Hussong, A., Faris, R., Hipp, J. R., et al. (2010). A social contextual analysis of youth cigarette smoking development. *Nicotine & Tobacco Research*, ntq122.

Evans-Whipp, T. J., Bond, L., Toumbourou, J. W., & Catalano, R. F. (2007). School, parent, and student perspectives of school drug policies. *Journal of School Health, 77*(3), 138–146.

Federal Bureau of Investigation, & US Dept. of Justice. (2013). *Crime in the United States 2012*. Available at: http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2012/crime-in-the-UnitedStates-2012/persons-arrested/persons-arrested

Friese, B., & Grube, J. W. (2013). Legalization of medical marijuana and marijuana use among youths. *Drugs: Education, Prevention and Policy, 20*(1), 33–39.

Glaeser, E. L., & Shleifer, A. (2001). *The rise of the regulatory state* (No. w8650). Cambridge: National Bureau of Economic Research.

Guy, S. M., Smith, G. M., & Bentler, P. M. (1994). Consequences of adolescent drug use and personality factors on adult drug use. *Journal of Drug Education, 24*(2), 109–132.

Harper, S., Strumpf, E. C., & Kaufman, J. S. (2012). Do medical marijuana laws increase marijuana use? Replication study and extension. *Annals of Epidemiology, 22*(3), 207–212.

Henwood, B., & Padgett, D. K. (2007). Reevaluating the self-medication hypothesis among the dually diagnosed. *American Journal on Addictions, 16*(3), 160–165.

Hohman, Z. P., Crano, W. D., Siegel, J. T., & Alvaro, E. M. (2014). Attitude ambivalence, friend norms, and adolescent drug use. *Prevention Science, 15*(1), 65–74.

Homel, J., Thompson, K., & Leadbeater, B. (2014). Trajectories of marijuana use in youth ages 15–25: Implications for postsecondary education experiences. *Journal of Studies on Alcohol and Drugs, 75*(4), 674.

Hurd, Y. L., Michaelides, M., Miller, M. L., & Jutras-Aswad, D. (2014). Trajectory of adolescent cannabis use on addiction vulnerability. *Neuropharmacology, 76*, 416–424.

Joffe, A., & Yancy, W. S. (2004). Legalization of marijuana: Potential impact on youth. *Pediatrics, 113*(6), e632–e638.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2011). *Monitoring the future national survey results on drug use, 1975–2010* (Vol. I, Secondary School Students). Ann Arbor: Institute for Social Research. Retrieved from http://files.eric.ed.gov/fulltext/ED528081.pdf

Johnston, L. D., O'Malley, P. M., Miech, R. A., Bachman, J. G., & Schulenberg, J. E. (2015). *Monitoring the Future national survey results on drug use: 1975–2014: Overview, key findings on adolescent drug use*. Ann Arbor: Institute for Social Research, University of Michigan. Retrieved from http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2014.pdf

Kendler, K. S., & Prescott, C. A. (1998). Cannabis use, abuse, and dependence in a population-based sample of female twins. *The American Journal of Psychiatry, 155*(8), 1016–1022. http://dx.doi.org/10.1176/ajp.155.8.1016

Keyes, K. M., Vo, T., Wall, M. M., Caetano, R., Suglia, S. F., Martins, S. S., et al. (2015). Racial/ethnic differences in use of alcohol, tobacco, and marijuana: Is there a cross-over from adolescence to adulthood? *Social Science & Medicine*, *124*, 132–141.

Khantzian, E. J. (1997). The self-medication hypothesis of substance use disorders: A reconsideration and recent applications. *Harvard Review of Psychiatry, 4*(5), 231–244.

Khantzian, E. J. (2003). Understanding addictive vulnerability: An evolving psychodynamic perspective. *Neuropsychoanalysis: An Interdisciplinary Journal for Psychoanalysis and the Neurosciences, 5*(1), 5–21.

Lantz, P. M., Jacobson, P. D., Warner, K. E., Wasserman, J., Pollack, H. A., Berson, J., et al. (2000). Investing in youth tobacco control: A review of smoking prevention and control strategies. *Tobacco Control, 9*(1), 47–63.

Lynne-Landsman, S. D., Livingston, M. D., & Wagenaar, A. C. (2013). Effects of state medical marijuana laws on adolescent marijuana use. *American Journal of Public Health, 103*(8), 1500–1506.

Manrique-Garcia, E., Zammit, S., Dalman, C., Hemmingsson, T., Andreasson, S., & Allebeck, P. (2012). Cannabis, schizophrenia and other non-affective psychoses: 35 years of follow-up of a population-based cohort. *Psychological Medicine, 42*(06), 1321–1328.

Martino, S. C., Collins, R. L., & Ellickson, P. L. (2004). Substance use and vulnerability to sexual and physical aggression: A longitudinal study of young adults. *Violence and victims, 19*(5), 521–540.

Mason, M. J., Mennis, J., Linker, J., Bares, C., & Zaharakis, N. (2014). Peer attitudes effects on adolescent substance use: The moderating role of race and gender. *Prevention Science, 15*(1), 56–64.

Miron, J. A., & Waldock, K. (2010). *The budgetary impact of ending drug prohibition*. Available at SSRN 1710812.

Moore, T. H., Zammit, S., Lingford-Hughes, A., Barnes, T. R., Jones, P. B., Burke, M., et al. (2007). Cannabis use and risk of psychotic or affective mental health outcomes: A systematic review. *The Lancet, 370* (9584), 319–328.

Morgenstern, M., Sargent, J. D., Engels, R. C., Scholte, R. H., Florek, E., Hunt, K., et al. (2013). Smoking in movies and adolescent smoking initiation: Longitudinal study in six European countries. *American Journal of Preventive Medicine*, *44*(4), 339–344.

Murphy, D. A., Durako, S. J., Moscicki, A. B., Vermund, S. H., Ma, Y., Schwarz D. F., et al. (2001). No change in health risk behaviors over time among HIV infected adolescents in care: Role of psychological distress. *Journal of Adolescent Health*, *29*(3), 57–63.

National Center for Injury Prevention and Control, Division of Violence Prevention. (2014). *Suicide prevention: Youth suicide*. Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/violenceprevention/pub/youth_suicide.html

National Center for Statistics and Analysis. (2013). *Traffic safety facts. 2012 data.* Washington, DC: National Highway Traffic Safety Administration.

NIAAA. (2014). *Alcohol facts and statistics*. National Institute on Alcohol Abuse and Alcoholism. Available at: http://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/alcohol-facts-and-statistics

Pacek, L. R., Malcolm, R. J., & Martins, S. S. (2012). Race/ethnicity differences between alcohol, marijuana, and co-occurring alcohol and marijuana use disorders and their association with public health and social

problems using a national sample. *The American Journal on Addictions, 21*(5), 435–444.

Pahl, K., Brook, J. S., & Lee, J. Y. (2014). Adolescent self-control predicts joint trajectories of marijuana use and depressive mood into young adulthood among urban African Americans and Puerto Ricans. *Journal of Behavioral Medicine, 37*(4), 675–682.

Palamar, J. J. (2014). An examination of opinions toward marijuana policies among high school seniors in the United States. *Journal of Psychoactive Drugs, 46*(5), 351–361. doi:10.1080/02791072.2014.962716

Palamar, J. J., Fenstermaker, M., Kamboukos, D., Ompad, D. C., Cleland, C. M., & Weitzman, M. (2014). Adverse psychosocial outcomes associated with drug use among US high school seniors: A comparison of alcohol and marijuana. *The American Journal of Drug and Alcohol Abuse, 40*(6), 438–446.

Pedersen, W. (2008). Does cannabis use lead to depression and suicidal behaviours? A population-based longitudinal study. *Acta Psychiatrica Scandinavica, 118*(5), 395–403.

Pudney, S. (2010). Drugs policy: What should we do about cannabis? *Economic Policy, 25*(61), 165–211.

Quinn, C. R. (2014, January). Living on the wrong side of the law: The role of involvement in criminal activity in predicting adolescent substance use. In *Society for Social Work and Research 18th Annual Conference: Research for Social Change: Addressing Local and Global Challenges*. SSWR.

Ramchand, R., Pacula, R. L., & Iguchi, M. Y. (2006). Racial differences in marijuana-users' risk of arrest in the United States. *Drug and Alcohol Dependence, 84*(3), 264–272.

Reboussin, B. A. (2014, November). Influence of contextual stressors on adolescent marijuana use in a sample of African Americans living in an urban area. In *142nd APHA Annual Meeting and Exposition, (November 15–November 19, 2014)*. APHA.

Roitman, P., Mechoulam, R., Cooper-Kazaz, R., & Shalev, A. (2014). Preliminary, open-label, pilot study of add-on oral Δ9-tetrahydrocannabinol in chronic post-traumatic stress disorder. *Clinical Drug Investigation, 34*(8), 587–591.

SAMHSA. (2014). Results from the 2013 national survey on drug use and health: Summary of national findings. Rockville, MD: HHS Publication No. (SMA) 14-4887. NSDUH Series H-49. Available at: http://www.drugabuse.gov/publications/drugfacts/high-school-youth-trends

Shrier, L. A., Ross, C. S., & Blood, E. A. (2014). Momentary positive and negative affect preceding marijuana use events in youth. *Journal of Studies on Alcohol and Drugs, 75*(5), 781.

Smith, E. (2013). *Marijuana and other coping strategies used by HIV/AIDS patients reporting anxiety, depression, and pain*. Doctoral dissertation. Available at: http://hdl.handle.net/10920/29024

Spetz, J. (2014, June). The impact of medical marijuana laws on youth attitudes toward and use of illicit substances. In *Health and healthcare in America: From economics to policy*. Philadelphia, PA: Ashecon.

Stanley, L. R., Harness, S. D., Swaim, R. C., & Beauvais, F. (2014). Rates of substance use of American Indian students in 8th, 10th, and 12th grades living on or near reservations: Update, 2009–2012. *Public Health Reports (Washington, DC: 1974), 129*(2), 156–163.

Suh, J. J., Ruffins, S., Robins, C. E., Albanese, M. J., & Khantzian, E. J. (2008). Self-medication hypothesis: Connecting affective experience and drug choice. *Psychoanalytic Psychology, 25*(3), 518.

Svrakic, D. M., Lustman, P. J., Mallya, A., Lynn, T. A., Finney, R., & Svrakic, N. M. (2011). Legalization, decriminalization and medicinal use of cannabis. *Missouri Medicine, 109*(2), 90–98.

Swendsen, J., Burstein, M., Case, B., Conway, K. P., Dierker, L., He, J., et al. (2012). Use and abuse of alcohol and illicit drugs in US adolescents: Results of the national comorbidity survey-adolescent supplement. *Archives of General Psychiatry, 69*(4), 390–398.

Swift, A. (2013). For first time, Americans favor legalizing marijuana. *Gallup Politics.*

Tucker, J. S., De La Haye, K., Kennedy, D. P., Green, H. D., & Pollard, M. S. (2014a). Peer influence on marijuana use in different types of friendships. *Journal of Adolescent Health, 54*(1), 67–73.

Tucker, J. S., Pedersen, E. R., Miles, J. N., Ewing, B. A., Shih, R. A., & D'Amico, E. J. (2014b). Alcohol and marijuana use in middle school: Comparing solitary and social-only users. *Journal of Adolescent Health, 55*(6), 744–749.

van den Bree, M. B., & Pickworth, W. B. (2005). Risk factors predicting changes in marijuana involvement in teenagers. *Archives of General Psychiatry, 62*(3), 311–319.

Wall, M. M., Poh, E., Cerdá, M., Keyes, K. M., Galea, S., & Hasin, D. S. (2011). Adolescent marijuana use from 2002 to 2008: Higher in states with medical marijuana laws, cause still unclear. *Annals of Epidemiology, 21*(9), 714–716.

Washburn, I. J., & Capaldi, D. M. (2014). Heterogeneity in men's marijuana use in the 20s: Adolescent antecedents and consequences in the 30s. *Development and Psychopathology*, 1–13.

Weiss, R. D., Griffin, M. L., & Mirin, S. M. (1992). Drug abuse as self-medication for depression: An empirical study. *The American Journal of Drug and Alcohol Abuse, 18*(2), 121–129.

Williams, J., Van Ours, J. C., & Grossman, M. (2011). *Why do some people want to legalize cannabis use?* (No. w16795). Cambridge: National Bureau of Economic Research.

Witbrodt, J., Mulia, N., Zemore, S. E., & Kerr, W. C. (2014). Racial/ethnic disparities in alcohol related problems: Differences by gender and level of heavy drinking. *Alcoholism, Clinical and Experimental Research, 38*(6), 1662–1670.

Zapolski, T. C., Pedersen, S. L., McCarthy, D. M., & Smith, G. T. (2014). Less drinking, yet more problems: Understanding African American drinking and related problems. *Psychological Bulletin, 140*(1), 188.

Adolescents with Chronic Conditions 14

Richard E. Bélanger and Joan-Carles Surís

Introduction

Chronic conditions have long been a reality for adults and the elderly. Seventy years ago, it was uncommon for child with a chronic condition to achieve adulthood, and even more exceptional was a baby with a significant pulmonary illness or cardiomyopathy to live more than a couple of months. However, the past century has seen dramatic changes occurring in the world of health sciences. The rise of antibiotics and the discovery of insulin therapy have paved the way to high-tech cardiac palliative surgery and specific immune modulators. Fortunately, children have much benefited from these revolutions. In the USA, for example, child mortality has decreased from 1418.8 in 1907 to 28.6 deaths in 2007 per 100,000 children aged 1–4 years. Among children 5–14 years of age, it dropped from 307.5 in 1907 to 15.3 in 2007 per 100,000 (Singh 2010). As a result, children who experience serious health problems today survive. While most recover, many will struggle with subsequent chronic conditions and disabilities (see Fig. 14.1). Some will necessitate ongoing medical care and supervision for a condition diagnosed before adulthood. Living with a chronic condition is therefore a new reality for many adolescents. Accordingly, the objective of this chapter was to present a broad view of the issues faced by young people living with a chronic condition.

The definition of *chronic condition* has evolved over time as many youths entered adult life with chronic health conditions and related needs. According to the World Health Organization (2002), *chronic condition* relates to health problems that require ongoing management over a period of years or decades. Although broad, this definition diverges from a previous dichotomic view of diseases described as either communicable or non-communicable. It also focuses on the management and care that is needed to be performed, for follow-up, cure, or chronic care. See Box 1 for examples of chronic conditions of adolescents.

Box 1: Several chronic conditions encountered among children and adolescents

- **Asthma** The number of children with asthma increases each year. Better treatment for asthma reduces the chance of hospitalization, the need for emergency treatment, and death due to asthma.
- **Cystic fibrosis** An inherited lung disease for which there is no cure. Early (even prenatal) diagnosis can lead to

R.E. Bélanger (✉)
Population Health and Optimal Health Practices Research Unit, CHU de Québec Research Center, Québec, Canada
e-mail: Richard.Belanger@mail.chudequebec.ca

J.-C. Surís
Institute of Social and Preventive Medicine, Lausanne University Hospital, Lausanne, Switzerland

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_14

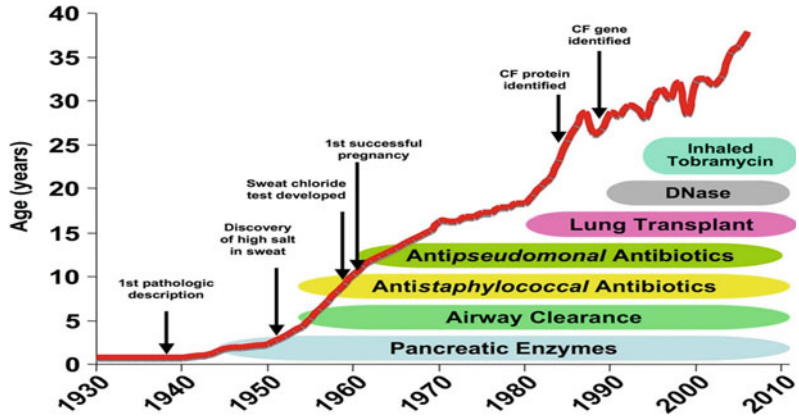


Fig. 14.1 Media age of survival from individuals with cystic fibrosis according to years of registry with evolution of therapeutics. *Source* 2005 Annual Data Report to the Center Directors. Cystic Fibrosis Patient Registry, Bethesda, MD. Retrieved from http://www.ema.europa.eu/docs/en_GB/document_library/Presentation/2012/12/WC500136151.pdf

better treatment for individuals with cystic fibrosis.

- **Diabetes** Having diabetes (either type 1 or type 2) causes increased risk of heart and blood vessel disease, stroke, and diabetes-related complications at an early age.
- **Obesity** Obesity and overweight in children are major public health problems. More children are overweight, obese, or morbidly obese than ever before. Many children who are overweight maintain their obesity as adults, leading to obesity-related complications such as diabetes, heart disease, high blood pressure, high cholesterol, stroke, some cancers, arthritis, and sleep-disordered breathing.
- **Malnutrition** Poor nutrition leads to anemia (low blood count), inadequate immune system function, and susceptibility to illness and intellectual development problems.
- **Developmental disabilities** Including attention-deficit/hyperactivity disorder (ADHD) and the autism spectrum disorders
- **Cerebral palsy** A consequence of low birth weight and prematurity, usually linked to chronic lung disease, and developmental delays. Adolescence is mainly associated with spasticity and its related problems.
- **Mental illnesses** Early diagnosis and treatment are important to decrease effects on development and functionality.

Adapted from Torpy et al. (2010).

Wording related to consequences of health conditions has also evolved correspondingly moving from *handicap* (where one is unable to adapt to the environment, regardless of the assistance) to *limitations* (where one will benefit from a little or more extensive assistance in specific situations). Overall, many adolescents with chronic conditions will have to adapt to some degree, through medication, therapy, or strict follow-ups due to known medical threats related to their health condition. These adolescents are sometimes referred to as children with special healthcare needs (CSHCN). They have or are at risk for a chronic physical, developmental, behavioral, or emotional condition. Notably,

these children require health and related services typically beyond what is required by children in general (Newacheck et al. 1998). In the USA, there are about 14 million children and adolescents (1 in 6) living with a chronic condition.

Chronic Health Conditions Among Adolescents as Additional Stressors

Specific developmental issues emerge during the period from adolescence through young adulthood (i.e., autonomy, relationships). As some youths have difficulty achieving all of them flawlessly, having a chronic illness represents an additional hurdle. Utmost, adolescents with a chronic health condition have to foster an identity in which their illness is part of who they are but, of course, it should not define them. For adolescents who experienced health problems early in life, or for those newly diagnosed, the bereavement/grief of a life without illness may be difficult to overcome. Several studies have focused on coping strategies facing chronic conditions (over 400 subtypes have been identified) and those that adolescents and their families use to tackle the stressors related to chronic conditions have recently been reviewed (Compas et al. 2012). Using personal or interpersonal resources such as emotional ventilation/avoidance to deal with stressors related to their chronic condition is just a few example of what coping strategies may be used. While acting on or adapting to the source of stress results in better outcomes, denying chronic conditions or their consequences are associated with poorer global adjustment.

Family

Parents play a key role in the development of all youths, and this is also true for those with chronic conditions. Fathers and mothers, however, do not take care of their child's chronic condition in the same way. In most cases, mothers concentrate on day-to-day activities such as taking their child to the doctor or to therapy or making sure that the child takes the medication. Fathers for their part tend to concentrate on work. Mothers often have to stop or reduce their work activity when the child is diagnosed. The father becomes the only breadwinner. However, there is no evidence that this situation results in a higher divorce rate than among parents of healthy adolescents (Moreira et al. 2013). Nevertheless, even if the divorce rate is not higher, marital distress is more common. It may be that the parents stay together for the sake of the child. Unfortunately, in families where the child dies, the divorce rate is extremely high.

Friends

Friends are extremely important during adolescence, to the point that when young people are diagnosed with a chronic condition during the teen years, the first question they ask is how it will interfere with their social life. It is, however, clear that the chance to participate in their peers' activities will be limited by the severity of the condition and the treatment needs (Schmidt et al. 2003). Friends are so important at this age that when a relationship does not go well, and it affects both their psychological health and treatment (Helgeson et al. 2007). A study carried out in New Zealand concludes that when the chronic condition affects socialization, the rate of depression reaches 40 %, compared to 9 % among healthy peers (Denny et al. 2014).

School

Chronically ill adolescents are more likely to miss school (Newacheck et al. 1998), in part because they are more likely to skip classes (Hogan et al. 2000). In spite of this, it is not clear whether this fact has an effect on their academic performance or not. Nevertheless, compared to their healthy counterparts, they are less likely to: finish mandatory schooling, pursue university studies, be employed, be well-oriented academically and professionally, and, in the long term, be economically secured (LeBlanc et al. 2003;

Maslow et al. 2011b; Champaloux and Young 2015). Youths with chronic conditions are less likely to reach their full potential, and compared to their healthy peers, they have lower odds of graduating from high school (Maslow et al. 2011a) or college and being employed and higher odds of receiving public assistance, and lower income (Maslow et al. 2011a, b).

Mental Health

Neuropsychiatric disorders are an important contributor of disability-adjusted life years (DALYs) worldwide for people aged 10–24 years (Gore et al. 2011). Therefore, mental health disorders should be seen to be as relevant as the other chronic health conditions. DALYs are a measure of the years of healthy life lost due to ill health, disability, or premature death. In spite of everything, adolescents with chronic illnesses report higher levels of anxiety than their peers (Pao and Bosk 2010). For example, among adolescents having survived cancer, between 10 and 35 % met criteria for lifetime post-traumatic stress syndrome (PTSD) (Pelcovitz et al. 1998; Ozono et al. 2006). Adolescents with chronic conditions are also known for greater isolation and being bullied than the others (Pittet et al. 2009). As one may believe that adolescent with frank physical disabilities may present with the most struggle, it is not the case. In fact, some studies have shown that the less visible is a chronic condition, the more distress there is (Suris et al. 1996). A possible explanation to this situation is that adolescents with visible conditions have greater support from their peers in comparison with those who do not seem to have health problems. Moreover, when the condition is not visible, it is always difficult to find the right moment to tell your friends as the worry about being rejected appears.

Risky Behaviors

There is evidence in the literature (Suris and Parera 2005; Suris et al. 2008; Nylander et al. 2013) that adolescents with chronic conditions are as (or even more) likely to engage in risk behaviors than their healthy peers (see Table 14.1).

When substance use among young people with chronic conditions is examined, their patterns of use differ from their healthy peers. Smoking tobacco, as an example, for some adolescents with a chronic disease (such as cystic fibrosis and sickle cell disease Britto et al. 1998), diabetes (Martínez-Aguayo et al. 2007), or congenital heart disease (Reid et al. 2008), prevalence rates are lower than those observed among healthy controls. This lower rate of use, however, seems to decrease with age (Martínez-Aguayo et al. 2007). Then again, among youth suffering from diseases such as asthma (Precht et al. 2003; Hublet et al. 2007) or cancer (Clawson et al.

Table 14.1 Comparison between adolescents with chronic conditions and their healthy peers

	Chronic conditions (N = 760) (%)	Controls (N = 6493) (%)
Daily smoking	43.4	37.1
Alcohol misuse (drunkenness episode)	31.7	30.5
Cannabis use	40.0	33.9
Other illegal drug use	10.1	7.1
Early sexual intercourse (<15 years)	10.0	7.8
Eating disorder	7.2	5.0
Violent acts	20.3	15.9
Antisocial acts	35.7	28.3

Source Suris et al. (2008)

Table 14.2 Prevalence in the use of different substances among youths with specific chronic conditions and comparison with healthy controls

Author (year)	Disease (substance use definition)	Age group	Chronic disease (%)	Controls (%)
Tobacco				
Britto et al. (1998)	Cystic fibrosis (ever) Sickle cell disease (ever) Cystic fibrosis (last 30 days) Sickle cell disease (last 30 days)	12–19 years	21.1 30.0 2.6 6.5	53.3 42.9 29.6 13.1
Hublet et al. (2007)	Asthma (daily)	15.5 years	20.5	17.9
Martinez-Aguayo et al. (2007)	Diabetes mellitus (last 30 days)	13–20 years	30.1	39.2
Reid et al. (2008)	Congenital heart disease (last 30 days)	16–18 years 19–20 years	13 20	31 24
Clawson et al. (2015)	Cancer (ever)	10–18 years	28.1	25.3
Nylander et al. (2013)	Various diseases (current)	Males 15 years Females	29 25	19 20
Alcohol				
Britto et al. (1998)	Cystic fibrosis (binge last 30 days) Sickle cell disease (binge last 30 days)	12–19 years	18.0 2.9	35.3 18.4
Hublet et al. (2007)	Asthma (been drunk $\geq$4 times)	15.5 years	23.8	21.4
Martinez-Aguayo et al. (2007)	Diabetes mellitus (last 30 days)	13–20 years	27.7	37.9
Reid et al. (2008)	Congenital heart disease (binge drinking last 30 days)	16–18 years 19–20 years	22 44	36 43
Nylander et al. (2013)	Various diseases (drunkenness last 30 days)	Males 15 years Females	35 28	29 23
Cannabis				
Britto et al. (1998)	Cystic fibrosis (ever) Sickle cell disease (ever)	12–19 years	9.7 30.0	16.8 25.4
Hublet et al. (2007)	Asthma ($\geq$6 times in last year)	15.5 years	12.8	10.1
Martinez-Aguayo et al. (2007)	Diabetes mellitus (last 30 days)	13–20 years	4.8	6.7
Reid et al. (2008)	Congenital heart disease (last 30 days)	16–18 years 19–20 years	12 18	30 20

2015), rates are similar or even higher than among healthy controls. Similar results are observed for alcohol misuse and cannabis use (see Table 14.2).

When other risk behaviors such as unprotected sexual behavior (Suris and Parera 2005; Charron-Prochownik et al. 2006) or early sexual debut (Nylander et al. 2013; Britto et al. 1998) are analyzed, chronically ill adolescents also show higher prevalence rates of these behaviors, in most cases. The same applies to eating behaviors (Nylander et al. 2013; Ackard et al. 2008) and violent or criminal acts (Suris et al. 2008; Nylander et al. 2013). Overall, adolescents suffering from chronic conditions also report more concurring risk behaviors than their healthy counterparts (Suris et al. 2008; Nylander et al. 2013) (see Table 14.3).

Prevention of Risky Behaviors

Even though there are more similarities than differences in risk behaviors between chronically ill adolescents and their healthy peers, chronically ill adolescents are less likely to receive counseling, guidance, or prevention messages than their healthy peers. Britto et al. (1999) were the first ones to notice that adolescents with

Table 14.3 Clustering of risk behaviors

Suris et al. (2008) study	Chronic conditions (%)		Controls (%)	
No risk behavior	25.1		31.8	
1 behavior	21.3		22.3	
2 behaviors	16.3		17.5	
3 behaviors	15.4		13.4	
4 behaviors or more	21.8		15.1	
Nylander et al. (2013) study	Chronic conditions (%)		Controls (%)	
	Males (%)	Females (%)	Males (%)	Females (%)
No risk behavior	33	40	45	53
1 behavior	20	23	22	22
2–3 behaviors	27	20	20	18
4 behaviors or more	20	17	12	7

chronic diseases (cystic fibrosis and sickle cell disease) rarely received health-promoting or risk behavior preventing messages from their primary care provider. Similarly, Bruner and associates (2011) reported that only a minority of pediatric nephrologists advise their smoking patients with chronic kidney disease about the risks of smoking. Furthermore, Regber and Berg-Kelly (2007) found that smoking adolescents with type I diabetes rarely named their diabetes care team as a resource regarding information on the dangers of diabetes and smoking or as a resource for help to quit tobacco. Finally, a study carried out in Switzerland among adult specialist physicians concluded that they rarely discussed substance use or sexuality with their young patients. In 54 % of the cases, physicians reported that they did not have time alone (without the parents in the room) with their patients (Suris et al. 2009). Not seeing their patient alone is an important handicap both for asking the right questions and for giving appropriate guidance and counseling.

The Medical and Public Health Response

Health providers play a central role in the treatment of adolescents with chronic health conditions. Additionally, the way health providers interact with their patient will mark, in great part, the adolescent's behavior toward the chronic condition. Having a positive behavior toward adolescent patients, being person-centered and not only disease-centered, inquiring beyond purely medical issues (such as asking about schooling, family, and friends' support), and, overall, treating them as any other teen will help create a positive relationship. Simple things such as the same provider seeing the patient over time (to stop explaining once again their disease history), taking time to discuss issues, and allowing privacy (such as being seen without the parents) are highly valued by young patients (Beresford and Sloper 2003). Moreover, support and motivation from the provider is a predictor of good adherence to treatment. Finally, by reporting that pediatrics residents were more comfortable than internal medicine residents in caring for most patients with chronic childhood-onset illness underscores the importance of specifically addressing needs of youths with chronic conditions during the health professionals' training (Patel and O'Hare 2010).

Healthcare Transition

As youths with chronic conditions survive into adulthood, they are expected to move from pediatric to adult healthcare services. This process is called transition. The Society for

Adolescent Health and Medicine [SAHM] states that "The goals of an organized, coordinated transition to adult care for young people with chronic conditions are: to optimize health and to facilitate each young person's attaining his or her maximum potential" (Rosen et al. 2003). However, although there are young people with chronic health conditions who make the transition to adult care successfully, others experience serious gaps in care, especially those with more complex conditions or with neurologic ones (Bloom et al. 2012). Transition is a high-risk period associated with increases in hospital admissions and death (de Montalembert and Guitton 2013) and a decline in health status (Okumura et al. 2013), and this represents an important economic burden for the healthcare system and society overall. Some studies indicate that only a minority (22–47 %) of young adults have experienced a successful transition from pediatric to adult care (Oswald et al. 2013; Reid et al. 2004), while another study found that failed transitions represent 32 % of cases (Andemariam et al. 2014). Nevertheless, there is hope. Evidence indicates that transition programs make a difference. In a pilot study carried out in Switzerland (Suris et al. 2015), young adults who discussed the transition to adult care with their pediatric specialist were significantly more likely to have felt accompanied during the transfer. They were also more likely to have consulted the adult specialist, hence experiencing a continuity of care. Young people going through transition programs have higher satisfaction, higher perceived health status, independence, and emotional and physical quality of life (Cramm et al. 2013; Chaudhry et al. 2013). However, another study found that young people who went thought a transition program did not seem to be less anxious (Chaudhry et al. 2013). Successful transition programs are needed (Kaufmann et al. 2013) because the risks for poor clinical outcomes and increased healthcare costs during transition increase with poor preparation, planning, communication, and coordination of care (Cooley 2013).

Healthcare transition should start in early adolescence and end in young adulthood. A process can be divided into three parts: a preparation phase in pediatric care, a transfer phase from pediatric to adult services, and an engagement phase in adult services (Gleeson and Turner 2011).

- For the preparation phase in pediatric care, Lotstein et al. (2009) describe four components that would define a good preparation for transition: (1) discussing the shift to adult provider; (2) discussing future healthcare needs; (3) discussing changes in health insurance; and (4) caretaker(s) encouraging the patient to take responsibility for her/his care needs.
- The transfer phase is key to the transition process as it is the part that connects pediatric and adult care and, hence, assures continuity of care. Continuity of care is the critical endpoint as health outcomes are the main focus of transition programs (Crowley et al. 2011), and patients who are lost to follow-up after transferring to adult care show higher risk of hospitalization with its important cost implications and increasing risk of mortality (Gill et al. 2014).
- Finally, the engagement phase in adult services implies that the patient will build a trustworthy relationship with the adult care team. Gleeson et al. (2012) conclude that attending at least the first two appointments in adult care could be considered an indicator of reasonable engagement. Evidence suggests that when the process is not successful, patients tend to change their healthcare provider at least once (Busse et al. 2007).

The Core Component of Transition Programs

Health professionals and stakeholders now recognized the need to guide adolescents with chronic conditions and their families in the transfer from the pediatric to the adult healthcare,

setting safely and assuring a continuity of care of the young person. In that sense, transfers are common, but transition programs are rare, highlighting their importance (Paul et al. 2013). Several national medical associations have stated some essential features for proper transition (Blum et al. 1993—SAHM; Canadian Pediatric Society [CPS] 2007; American Academy of Pediatrics [AAP], American Academy of Family Physicians [AAFP], and American College of Physicians-American Society of Internal Medicine [ACP-ASIM] 2002), with some differences mainly owing to regional issues.

These institutions and others worldwide have paved the way by integrating these elements in distinct transition programs. In these models, planning, interdisciplinary coordination, and individualized care are keys to providing the best care. Specific teams in transition clinics address emotional, physical, and social issues regardless of the underlying medical condition, which is one option for providing integrated care. Another model is condition/subspecialty specific. This approach is used because many adolescents and young adults present with similar needs and experiences with their chronic condition. Overall, both seem to provide the same level of services.

Accordingly, Box 2 lists core elements that a pediatric facility should employ to provide a transition program adapted to young people with special healthcare needs according to a national initiative in USA called Got Transition. Through the Center for Health Care Transition Web site, an up-to-date review of the best practices is available, as well as information on how to train transition facilitators (http://www.gottransition.org/).

Box 2: Six Core Elements of Healthcare Transition

1. Transition Policy
   - Develop a transition policy/statement with input from youth and families that describes the practice's approach to transition, including privacy and consent information.
   - Educate all staff about the practice's approach to transition, the policy/statement, the Six Core Elements, and distinct roles of the youth, family, and pediatric and adult healthcare team in the transition process, taking into account cultural preferences.
   - Post policy and share/discuss with youth and families, beginning at age 12–14, and regularly review as part of ongoing care.
2. Transition Tracking and Monitoring
   - Establish criteria and process for identifying transitioning youth and enter their data into a registry.
   - Utilize individual flow sheet or registry to track youth's transition progress with the Six Core Elements.
   - Incorporate Six Core Elements into clinical care process, using electronic health records if possible.
3. Transition Readiness
   - Conduct regular transition readiness assessments, beginning at age 14, to identify and discuss with youth and parent/caregiver their needs and goals in self-care.
   - Jointly develop goals and prioritized actions with youth and parent/caregiver and document regularly in a plan of care.
4. Transition Planning
   - Develop and regularly update the plan of care, including readiness assessment findings, goals and prioritized actions, medical summary and emergency care plan, and, if needed, a condition fact sheet and legal documents.
   - Prepare youth and parent/caregiver for adult approach to care at age 18, including legal changes in decision

making and privacy and consent, self-advocacy, and access to information.
- Determine need for decision-making supports for youth with intellectual challenges and make referrals to legal resources.
- Plan with youth and parent/caregiver for optimal timing of transfer. If both primary and subspecialty care are involved, discuss optimal timing for each.
- Obtain consent from youth/guardian for release of medical information.
- Assist youth in identifying an adult provider and communicate with selected provider about pending transfer of care.
- Provide linkages to insurance resources, self-care management information, and culturally appropriate community supports.

5. Transfer of Care
   - Confirm date of first adult provider appointment.
   - Transfer young adult when his/her condition is stable.
   - Complete transfer package, including final transition readiness assessment, plan of care with transition goals and pending actions, medical summary and emergency care plan, and, if needed, legal documents, condition fact sheet, and additional provider records.
   - Prepare letter with transfer package, send to adult practice, and confirm adult practice's receipt of transfer package.
   - Confirm with adult provider the pediatric provider's responsibility for care until young adult is seen in adult setting.
6. Transfer Completion
   - Contact young adult and parent/caregiver 3–6 months after last pediatric visit to confirm transfer of responsibilities to adult practice and elicit feedback on experience with transition process.
   - Communicate with adult practice confirming completion of transfer and offer consultation assistance, as needed.
   - Build ongoing and collaborative partnerships with adult primary and specialty care providers.

Adapted from www.gottransition.org.

In conjunction with administrative matters, transition is mainly about knowledge and skill acquisitions. Guiding adolescents and families through that path, knowing which are ready and able, requires insight but most importantly a quality assessments. Transition readiness questionnaires have been created to assist care coordinators in providing the right training for the right people according to their progress. The TRAQ questionnaire (Wood et al. 2014) (see Box 3) and the Am I ON TRAC questionnaire (Moynihan et al. 2015) are among those tools.

Box 3: The following questions are found in version 5.0 of the Transition Readiness Assessment Questionnaire (TRAQ)

Managing Medications
- Do you fill a prescription if you need to?
- Do you know what to do if you are having a bad reaction to your medications?
- Do you take medications correctly and on your own?
- Do you reorder medications before they run out?

Appointment Keeping
- Do you call the doctor's office to make an appointment?
- Do you follow-up on any referral for tests or checkups or laboratories?

- Do you arrange for your ride to medical appointments?
- Do you call the doctor about unusual changes in your health (e.g., allergic reactions)?
- Do you apply for health insurance if you lose your current coverage?
- Do you know what your health insurance covers?
- Do you manage your money and budget household expenses (e.g., use checking/debit card)?

Tracking Health Issues

- Do you fill out the medical history form, including a list of your allergies?
- Do you keep a calendar or list of medical and other appointments?
- Do you make a list of questions before the doctor's visit?
- Do you get financial help with school or work?

Talking with Providers

- Do you tell the doctor or nurse what you are feeling?
- Do you answer questions that are asked by the doctor, nurse, or clinic staff?

Managing Daily Activities

- Do you help plan or prepare meals/food?
- Do you keep home/room clean or cleanup after meals?
- Do you use neighborhood stores and services (e.g., grocery stores and pharmacy stores)?
- Scoring Algorithms

The TRAQ scores produced include an overall score and a subscale score for each of the five subscales. The overall score and the subscale scores are calculated simply by taking the average score across the items in the questionnaire (or subscale). Each item is scored 1–5, with 1 being assigned for responses of "No, I do not know how" and a score of 5 assigned for responses of "Yes, I always do this when I need to."

Adapted from Wood et al. (2014).

Specific Issue: Adherence

For most adolescents with a chronic condition, increasing independence will result in growing autonomy. For some, however, the condition may hinder both independence and autonomy (i.e., severe cerebral palsy). For others, only the urge for independence shows up, and denial of the necessity to take care of their medical condition will result in decreased adherence to treatment (for reasons such as side effects, too many medications, and wanting to be normal) (Dziuban et al. 2010). A systematic review on pediatric healthcare use related to adherence described that while over 60 % of the children and adolescents with a chronic condition are prescribed medication, between 50 and 88 % of them are non-adherent to their prescribed regiment (McGrady and Hommel 2013). On top of common means to increase adherence to treatment (i.e., proper explanation on the purpose of a medication, its use, and possible adverse effects), motivational interviewing has shown small-to-moderate effect in 37 studies analyzing its influence among individuals below 18 years of age (Gayes and Steele 2014). Adherence must be seen as a continuum instead of a dichotomy, and this implies that rates can vary largely between individuals depending on the disease or disorder. Kyngäs (2000a, b, c) concluded that overall 23 % of adolescents are adherence, 60 % have satisfactory adherence, and 17 % are poorly adherent.

Conclusion

In summary, the literature reflects that overall adolescents living with a chronic condition are also facing the same personal issues and difficulties as other adolescents. Studies also confirm that having a chronic condition during adolescence is not a protective factor. For these reasons, adolescents living with a chronic condition have the need and the right to receive the same guidance, counseling, and prevention messages than any other youth. We must remember that

independently of their condition, they are above all adolescents and they will behave as such.

References

Ackard, D., Vik, N., Neumark-Sztainer, D., Schmitz, K., Hannan, P., & Jacobs, D. (2008). Disordered eating and body dissatisfaction in adolescents with type 1 diabetes and a population-based comparison sample: Comparative prevalence and clinical implications. *Pediatric Diabetes, 9*(4pt1), 312–319. doi:10.1111/j.1399-5448.2008.00392.x

American Academy of Pediatrics, American Academy of Family Physicians, & American College of Physicians-American Society of Internal Medicine. (2002). A consensus statement on health care transitions for young adults with special health care needs. *Pediatrics*, *110*(Supplement 3), 1304–1306.

Andemariam, B., Owarish-Gross, J., Grady, J., Boruchov, D., Thrall, R. S., & Hagstrom, J. N. (2014). Identification of risk factors for an unsuccessful transition from pediatric to adult sickle cell disease care. *Pediatric Blood & Cancer, 61*(4), 697–701. doi:10.1002/pbc.24870

Beresford, B., & Sloper, P. (2003). Chronically ill adolescents' experiences of communicating with doctors: A qualitative study. *Journal of Adolescent Health, 33*(3), 172–179. doi:10.1016/s1054-139x(03)00047-8

Bloom, S., Kuhlthau, K., Van Cleave, J., Knapp, A., Newacheck, P., & Perrin, J. (2012). Health care transition for youth with special health care needs. *Journal of Adolescent Health, 51*(3), 213–219. doi:10.1016/j.jadohealth.2012.01.007

Blum, R., Garell, D., Hodgman, C., Jorissen, T., Okinow, N., Orr, D., et al. (1993). Transition from child-centered to adult health-care systems for adolescents with chronic conditions. *Journal of Adolescent Health, 14*(7), 570–576. doi:10.1016/1054-139x(93)90143-d

Britto, M. T., Garrett, J. M., Dugliss, M. A., Daeschner, C. W., Johnson, C. A., Leigh, M. W., et al. (1998). Risky behavior in teens with cystic fibrosis or sickle cell disease: A multicenter study. *Pediatrics, 101*(2), 250–256. doi:10.1542/peds.101.2.250

Britto, M., Garrett, J., Dugliss, M., Johnson, C., Majure, J., & Leigh, M. (1999). Preventive services received by adolescents with cystic fibrosis and sickle cell disease. *Archives of Pediatrics and Adolescent Medicine, 153*(1), 27–32. doi:10.1001/archpedi.153.1.27

Bruner, K., Chand, D., Patel, H., Stolfi, A., & Omoloja, A. (2011). Chronic kidney disease, pediatric nephrologists, and tobacco counseling: Perceptions and practice patterns. A study from the midwest pediatric nephrology consortium. *The Journal of Pediatrics, 159*(1), 155–157. doi:10.1016/j.jpeds.2011.03.024

Busse, F., Hiermann, P., Galler, A., Stumvoll, M., Wiessner, T., Kiess, W., et al. (2007). Evaluation of patients' opinion and metabolic control after transfer of young adults with type 1 diabetes from a pediatric diabetes clinic to adult care. *Hormone Research in Paediatrics, 67*(3), 132–138. doi:10.1159/000096583

Canadian Pediatric Society. (2007). Transition to adult care for youth with special health care needs.*Paediatrics & Child Health, 12*(9), 785–788.

Champaloux, S., & Young, D. (2015). Childhood chronic health conditions and educational attainment: A social ecological approach. *Journal of Adolescent Health, 56*(1), 98–105. doi:10.1016/j.jadohealth.2014.07.016

Charron-Prochownik, D., Sereika, S. M., Falsetti, D., Wang, S. L., Becker, D., Jacober, S., et al. (2006). Knowledge, attitudes and behaviors related to sexuality and family planning in adolescent women with and without diabetes. *Pediatric Diabetes*, *7*(5), 267–273. doi:10.1111/j.1399-5448.2006.00197.x

Chaudhry, S. R., Keaton, M., & Nasr, S. Z. (2013). Evaluation of a cystic fibrosis transition program from pediatric to adult care. *Pediatric Pulmonology, 48*(7), 658–665. doi:10.1002/ppul.22647

Clawson, A., Nicholson, J., McDermott, M., Klosky, J., & Tyc, V. (2015). Tobacco use and exposure among youth undergoing cancer treatment. *Journal of Pediatric Health Care, 29*(1), 80–87. doi:10.1016/j.pedhc.2014.07.004

Compas, B., Jaser, S., Dunn, M., & Rodriguez, E. (2012). Coping with chronic illness in childhood and adolescence. *Annual Review of Clinical Psychology, 8*(1), 455–480. doi:10.1146/annurev-clinpsy-032511-143108

Cooley, W. (2013). Adolescent health care transition in transition. *JAMA Pediatrics, 167*(10), 897–899. doi:10.1001/jamapediatrics.2013.2578

Cramm, J., Strating, M., Sonneveld, H., & Nieboer, A. (2013). The longitudinal relationship between satisfaction with transitional care and social and emotional quality of life among chronically ill adolescents. *Applied Research in Quality of Life, 8*(4), 481–491. doi:10.1007/s11482-012-9209-3

Crowley, R., Wolfe, I., Lock, K., & McKee, M. (2011). Improving the transition between paediatric and adult healthcare: A systematic review. *Archives of Disease in Childhood, 96*(6), 548–553. doi:10.1136/adc.2010.202473

de Montalembert, M., & Guitton, C. (2013). Transition from paediatric to adult care for patients with sickle cell disease. *British Journal of Haematology, 164*(5), 630–635. doi:10.1111/bjh.12700

Denny, S., de Silva, M., Fleming, T., Clark, T., Merry, S., Ameratunga, S., et al. (2014). The prevalence of chronic health conditions impacting on daily functioning and the association with emotional well-being among a national sample of high school students. *Journal of Adolescent Health, 54*(4), 410–415. doi:10.1016/j.jadohealth.2013.09.010

Dziuban, E. J., Saab-Abazeed, L., Chaudhry, S. R., Streetman, D. S., & Nasr, S. Z. (2010). Identifying barriers to treatment adherence and related attitudinal patterns in adolescents with cystic fibrosis. *Pediatric Pulmonology, 45*(5), 450–458. doi:10.1002/ppul.21195

Gayes, L., & Steele, R. (2014). A meta-analysis of motivational interviewing interventions for pediatric health behavior change. *Journal of Consulting and Clinical Psychology, 82*(3), 521–535. doi:10.1037/a0035917

Gill, G., Nayak, A., Wilkins, J., Hankey, J., Raffeeq, P., Varughese, G., et al. (2014). Challenges of emerging adulthood-transition from paediatric to adult diabetes. *World Journal of Diabetes, 5*(5), 630–635. doi:10.4239/wjd.v5.i5.630

Gleeson, H., Davis, J., Jones, J., O'Shea, E., & Clayton, P. (2012). The challenge of delivering endocrine care and successful transition to adult services in adolescents with congenital adrenal hyperplasia: experience in a single centre over 18 years. *Clinical Endocrinology, 78*(1), 23–28. doi:10.1111/cen.12053

Gleeson, H., & Turner, G. (2011). Transition to adult services. *Archives of Disease in Childhood—Education and Practice, 97*(3), 86–92. doi:10.1136/archdischild-2011-300261

Gore, F. M., Bloem, P. J., Patton, G. C., Ferguson, J., Joseph, V., Coffey, C., et al. (2011). Global burden of disease in young people aged 10–24 years: A systematic analysis. *The Lancet, 377*(9783), 2093–2102. doi:10.1016/s0140-6736(11)60512-6

Helgeson, V., Snyder, P., Escobar, O., Siminerio, L., & Becker, D. (2007). Comparison of adolescents with and without diabetes on indices of psychosocial functioning for three years. *Journal of Pediatric Psychology, 32*(7), 794–806. doi:10.1093/jpepsy/jsm020

Hogan, A., McLellan, L., & Bauman, A. (2000). Health promotion needs of young people with disabilities-a population study. *Disability and Rehabilitation, 22*(8), 352–357. doi:10.1080/096382800296593

Hublet, A., De Bacquer, D., Boyce, W., Godeau, E., Schmid, H., Vereecken, C., et al. (2007). Smoking in young people with asthma. *Journal of Public Health, 29*(4), 343–349. doi:10.1093/pubmed/fdm047

Kaufmann Rauen, K., Sawin, K., Bartelt, T., Waring, W., Orr, M., & Corey O' Connor R. (2013). Transitioning adolescents and young adults with a chronic health condition to adult healthcare—An exemplar program. *Rehabilitation Nursing, 38*(2), 63–72. doi:10.1002/rnj.74

Kyngäs, H. (2000a). Compliance of adolescents with chronic disease. *Journal of Clinical Nursing, 9*(4), 549–556. doi:10.1046/j.1365-2702.2000.00368.x

Kyngäs, H. (2000b). Compliance of adolescents with diabetes. *Journal of Pediatric Nursing, 15*(4), 260–267. doi:10.1053/jpdn.2000.6169

Kyngäs, H. (2000c). Compliance with health regimens of adolescents with epilepsy. *Seizure, 9*(8), 598–604. doi:10.1053/seiz.2000.0470

LeBlanc, L., Goldsmith, T., & Patel, D. (2003). Behavioral aspects of chronic illness in children and adolescents. *Pediatric Clinics of North America, 50*(4), 859–878. doi:10.1016/s0031-3955(03)00072-5

Lotstein, D., Ghandour, R., Cash, A., McGuire, E., Strickland, B., & Newacheck, P. (2009). Planning for health care transitions: Results from the 2005–2006 national survey of children with special health care needs. *Pediatrics, 123*(1), e145–e152. doi:10.1542/peds.2008-1298

Martínez-Aguayo, A., Araneda, J., Fernandez, D., Gleisner, A., Perez, V., & Codner, E. (2007). Tobacco, alcohol, and illicit drug use in adolescents with diabetes mellitus. *Pediatric Diabetes, 8*(5), 265–271. doi:10.1111/j.1399-5448.2007.00307.x

Maslow, G., Haydon, A., Ford, C., & Halpern, C. (2011a). Young adult outcomes of children growing up with chronic illness. *Archives of Pediatrics & Adolescent Medicine, 165*(3). doi:10.1001/archpediatrics.2010.287

Maslow, G., Haydon, A., McRee, A., Ford, C., & Halpern, C. (2011b). Growing up with a chronic illness: Social success, educational/vocational distress. *Journal of Adolescent Health, 49*(2), 206–212. doi:10.1016/j.jadohealth.2010.12.001

McGrady, M., & Hommel, K. (2013). Medication adherence and health care utilization in pediatric chronic illness: A systematic review. *Pediatrics, 132*(4), 730–740. doi:10.1542/peds.2013-1451

Moreira, H., Frontini, R., Bullinger, M., & Canavarro, M. (2013). Caring for a child with type 1 diabetes: Links between family cohesion, perceived impact, and parental adjustment. *Journal of Family Psychology, 27*(5), 731–742. doi:10.1037/a0034198

Moynihan, M., Saewyc, E., Whitehouse, S., Paone, M., & McPherson, G. (2015). Assessing readiness for transition from paediatric to adult health care: Revision and psychometric evaluation of the Am I ON TRAC for Adult Care questionnaire. *Journal of Advanced Nursing, 71*(6), 1324–1335. doi:10.1111/jan.12617

Newacheck, P. W., Strickland, B., Shonkoff, J. P., Perrin, J. M., McPherson, M., McManus, M., et al. (1998). An epidemiologic profile of children with special health care needs. *Pediatrics*, *102*(1), 117–123. doi:10.1542/peds.102.1.117

Nylander, C., Seidel, C., & Tindberg, Y. (2013). The triply troubled teenager—Chronic conditions associated with fewer protective factors and clustered risk behaviours. *Acta Paediatrica, 103*(2), 194–200. doi:10.1111/apa.12461

Okumura, M., Hersh, A., Hilton, J., & Lotstein, D. (2013). Change in health status and access to care in young adults with special health care needs: Results

from the 2007 National Survey of Adult Transition and Health. *Journal of Adolescent Health, 52*(4), 413–418. doi:10.1016/j.jadohealth.2012.08.005

Oswald, D. P., Gilles, D. L., Cannady, M. S., Wenzel, D. B., Willis, J. H., & Bodurtha, J. N. (2013). Youth with special health care needs: Transition to adult health care services. *Maternal and Child Health Journal, 17*(10), 1744–1752. doi:10.1007/s10995-012-1192-7

Ozono, S., Saeki, T., Mantani, T., Ogata, A., Okamura, H., & Yamawaki, S. (2006). Factors related to posttraumatic stress in adolescent survivors of childhood cancer and their parents. *Supportive Care in Cancer, 15*(3), 309–317. doi:10.1007/s00520-006-0139-1

Pao, M., & Bosk, A. (2010). Anxiety in medically ill children/adolescents. *Depression and Anxiety, 28*(1), 40–49. doi:10.1002/da.20727

Patel, M. S., & O'Hare, K. (2010). Residency training in transition of youth with childhood-onset chronic disease. *Pediatrics, 126*(Supplement 3), S190–S193. doi:10.1542/peds.2010-1466P

Paul, M., Ford, T., Kramer, T., Islam, Z., Harley, K., & Singh, S. (2013). Transfers and transitions between child and adult mental health services. *The British Journal of Psychiatry, 202*(s54), s36–s40. doi:10.1192/bjp.bp.112.119198

Pelcovitz, D., Libov, B., Mandel, F., Kaplan, S., Weinblatt, M., & Septimus, A. (1998). Posttraumatic stress disorder and family functioning in adolescent cancer. *Journal of Traumatic Stress, 11*(2), 205–221. doi:10.1023/a:1024442802113

Pittet, I., Berchtold, A., Akre, C., Michaud, P., & Suris, J. (2009). Are adolescents with chronic conditions particularly at risk for bullying? *Archives of Disease in Childhood, 95*(9), 711–716. doi:10.1136/adc.2008.146571

Precht, D., Keiding, L., & Madsen, M. (2003). Smoking patterns among adolescents with asthma attending upper secondary schools: A community-based study. *Pediatrics, 111*(5), e562–e568. doi:10.1542/peds.111.5.e562

Regber, S., & Kelly, K. (2007). Missed opportunities—Adolescents with a chronic condition (insulin-dependent diabetes mellitus) describe their cigarette-smoking trajectories and consider health risks. *Acta Paediatrica, 96*(12), 1770–1776. doi:10.1111/j.1651-2227.2007.00566.x

Reid, G., Irvine, M., McCrindle, B., Sananes, R., Ritvo, P., Siu, S., et al. (2004). Prevalence and correlates of successful transfer from pediatric to adult health care among a cohort of young adults with complex congenital heart defects. *Pediatrics, 113*(3), e197–e205. doi:10.1542/peds.113.3.e197

Reid, G., Webb, G., McCrindle, B., Irvine, M., & Siu, S. (2008). Health behaviors among adolescents and young adults with congenital heart disease. *Congenital Heart Disease, 3*(1), 16–25. doi:10.1111/j.1747-0803.2007.00161.x

Rosen, D., Blum, R., Britto, M., Sawyer, S., & Siegel, D. (2003). Transition to adult health care for adolescents and young adults with chronic conditions. *Journal of Adolescent Health, 33*(4), 309–311. doi:10.1016/s1054-139x(03)00208-8

Schmidt, S., Petersen, C., & Bullinger, M. (2003). Coping with chronic disease from the perspective of children and adolescents—A conceptual framework and its implications for participation. *Child: Care, Health and Development, 29*(1), 63–75. doi:10.1046/j.1365-2214.2003.00309.x

Singh, G. K. (2010). *Child mortality in the United States, 1935–2007: Large racial and socioeconomic disparities have persisted over time*. Rockville, MD: U.S. Department of Health and Human Services, Health Resources and Services Administration.

Suris, J., Akré, C., & Rutishauser, C. (2009). How adult specialists deal with the principles of a successful transition. *Journal of Adolescent Health, 45*(6), 551–555. doi:10.1016/j.jadohealth.2009.05.011

Suris, J., Michaud, P., Akre, C., & Sawyer, S. (2008). Health risk behaviors in adolescents with chronic conditions. *Pediatrics, 122*(5), e1113–e1118. doi:10.1542/peds.2008-1479

Suris, J., & Parera, N. (2005). Sex, drugs and chronic illness: Health behaviours among chronically ill youth. *The European Journal of Public Health, 15*(5), 484–488. doi:10.1093/eurpub/cki001

Suris, J., Resnick, M., Cassuto, N., & Blum, R. (1996). Sexual behavior of adolescents with chronic disease and disability. *Journal of Adolescent Health, 19*(2), 124–131. doi:10.1016/1054-139x(95)00282-w

Suris, J., Rutishauser, C., & Akré, C. (2015). Est-ce qu'en discuter fait la différence? Opinions de jeunes adultes atteints de maladies chroniques après avoir été transférés vers des soins pour adultes. *Archives De Pédiatrie, 22*(3), 267–271. doi:10.1016/j.arcped.2014.12.001

Torpy, J. M., Campbell, A., & Glass, R. M. (2010). Chronic diseases of children. *JAMA, 303*(7), 682–682. doi:10.1001/jama.303.7.682

WHO. (2002). *Innovative care for chronic conditions: Building blocks for actions: Global report*. Geneva: World Health Organization.

Wood, D. L., Sawicki, G. S., Miller, M. D., Smotherman, C., Lukens-Bull K., Livingood, W. C., et al. (2014). The Transition Readiness Assessment Questionnaire (TRAQ): Its factor structure, reliability, and validity. *Academic Pediatrics, 14*(4), 415–422. doi:10.1016/j.acap.2014.03.008

Part III

Adolescent Responsive Health and Social Systems

Quality Health Care for Adolescents

15

Valentina Baltag and Susan M. Sawyer

Introduction

As children mature into adolescents and then young adults, the burden of disease they experience and the health risks they face change dynamically with age. In contrast to younger children for whom infectious diseases constitute the major burden of disease, adolescents face a wider set of disorders and health risks that accompany the physical and emotional changes of puberty. For example, accidents and injuries are the greatest cause of death among adolescents (WHO 2014; Patton et al. 2009). Mental health and substance use disorders typically begin to become problematic in the adolescent years, while sexual and reproductive health needs become more significant following puberty (Sawyer et al. 2012). Chronic health conditions also increase in prevalence with age; when grouped together, these constitute a significant burden (Sawyer et al. 2007). Additionally, adolescence is also a time of changing risk, with adolescence being the age of onset of many behaviors that have the capacity to affect health outcomes in adolescence itself (e.g., injuries as a result of alcohol intoxication), into adulthood (e.g., substance abuse) and into the next generation (e.g., fetal alcohol syndrome) (Sawyer et al. 2012). In this context, adolescents and young adults have fundamental needs for acute healthcare services in addition to the role of healthcare services in providing preventatively orientated interventions to this age group.

The extent of psychosocial and neurocognitive development that takes place during the second decade of life heralds different challenges and opportunities for clinicians when caring for adolescents when compared to younger children and older adults (Sawyer et al. 2012). These changes affect how adolescents understand information and what information influences their behaviors. Neurocognitive maturation influences how young people might think about the future yet make decisions in the present. Engaging with new ideas, experimenting with new ways of being and behaving, and responding to different emotions and community expectations is a normal part of adolescence.

Valentina Baltag is staff member of the World Health Organization. The authors alone are responsible for the views expressed in this chapter and they do not necessarily represent the decisions or policies of the World Health Organization.

V. Baltag (✉)
Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland
e-mail: baltagv@who.int

S.M. Sawyer
Centre for Adolescent Health, Royal Children's Hospital; Department of Paediatrics, The University of Melbourne, Melbourne, Australia

S.M. Sawyer
Murdoch Childrens Research Institute, Melbourne, Australia

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_15

Their decision making around health is also shaped by relative inexperience (see Fig. 15.1). Responding to this developmental stage requires clinicians to adopt a communication style that engages young people directly. It also requires clinicians to take a preventive stance within consultations in addition to treating the presenting complaint (Azzopardi et al. 2015). At the very least, in contrast to health consultations with young children where parents are the target of education and health promotion messages from clinicians, during adolescence, young people themselves also need to become the recipient of such messages. Most parents are relatively experienced users of the healthcare system. In contrast, adolescents are novice users of the healthcare system and cannot be assumed to understand how it functions. The rapidly evolving intellectual and emotional development of adolescence opens opportunities for clinicians to directly support and communicate with young people as patients, in addition to continuing to engage and support their parents. Yet, young people's growing capacity to make more autonomous decisions can pose challenges for how clinicians engage with young people more independently of their parents and guardians, especially when this is inconsistent with community attitudes and expectations. Clinicians have obligations to uphold the United Nations Convention on the Rights of the Child that recognizes young people have the legal right to confidential health care, commensurate with growing maturity (Office of the United Nations High Commissioner for Human Rights 1989). A challenge for clinicians is how to help young people, parents, and communities appreciate the value of young people becoming more health literate and having greater autonomy around decisions that affect their health (see Fig. 15.2).

Adolescents experience many barriers to health care. While some of these largely lie outside the health system such as financial barriers, others are more directly the responsibility of healthcare services. For example, time pressures within healthcare services or lack of supportive policies around confidential health care will prevent routine psychosocial assessment of adolescents, a strategy for engaging with young people and identifying important health concerns beyond the presenting complaint. Young people's use of healthcare services can also be highly influenced by social values and attitudes (perceived or real) of their peers, parents, and other adult gatekeepers—including clinicians. Thus, community expectations that unmarried adolescents are not sexually active will function as a barrier to unmarried sexually active adolescents obtaining appropriate health care (e.g., reliable contraception, HIV testing).

Despite adolescents' special health and developmental needs, as a group they have received remarkably little attention within the global public health movements and declarations of the past 30 years. Reports and declarations have emphasized more people-centered care (WHO 2000; Declaration of Alma-Ata 1978), which call for 'Health for All' (WHO 1981) as well as efforts to improve the equity of service provision (The Ottawa Charter for Health Promotion 1986). However, adolescents have failed to benefit as yet (WHO 2014). It is time this changed.

This chapter explores what young people expect from healthcare services. It reviews how healthcare services need to respond differently from historical approaches that have essentially viewed adolescents as simply 'older children' or 'younger adults' and describes the major barriers that adolescents encounter in using healthcare services. It presents how a standards-driven or indicator approach might help improve the quality of care delivered to adolescents and young adults.

Adolescent Perspectives of Quality of Health care

Over the past decade, the framework of adolescent-friendly health care has been used to better orient health care services to the needs of young people. Developed by the World Health Organization, the focus of implementation was primary health care in low-income countries, and was predominantly applied to sexual and reproductive healthcare services (WHO 2002, 2009). Sawyer and colleagues have described the

- Individual-level factors related to the age and stage of development
  - Rapid growth and maturation with puberty (e.g. physical growth, sexual maturation, neurocognitive functioning, emotional maturation)
  - Onset of health-related behaviours and states which signal a wider scope of health risks than in younger children
  - Limited capacity to modify behavior to override risks in the context of intense activities involving peers ("hot cognitions")
  - Limited capacity to perceive long-term health risks that might otherwise influence current behavior's
  - Increasing desire for confidentiality and autonomy in health consultations when compared to younger children
  - Lower health literacy in comparison to adults
  - Greater capacity than children to seek health care independent of parents, yet less experience than adults about when to seek health care
  - Less empowered than adults to claim rights in health care
- Interpersonal level factors
  - Often reliant on adults to transport them to health consultations
  - Often accompanied by parents or other adults, who generally expect to remain present in health consultations
  - Distancing from parents or other adults reduces parents' capacity to understand the inner world of their child and the risks the adolescent may be experiencing (e.g. self harm)

Fig. 15.1 An ecological model of the factors that make adolescent clients unique

- Embarrassment, shame and fear of consequences can reduce adolescents' preparedness to share important information with parents and health-care providers
- Health-care providers function as "gatekeepers" to health resources; their beliefs about the appropriateness or legality of resources for adolescents can reduce access to health-promoting resources (e.g. provision of contraception to unmarried sexually active girls)

➢ Community-level factors

- Many health issues that particularly affect adolescents are highly stigmatized within communities, which may deter adolescents from care seeking
- Adolescents have a lower ability to resist community values and norms which oppose or stigmatize care seeking (e.g. HIV testing for unmarried girls)
- Community values and norms reflect adults views, which may not appreciate the prevalence of adolescent behaviours nor the challenges of behavior change

➢ Organizational and structural factors

- Lack of privacy within health services can be more challenging for adolescents than adults due to adolescents' sensitivity about what others think
- Lack of or insufficient training in adolescent health makes health-care providers less acquainted with the health and social needs of adolescents and their rights
- Limited rights to consent to services
- Limited access to practical resources (e.g. finances, transportation)

Fig. 15.1 (continued)

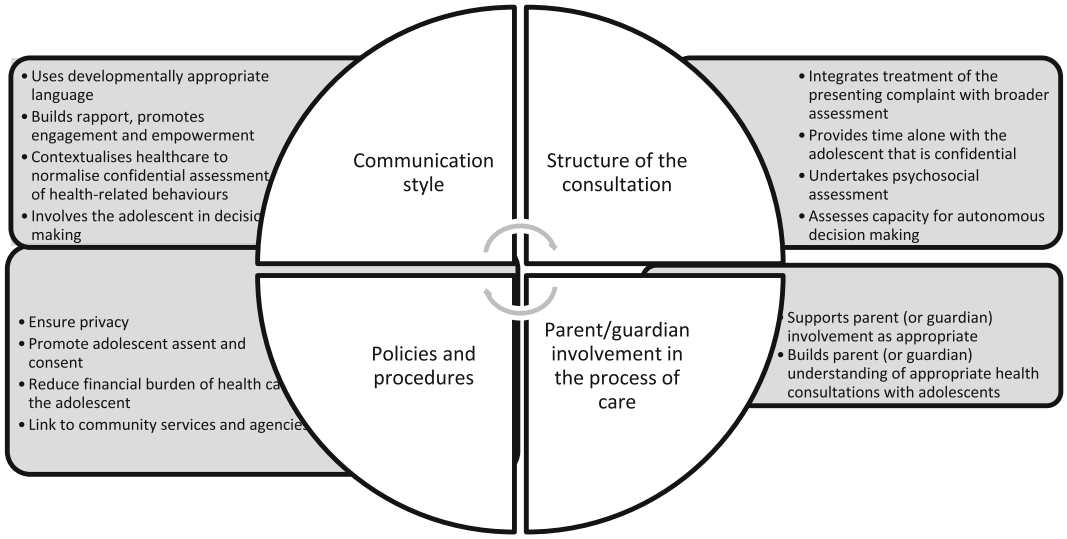


Fig. 15.2 Domains that require special attention in health consultations with adolescents

potential of this framework to be used to promote quality health care to adolescents within specialist services as well as primary care, and within high-income countries as well (Sawyer et al. 2010, 2014; Ambresin et al. 2013). They report that the principles of adolescent-friendly practice are increasingly being described within position papers and service guidance about delivery of quality health care to young people across the world, even if the phrase 'adolescent-friendly health care' is not commonly used.

Adolescent-friendly health care purportedly addresses five domains: equity, effectiveness, accessibility, acceptability, and appropriateness (WHO 2009). Equity of care relates to the right of all young people to obtain quality health care. Effectiveness corresponds to the expected improvement in adolescent health outcomes when care is delivered in the right way at the right time. Accessibility relates to how readily young people are able to obtain health care when they need it, while appropriateness relates to how well the care that is delivered reflects the burden of disease experienced by an individual. The acceptability of healthcare services refers to how well they meet young people's expectations.

Acceptability of healthcare services can only be measured by obtaining young people's views. Yet it is surprising how few adolescent-oriented measures of health care are based on youth self-report (Ambresin et al. 2013). This absence is especially notable given the long-standing acknowledgment through the United Nations Convention on the Rights of the Child of the importance of young people participating in all matters affecting them, including their health (Office of the United Nations High Commissioner for Human Rights 1989).

Ambresin et al. (2013) recently published a systematic review of the adolescent friendliness of healthcare services from the perspective of young people. They set out to extract the major constructs underlying young people's experiences of health care and to identify the core domains and indicators of youth friendliness from the perspective of young people. Identifying studies across high-, middle-, and low-income countries in widely varying health settings, they found that while four different constructs have been used in the literature to explore young people's perspectives on adolescent-friendly health care (satisfaction with health care; patient-centered care; experience of care; and quality of care), there was much overlap of the key domains across these four constructs. Below, we have narrowed the eight core themes suggested by Ambresin et al. (2013) as conceptualizing adolescent-friendly health care

from young people's perspectives into the following six domains.

Accessibility: The most important indicators relate to location and affordability of services.

Staff attitude: An adolescent-friendly clinician is respectful, friendly, supportive, honest, and trustworthy. Trust is a precondition for adolescents to discuss sensitive issues.

Communication: Young people want clinicians who have good listening skills and who can communicate the right amount of information with clarity. Young people want clinicians to use a direct communication style that includes clear technical information without a lecturing tone of voice.

Medical competency: Young people want healthcare providers who have accurate medical knowledge and can provide comprehensive care, defined as regular assessment of their health and developmental status, life events, and personal aspirations. Technical skills are valued, including those related to pain management. Among indicators measuring guideline-driven care, confidentiality, autonomy, and transition to adult health care are the most important for young people.

Age-appropriate environments: Adolescents want welcoming physical spaces and up-to-date health information, together with activities to reduce boredom while waiting. A clean, private environment is a priority, as are short waiting times. Flexibility around appointments is desired to minimize school absence.

Involvement in health care: Young people stress their need to be involved in their own health care.

Ambresin et al. (2013) then suggested that, with the exception of equity (which is arguably intrinsic to adolescent-friendly care), these domains align remarkably well with the World Health Organization (WHO) framework of adolescent-friendly health care (WHO 2009). The domains also align well with the principles of patient-centered care, which emphasize notions of respect, coordination of care, appropriate provision of information to patients, high-quality communication with patients, patient involvement in decisions about care, and the ability of healthcare providers to listen to patient needs (ACSQHC 2011). Distinct findings relate to the need for indicators that define an age-appropriate environment and that articulate, in greater depth, the elements of high-quality communication with young people.

Barriers Faced by Adolescents in Accessing Quality Healthcare Services

Evidence from both high- and low-income countries shows that adolescents and young adults face many barriers that limit or prevent their use of healthcare services (El Damanhur and Abdelhameed 2013; Kennedy 2010; Khalaf et al. 2010; National Research Council and Institute of Medicine 2009; Thrall et al. 2000; Ghafari et al. 2014; AIDS Accountability International 2013).

Access

Financial barriers are particularly challenging for young people. A study that compared healthcare experience and access between young and older adults in 11 high-income countries found that participants aged 18–24 years were more likely than older adults to report financial barriers to receiving recommended care (Hargreaves et al. 2015). Another study commissioned by the World Health Organization showed that financial barriers included both direct costs and wider barriers (Waddington and Sambo 2015). For example, as discussed in Chap. 19, adolescents are deterred more than adults by the direct costs of healthcare services because of their limited access to cash, limited ability to access services independently of family, and the potential for adolescent health needs to be a low priority within the family. Health service barriers include the lack of financial incentives for healthcare services to prioritize adolescent needs in comparison with other age groups. Other financial barriers include limited access to pooled financing through limited eligibility for tax- and insurance-based funding schemes. There are also financial barriers to delivering quality care, such

as when financing schemes conflict with confidentiality. Policies and procedures for claiming healthcare benefits inadvertently expose adolescents to confidentiality breaches through routine communication in the form of explanation of benefits sent to policyholders (who are typically parents) (Sedlander et al. 2015) or when itemized bills are sent to parents.

Healthcare services can also impose barriers to accessing health care as a result of particular policies or procedures. For example, clinicians may restrict adolescents' access to services based on their age, marital status, or their partner's or parent's consent (Calhoun et al. 2013). In a survey of primary care providers conducted by WHO in 2014, over one in four respondents (26 %) said their practice had restrictive policies around age, marital status, or other reasons that might prevent some adolescents from receiving care.

It is also apparent that lack of access to health information and healthcare services disproportionally affects adolescents. Health literacy means more than just being able to read pamphlets or other health information, as important as this capacity is. Rather, health literacy refers to the cognitive and social skills that determine the motivation and ability of an adolescent to gain access to, and to understand and use information in ways that promote and maintain good health (WHO 2015). This includes knowledge and skills about health and disease and their risk factors, and the knowledge and skills required to navigate the health system. Basic health literacy includes timely recognition of the need for healthcare services, sufficient empowerment, and ability to seek advice and care including successfully making appointments, and being able to navigate the inherently complex system of services. Evidence suggests that adolescents' health literacy is largely not sufficient to enable them to effectively use services without support and that they may be unaware of what services are actually being provided (e.g., type of healthcare services, educational and vocational support, drug and alcohol counseling, legal, and social support) (WHO 2009). Adolescents often lack accurate knowledge about health and disease including mental health, and have little appreciation of the impact of certain behaviors on health, such as substance use.

While the process of engaging in health care can be confusing for all, young people will only gain greater confidence and skills with practice. An important way to increase adolescents' use of healthcare services is to generate demand for services among them and to foster community support for adolescents' use of services (Denno et al. 2015). Acceptance among community gatekeepers (such as parents, community, and religious leaders) for the provision of healthcare services to adolescents, including sexual and reproductive healthcare services, is important; some studies have found that social- and community-level factors may be as, or more influential, in determining service use levels among youth as clinic-level factors (Mmari and Magnani 2003). Strategies to generate demand and community support include linking school programs with quality services, life skills approaches, social marketing and franchising, and community interventions to involve key community gatekeepers (WHO 2014).

Acceptability

Adolescents highly value privacy and confidentiality. Yet many adolescents are not aware that their regular healthcare provider is supposed to be a source of confidential care (Denny et al. 2012; Thrall et al. 2000). Spending time alone with an adolescent is recommended to ensure confidential care, yet it has not yet become routine practice. In a study from Canada, physicians were more likely to spend time alone during preventive visits than in the context of acute care. The authors concluded that because many adolescents do not make preventative care appointments, and because time alone drives provision of sexual health services, providers might be missing opportunities to deliver sexual and reproductive needed services to at-risk populations (O'Sullivan et al. 2010). Multiple studies confirm that the failure of healthcare services and clinicians to sufficiently respect adolescents' rights to information, privacy, and

confidentiality, and to provide non-discriminatory and non-judgmental care, is a major barrier to adolescents' use of services (Denny et al. 2012; El Damanhoury and Abdelhameed 2013; Khalaf et al. 2010; Thrall et al. 2000; Ghafari et al. 2014). In Lithuania, for example, general practitioners frequently violate adolescents' right to confidential healthcare services; when cases involve sexually transmitted infections or pregnancy, nearly 70 % of general practitioners' said they would inform the parents of adolescent clients (Jaruseviciene et al. 2011).

Clinical attitudes toward protecting the confidentiality of adolescents will, to at least some degree, reflect the expectations of the community. In this regard, the expectation of protecting confidentiality might be greater for topics related to sexual behaviors (e.g., contraception) than for the consequences of sexual behaviors, such as pregnancy, abortion, or a sexually transmitted infection (Jaruseviciene et al. 2014). In the absence of quality training, clinicians may have unresolved moral doubts, negative attitudes, and ethical concerns about how best to deal with sensitive health issues, such as adolescent sexual behaviors or substance use (El Damanhoury and Abdelhameed 2013). Others may hold conservative views about the acceptability of particular healthcare services, such as the appropriate age for contraceptive services (Tu et al. 2004).

In addition to privacy and confidentiality, adolescent experiences health care as acceptable when the provider has enough information, spends enough time, involves him/her in decisions about care and treatment, and explains things in a way that the adolescent can understand. Hargreaves et al. (2015) have shown that across 11 high-income countries, young adults were less satisfied than older adults in all of these aspects of care.

Equity

Some groups of adolescents are more likely than others to miss out on healthcare services. This includes young people who are socially marginalized or stigmatized, and those without health advocates such as parents or relatives. In many countries, unmarried sexually active adolescents are denied sexual and reproductive healthcare services because of societal attitudes about the value of chastity before marriage and provider disapproval. Lack of equity of access to abortion services can be especially problematic for this group (El Damanhoury and Abdelhameed 2013; Tilahun et al. 2012). Healthcare services often do not reach the most vulnerable, such as homeless adolescents (Berdahl et al. 2005; Elliott 2013; Roy et al. 2004), those with mental disorders or substance abuse (Cummings and Druss 2011; Elster et al. 2003), indigenous and immigrant youth and those from ethnic minorities (O'Connor et al. 2016), adolescents within youth justice settings (Barrett et al. 2006; Chitsabesan et al. 2006), and those stigmatized by sexual orientation or transgender status (Corliss et al. 2007; Mustanski et al. 2014; Nelson 1997).

Appropriateness

Appropriate services for adolescents are those that will benefit them. There is, however, often a mismatch between what services are offered and what services adolescents might benefit from. For example, the changing nature of health-related behaviors (substance use, too early sexual intercourse) and states (e.g., mental health disorders, anemia, overweight, and underweight) that commonly starts or has different consequences in adolescence, underpins the value of psychosocial assessment. This includes routine, confidential assessment of an individual's mental health and well-being, sexual health risks, substance use, and their exposure to violence and other injury risks, in the context of assessment of the family environment, education and employment, and friendships. Yet, for many reasons including lack of training, lack of policy support, lack of an appropriate funding model, and lack of appropriate referral services, many healthcare services fail to routinely utilize the opportunity to 'go beyond the presenting complaint' (Azzopardi et al. 2015).

It is particularly disappointing that important causes of mortality, disease burden, and risk factors in adolescents have failed to gain appropriate attention in many contemporary initiatives that are labeled 'adolescent-friendly.' An unpublished review by the World Health Organization revealed that the majority of these have focused on sexual and reproductive health (see Box 1). Yet, the burden of mental disorders, of violence-related morbidity and mortality, substance use, and chronic diseases reinforce the value of more comprehensive services being provided (Andrew et al. 2003). This is certainly consistent with young people's views on quality health care as reported earlier, and with the shared risk and protective factors for many health-related behaviors and states that are known to cluster together (Sawyer et al. 2012). The WHO undertook a global consultation with adolescents as part of its recent report, *Health for the world's adolescents: a second chance in the second decade* and showed that more respondents expressed interest in seeking services for mental health and nutritional issues than for sexual and reproductive health issues (WHO 2014). Consistent with this, a study that aimed to elicit the healthcare needs of adolescents in higher secondary school in Goa, India, showed that while there was clearly unmet need for sexual and reproductive health information, adolescents perceived psychosocial support for health issues ranging from violence in schools to poor relationships with parents, stress-related health complaints, and educational difficulties as primary concerns, with high unmet need (Andrew et al. 2003). Reassuringly, adolescents report welcoming discussion about such complex issues if raised sensitively by clinicians (Klein and Matos 2002).

Box 1 Adolescent-friendly Health Services

Methods: A systematic review was conducted on the literature published in English and Spanish from 2000 to 2013 on adolescent-friendly health services in countries from Africa, Asia, Central America, and South America. One aim of the review was to ascertain the types of services provided to adolescents in the context of 'youth-friendly health services' initiatives. Literature was searched for relevant articles in PubMed, Google Scholar, Articles+, POPLINE, IndMED, and ProQuest.

Results: 50 papers were included in the analysis. All 50 papers described initiatives that focused on sexual and reproductive health services. Only two papers described initiatives that provided other than sexual and reproductive services (one included general health assessment, the other one included blood pressure measurement and laboratory testing).

Conclusion: Current initiatives to improve service provision to adolescents that are labeled 'youth-friendly' fail to include an appropriate spectrum of services.

Source adapted from WHO (2014).

In the Republic of Moldova, an evaluation of youth-friendly health centers found that they were not fully mandated to deliver a comprehensive package of nutritional, mental health, violence prevention, and sexual and reproductive healthcare services, despite the fact that the package had been defined by the Ministry of Health (Carai et al. 2014). More comprehensive healthcare services may function to reduce the potential stigma of accessing sexual and reproductive healthcare services, especially for unmarried adolescents. There is no evidence that 'stand-alone' youth healthcare services have better health outcomes than those that target a wider population. This may suggest greater access from generalist services while obviating stigma associated with adolescent sexual and reproductive healthcare services.

Effectiveness

Effectiveness is a dimension of quality that implies that services are evidence-based, or at least evidence-informed. We would expect fewer

clinical trials in adolescents than in adults, given that fewer randomized controlled trials are undertaken in children less than 18 years old than in adults. This results in numerous medications being prescribed 'off label' in children less than 18 years old due to financially driven decisions by pharmaceutical companies. Even in cancer care, where treatment within a clinical trial is considered best practice, large numbers of adolescents with cancer remain ineligible for any trial due to their age. Arguably, while this is inequitable, it will remain challenging to gain sufficient evidence to treat adolescents with many cancers given the lower incidence of cancer in children and adolescents than in adults.

This same challenge is true for many other health issues affecting adolescents. For example, little is known about the effectiveness of care provided to adolescents when measured against objective criteria. For example, although unipolar mental health disorders (i.e., depression) are ranked as the leading cause of disability-adjusted life years lost (DALYs) among adolescents globally (WHO 2014), very little is known about the extent that evidence-based services are delivered for adolescent depression and depressive symptoms (Alexandre et al. 2009; Bramesfeld et al. 2007; Cheung and Dewa 2007; Collins et al. 2006; Hetrick et al. 2012; Pasquale 2013; Ross and Brannigan 2008). Given the prevalence of mental health disorders in young people, more research is indicated, especially in low- and middle-income settings, and using more innovative modalities that might be more readily taken to scale (e.g., technology-based interventions).

There is, however, a growing evidence base for the principles of adolescent health care. For example, there is good evidence from multiple studies using different research methodologies about the value of confidential health care. However, even in this area, there is only one controlled trial (Ford et al. 1997).

There is also growing evidence about the value of clinical training in adolescent health and medicine. The first randomized trial around this issue showed that training general practitioners in the principles of adolescent health care significantly improved their competency in working with this age group (Sanci et al. 2000). Other studies show gains in attitudes, confidence, and competence with specialist providers and trainees (Sawyer et al. 2013).

A critical question is whether gains in adolescent-friendly clinical skills translate to measureable improvements in health outcomes for adolescents. In 2007, a systematic review of evidence for youth-friendly services failed to locate studies of sufficient quality to assess the potential of primary care to improve the health of young people (Tylee et al. 2007). Consistent with contemporary clinical guidelines, this review recommended routinely screening adolescents for multiple health risks. More recent trials are starting to provide some evidence of the effectiveness of interventions that target behavior change in young people (Sanci et al. 2012; Chen et al. 2011; Joseph et al. 2009).

Research investments are similarly needed to assess the potential value of other platforms for healthcare delivery. For example, Chap. 24 showed that the evidence-based practice for common interventions in school healthcare services is weak. An equal challenge is to ensure that where there is evidence, the evidence-based practice becomes embedded within routine clinical practices (Catalano et al. 2012).

A Standards-Driven Approach to Improve the Quality of HealthCare Services for Adolescents

Global initiatives are urging countries to prioritize quality as a way of reinforcing human rights-based approaches to health (WHO 2013). The World Health Organization report *Health for the world's adolescents: a second chance in the second decade* suggests that to make progress toward universal health coverage, ministries of health and the health sector more generally will need to transform how health systems respond to the health needs of adolescents. It recommends developing and implementing national quality standards and monitoring systems as one of the actions necessary to make this transformation (WHO 2014).

In order to assist policy-makers and health service planners in improving the quality of healthcare services for adolescents, the World Health Organization has recently developed Global Standards for Quality Healthcare Services for Adolescents (see Table 15.1).

Many countries are moving toward using an indicator or standards-driven approach to improve the quality of care for adolescents (Ambresin et al. 2013; Chandra-Mouli et al. 2013; Committee on Adolescence American Academy of Pediatrics 2008; Department of Health 2011; Nath and Garg 2008; Dickson-Tetteh et al. 2001; Mmari and Magnani 2003). In South Africa, an accreditation program was designed to improve the quality of adolescent healthcare services at the primary care level and strengthen the public sector's ability to respond to adolescent health needs. This was done through establishing national standards and criteria for adolescent health care in clinics throughout the country, and by building the capacity of healthcare workers to provide quality services (Dickson-Tetteh et al. 2001). In Ukraine, standards have been integrated into the national system of accreditation of youth-friendly health clinics (Ministry of Health Ukraine 2012). In the Republic of Moldova, standards were used to provide the basis for demonstrating the utility of youth-friendly health centers, to provide the Ministry of Health with objective information on the breadth and depth of the compliance with

Table 15.1 Global Standards for Quality Healthcare Services for Adolescents (WHO 2015)

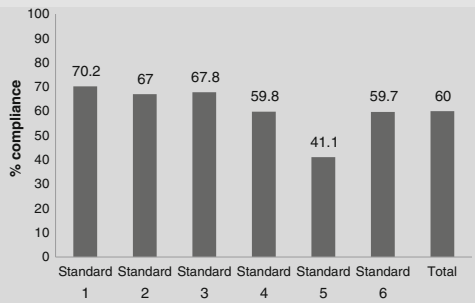
Standard 1	Adolescent health literacy	The health facility implements systems to ensure that adolescents are knowledgeable about their own health, and they know where and when to obtain health services
Standard 2	Community support	The health facility implements systems to ensure that parents, guardians, and other community members and community organizations recognize the value of providing health services to adolescents. They support such provision and the utilization of services by adolescents
Standard 3	Appropriate package of services	The health facility provides a package of information, counseling, diagnostic, treatment, and care services that fulfills the needs of all adolescents. Services are provided in the facility and through referral linkages and outreach
Standard 4	Provider competencies	Healthcare providers demonstrate the technical competence required to provide effective health services to adolescents. Both healthcare providers and support staff respect, protect, and fulfill adolescents' rights to information, privacy, confidentiality, non-discrimination, non-judgmental attitude, and respect
Standard 5	Facility characteristics	The health facility has convenient operating hours, a welcoming and clean environment and maintains privacy and confidentiality. It has the equipment, medicines, supplies, and technology needed to ensure effective service provision to adolescents.
Standard 6	Equity and non-discrimination	The health facility provides quality[a] services to all adolescents irrespective of their ability to pay, age, sex, marital status, education level, ethnic origin, sexual orientation, or other characteristics
Standard 7	Data and quality improvement	The health facility collects, analyses, and uses data on service utilization and quality of care, disaggregated by age and sex, to support quality improvement. Health facility staff is supported to participate in continuous quality improvement
Standard 8	Adolescent participation	Adolescents are involved in the planning, monitoring, and evaluation of health services and in decisions regarding their own care, as well as in certain appropriate aspects of service provision

[a]The term 'quality services' encompasses all the characteristics of services as outlined in these standards and their criteria

national quality standards of the assessed facilities (Box 2), and later to advocate with the National Health Insurance Company (NHIC) to take on the funding of youth-friendly health centers (Chandra-Mouli et al. 2013). In the UK and Scotland, standards are also being developed for primary healthcare services for adolescents (Department of Health 2011).

An important component of monitoring standards is to ensure that in addition to the requirements by administrators and providers (e.g., to provide comprehensive services, to support appropriate training), that processes are also implemented to measure the acceptability of healthcare services as assessed by young people themselves. Recent research is starting to develop the conceptual frameworks and tools to assist healthcare services undertake such tasks (Sawyer et al. 2014) although much more work is required. For example, there are exciting opportunities to utilize brief experience of care 'exit surveys' using mobile phone technologies. The World Health Organization has recently developed a prototype that digitalizes the Global Standards for Quality Healthcare Services for Adolescents, and that will make it easier for adolescent clients to report anonymously on their experience of care.

Box 2 Compliance of 12 youth-friendly health centers with National Quality Standards in the Republic of Moldova



Standard 1: Young people know when and where to ask for health services.
Standard 2: Young people have easy access to the health services they need, they also find them acceptable.
Standard 3: Health service providers maintain the confidentiality and respect the privacy of young people.
Standard 4: Health service providers mobilize the community (to promote youth-friendly health services).
Standard 5: Health service providers provide health services effectively, in line with the basic or extended packages.
Standard 6: All young people have equal access to health services.

Source Chandra-Mouli et al. (2013).

Implementing National Quality Standards

Developing and implementing national quality standards and monitoring systems are just one part of the transformation that health systems need to undergo in order to better respond to the health and development needs and opportunities of adolescents (WHO 2014). Improving the quality of care at mainstream primary and referral level facilities cannot succeed without strengthening all pillars of the health system. This includes:

- governance, so that policies are in place that respect, protect, and fulfill adolescents' rights in health care and national health management information systems that provide evidence-based information for decision making;
- financing, so that allocation of resources and purchasing services is done in a way that meets the need of adolescents;
- strengthening workforce capacity, so that healthcare providers have the necessary competencies to implement the standards; and
- ensuring that the necessary drugs, supplies, and technology are available so that the functioning of the facility is seamless.

Therefore, in addition to actions in the facility and community, national- and district-level actions will be necessary in each of the health system pillars in order to enable facility staff and managers to implement the standards and their criteria. The WHO implementation guide of the

WHO Global Standards for Quality Healthcare Services for Adolescents provides detailed guidance of the type of actions necessary at each level (WHO 2015).

Conclusions

Progress toward universal health coverage requires transition from small, adolescent-friendly health projects to adolescent-responsive health systems. The goal of such adolescent-responsive health systems is to consistently provide quality health care to adolescents, which is based on the knowledge and appreciation of the special healthcare needs of the young. Increasingly, the driver for delivering quality health care to adolescents is the recognition of the benefits that accrue across the lifecourse when communities 'get it right' for young people (Patton et al. 2014). This includes the triple dividend of benefits in adolescence itself, benefits from improved health in adults, and benefits to the next generation (Patton et al. 2016).

Healthcare services alone cannot achieve such gains, which are largely shaped by individual and family interactions with wider social determinants of health. However, healthcare systems have an important role to play, which will be optimally leveraged by services that deliver equitable evidence-based health care that is supported by adequate health information systems and the necessary resources (e.g., drugs, supplies, and technology), including a well-trained workforce.

The barriers faced by adolescents in accessing quality health care are well documented. Now is the time for healthcare systems to take actions to remove or at least minimize them. One way to do so is through the implementation of service standards. The WHO Global Standards for Quality Healthcare Services for Adolescents and their implementation guide and monitoring tools provide a practical guidance for healthcare planners, facility managers, and healthcare providers on how to improve the quality of adolescent healthcare services. Young people deserve substantially more investment in developing and testing novel actions to improve their health. Greater investment in training health professionals and support staff is also required if adolescent-responsive systems are truly to be put in place. But much can be done by healthcare services—now—to implement the principles of practice of what young people tell us matter to them.

References

ACSQHC. (2011). *Patient-centred care: Improving quality and safety through partnerships with patients and consumer*. Sydney: Australian Commission on Safety and Quality in Health Care ACSQHC. Retrieved from http://www.safetyandquality.gov.au/implementation-toolkit-resource-portal/resources/additional-clinical-handover-resources/acsqhs-resources/Patient%20Centred%20Care%20Paper%20FINAL%20WEB%20VERSION.PDF. Accessed on May 22, 2015.

AIDS Accountability International. (2013). *Regional diagnostic report on HIV, sexuality education and sexual and reproductive health care services for young people in East and Southern Africa*. Cape Town, South Africa: AIDS Accountability International. Retrieved from http://www.aidsaccountability.org/?page_id=8336

Alexandre, P. K., Martins, S. S., & Richard, P. (2009). Disparities in adequate mental health care for past-year major depressive episodes among Caucasian and Hispanic youths. *Psychiatric Services, 60*, 1365–1371.

Ambresin, A. E., Bennett, K., Patton, G. C., Sanci, L. A., & Sawyer, S. M. (2013). Assessment of youth-friendly health care: A systematic review of indicators drawn from young people's perspectives. *Journal of Adolescent Health, 52*, 670–681.

Andrew, G., Patel, V., & Ramakrishna, J. (2003). Sex, studies or strife? What to integrate in adolescent health care services. *Reproductive Health Matters, 11*, 120–129.

Azzopardi, P. S., Creati, M., & Sawyer, S. M. (2015). Adolescent health. In B. Nelson (Ed.), *Essential clinical global health medicine*. New Jersey: Wiley Blackwell Publishing.

Barrett, B., Byford, S., Chitsabesan, P., & Kenning, C. (2006). Mental health provision for young offenders: Service use and cost. *The British Journal of Psychiatry, 188*, 541–546.

Berdahl, T. A., Hoyt, D. R., & Whitbeck, L. B. (2005). Predictors of first mental health service utilization among homeless and runaway adolescents. *Journal of Adolescent Health, 37*, 145–154.

Bramesfeld, A., Grobe, T., & Schwartz, F. W. (2007). Who is treated, and how, for depression? An analysis of statutory health insurance data in Germany. *Social Psychiatry and Psychiatric Epidemiology, 42*, 740–746.

Calhoun, L. M., Speizer, I. S., Rimal, R., Sripad, P., Chatterjee, N., & Achyut, P. (2013). Provider imposed

restrictions to clients' access to family planning in urban Uttar Pradesh, India: A mixed methods study. *BMC Health Service Research, 13*, 532.

Carai, S., Bivol, S., & Chandra-Mouli, V. (2014). Using evaluation results to improve services—The case of the Republic of Moldova. Entre Nous. *The European Magazine for Sexual and Reproductive Health*, 16–17.

Catalano, R. F., Fagan, A. A., Gavin, L. E., Greenberg, M. T., Irwin, C. E., Ross, D. A., et al. (2012). Worldwide application of prevention science in adolescent health. *Lancet, 379*(9826), 1653–1664.

Chandra-Mouli, V., Baltag, V., & Ogbaselassie, L. (2013a). Strategies to sustain and scale up youth friendly health care services in the Republic of Moldova. *BMC Public Health, 13*, 284.

Chandra-Mouli, V., Mapella, E., John, T., Gibbs, S., Hanna, C., Kampatibe, N., et al. (2013b). Standardizing and scaling up quality adolescent friendly health services in Tanzania. *BMC Public Health, 13*, 579.

Chen, X., Murphy, D. A., Naar-King, S., & Parsons, J. T. (2011). A clinic-based motivational intervention improves condom use among subgroups of youth living with HIV. *Journal of Adolescent Health, 49*, 193–198.

Cheung, A. H., & Dewa, C. S. (2007). Mental health service use among adolescents and young adults with major depressive disorder and suicidality. *Canadian Journal of Psychiatry, 52*, 228–232.

Chitsabesan, P., Kroll, L., Bailey, S., Kenning, C., Sneider, S., MacDonald, W., et al. (2006). Mental health needs of young offenders in custody and in the community. *British Journal of Psychiatry, 188*, 534–540.

Collins, K. A., Wolfe, V. V., Fisman, S., DePace, J., & Steele, M. (2006). Managing depression in primary care: Community survey. *Canadian Family Physician, 52*, 878–879.

Committee on Adolescence American Academy of Pediatrics. (2008). Achieving quality health services for adolescents. *Pediatrics, 121*, 1263–1270.

Corliss, H. L., Belzer, M., Forbes, C., & Wilson, E. C. (2007). An evaluation of service utilization among male to female transgender youth: Qualitative study of a clinic-based sample. *Journal of LGBT Health Research, 3*, 49–61.

Cummings, J. R., & Druss, B. G. (2011). Racial/ethnic differences in mental health service use among adolescents with major depression. *Journal of the American Academy of Child and Adolescent Psychiatry, 50*, 160–170.

Declaration of Alma-Ata. (1978). In *International Conference on Primary Health Care, Alma-Ata*, USSR. Retrieved September 6–12, 1978, from http://www.who.int/publications/almaata_declaration_en.pdf

Denno, D. M., Hoopes, A. J., & Chandra-Mouli, V. (2015). Effective strategies to provide adolescent sexual and reproductive health services and to increase demand and community support. *Journal of Adolescent Health, 56*, S22–S41.

Denny, S., Farrant, B., Cosgriff, J., Hart, M., Cameron, T., Johnson, R., … Ameratunga, S. (2012). Access to private and confidential health care among secondary school students in New Zealand. *Journal of Adolescent Health, 51,* 285–291.

Department of Health. (2011). 'You're Welcome': Quality criteria for young people friendly health services London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216350/dh_127632.pdf

Dickson-Tetteh, K., Pettifor, A., & Moleko, W. (2001). Working with public sector clinics to provide adolescent-friendly services in South Africa. *Reproductive Health Matters, 9*, 160–169.

El Damanhoury, H., & Abdelhameed, D. (2013). Youth-friendly clinics: Exploring Egyptian provider attitudes and communication behaviors about sexual and reproductive health. In N. Abdel-Tawab, S. Saher, & N. El Nawawi (Eds.), *Breaking the silence: Learning about youth sexual and reproductive health in Egypt*. Cairo: Population Council.

Elliott, A. S. (2013). Meeting the health care needs of street-involved youth. *Paediatrics and Child Health, 18*, 317–326.

Elster, A., Jarosik, J., VanGeest, J., & Fleming, M. (2003). Racial and ethnic disparities in health care for adolescents: A systematic review of the literature. *Archives of Pediatrics and Adolescent Medicine, 157*, 867–874.

Ford, C. A., Millstein, S. G., Halpern-Felsher, B. L., & Irwin, C. E., Jr. (1997). Inffiuence of physician confidentiality assurances on adolescents' willingness to disclose information and seek future health care. A randomized controlled trial. *Journal of the American Medical Association, 278*, 1029–1034.

Ghafari, M., Shamsuddin, K., & Amiri, M. (2014). Barriers to utilization of health services: Perception of postsecondary school malaysian urban youth. *International Journal of Preventive Medicine, 5*, 805–806.

Hargreaves, D. S., Greaves, F., Levay, C., Mitchell, I., Koch, U., Esch, T., … Sheikh, A. (2015). Comparison of health care experience and access between young and older adults in 11 high-income countries. *Journal of Adolescent Health, 57*(4), 413–420.

Hetrick, S. E., Thompson, A., Yuen, K., Finch, S., & Parker, A. G. (2012). Is there a gap between recommended and 'real world' practice in the management of depression in young people? A medical file audit of practice. *BMC Health Services Research, 12*, 178.

Jaruseviciene, L., Lazarus, J. V., & Zaborskis, A. (2011). Confidentiality and parental involvement in adolescent sexual and reproductive health care: A cross-sectional study of Lithuanian general practitioners. *Scandinavian Journal of Public Health, 39*, 484–491.

Jaruseviciene, L., Zaborskis, A., & Lazarus, J. V. (2014). Public expectations concerning confidentiality protection of adolescents' sexual and reproductive health care in Lithuania: Findings of the surveys conducted

in 2005 and 2012. *European Journal of Contraception and Reproductive Health Care, 19*, 102–107.

Joseph, J. G., El-Mohandes, A. A., Kiely, M., El-Khorazaty, M. N., Gantz, M. G., Johnson, A. A., …, Subramanian, S. (2009). Reducing psychosocial and behavioral pregnancy risk factors: Results of a randomized clinical trial among high-risk pregnant african american women. *American Journal of Public Health, 99,* 1053–1061.

Kennedy, I. (2010). *Getting it right for children and young people. Overcoming cultural barriers in the NHS so as to meet their needs.* Department of Health. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216282/dh_119446.pdf

Khalaf, I., Abu, M. F., & Froelicher, E. S. (2010). Youth-friendly reproductive health services in Jordan from the perspective of the youth: A descriptive qualitative study. *Scandinavian Journal of Caring Sciences, 24*, 321–331.

Klein, J. D., & Matos, A. M. (2002). Improving adolescent health outcomes. *Minerva Pediatrica, 54*, 25–39.

Ministry of Health Ukraine. (2012). *Repeat evaluation of youth friendly clinics in Ukraine. Final report*. Retrieved from, http://www.unicef.org/evaldatabase/files/2011_Ukraine_-_YFCReport_Engl_280212-edited_final.pdf

Mmari, K. N., & Magnani, R. J. (2003). Does making clinic-based reproductive health services more youth-friendly increase service use by adolescents? Evidence from Lusaka, Zambia. *Journal of Adolescent Health, 33*, 259–270.

Mustanski, B., Birkett, M., Greene, G. J., Hatzenbuehler, M. L., & Newcomb, M. E. (2014). Envisioning an America without sexual orientation inequities in adolescent health. *American Journal of Public Health, 104*, 218–225.

Nath, A., & Garg, S. (2008). Adolescent friendly health services in India: A need of the hour. *Indian Journal of Medical Sciences, 62*, 465–472.

National Research Council and Institute of Medicine. (2009). *Adolescent health services: Missing opportunities*. Washington, DC: The National Academies Press.

Nelson, J. A. (1997). Gay, lesbian, and bisexual adolescents: Providing esteem-enhancing care to a battered population. *The Nurse Practitioner, 22,* 94, 99, 103.

O'Connor, R. M., Dobra, A., Voss, J., Pihoker, C., & Doorenbos, A. (2016). Glycemic control in US immigrant and nonimmigrant black youth with Type 1 diabetes. *Journal of Immigrant and Minority Health, 18*(1), 270–273.

Office of the United Nations High Commissioner for Human Rights. (1989). *Convention on the rights of the child*. Geneva: Author. Retrieved from http://www.ohchr.org/english/law/crc.htm

O'Sullivan, L. F. O., McKee, M. D., Rubin, S. E., & Campos, G. (2010). Primary care providers' reports of time alone and the provision of sexual health services to urban adolescent patients: Results of a prospective card study. *Journal of Adolescent Health, 47*(1), 110–112.

Pasquale, C. B. (2013). *Service provision of evidence-based interventions for adolescent depression and depressive symptoms: A systematic literature review* (unpublished).

Patton, G. C., Coffey, C., Sawyer, S. M., Viner, R. M., Haller, D. M., Bose, K., … Mathers, C. D. (2009). Global patterns of mortality in young people: A systematic analysis of population health data. *Lancet, 374,* 881–892.

Patton, G. C., Ross, D. A., Santelli, J. S., Sawyer, S. M., Viner, R. M., & Kleinert, S. (2014). Next steps for adolescent health: A Lancet Commission. *Lancet, 383*, 385–386.

Patton, G. C., Sawyer, S. M., Santelli, J. S., Ross, D. A., Afifi, R., Allen, N. B., ...Viner, R. M. (2016). Our future: A *Lancet* commission on adolescent health and wellbeing. *Lancet*, *386*, 2423–2478.

Ross, G., & Brannigan, C. (2008). Are depressed adolescents routinely offered CBT? A brief review of current practice. *Behavioural and Cognitive Psychotherapy, 36*, 113–117.

Roy, E., Haley, N., Leclerc, P., Sochanski, B., Boudreau, J. F., & Boivin, J. F. (2004). Mortality in a cohort of street youth in Montreal. *Journal of the American Medical Association, 292*, 569–574.

Sanci, L., Grabsch, B., Chondros, P., Shiell, A., Pirkis, J., Sawyer, S., … Seymour, J. (2012). The prevention access and risk taking in young people (PARTY) project protocol: A cluster randomised controlled trial of health risk screening and motivational interviewing for young people presenting to general practice. *BMC Public Health, 12*(1), 1. Retrieved from http://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-12-400

Sanci, L. A., Ker, J., Coffey, C. M. M., Veit, F. C. M., Carr-Gregg, M., Patton, G. C., … Bowes G. (2000). Evaluation of the effectiveness of an educational intervention for general practitioners in adolescent health care: Randomised controlled trial. *The British Medical Journal, 320*, 224–230.

Sawyer, S. M., Afifi, R. A., Bearinger, L. H., Blakemore, S. J., Dick, B., Ezeh, A. C., et al. (2012). Adolescence: A foundation for future health. *Lancet, 379*, 1630–1640.

Sawyer, S. M., Ambresin, A. E., Bennett, K. E., & Patton, G. C. (2014). A measurement framework for quality health care for adolescents in hospital. *Journal of Adolescent Health, 55*, 484–490.

Sawyer, S. M., Conn, J. J., Reid, K. J., Dodds, A. E., Hudson, L., Yeo, M., et al. (2013). Working with young people: Evaluation of an education resource for medical trainees. *Journal of Paediatrics and Child Health, 49*, 901–905.

Sawyer, S. M., Drew, S., Yeo, M. S., & Britto, M. T. (2007). Adolescents with a chronic condition:

Challenges living, challenges treating. *Lancet, 369*, 1481–1489.

Sawyer, S. M., Proimos, J., & Towns, S. J. (2010). Adolescent-friendly health services: What have children's hospitals got to do with it? *Journal of Paediatrics and Child Health, 46*, 214–216.

Sedlander, E., Brindis, C. D., Bausch, S. H., & Tebb, K. P. (2015). Options for assuring access to confidential care for adolescents and young adults in an explanation of benefits environment. *Journal of Adolescent Health, 56*, 7–9.

The Ottawa Charter for Health Promotion. (1986). In *First International Conference on Health Promotion, Ottawa, 21 November 1986*. Geneva: WHO.

Thrall, J. S., McCloskey, L., Ettner, S. L., Rothman, E., Tighe, J. E., & Emans, S. J. (2000). Confidentiality and adolescents' use of providers for health information and for pelvic examinations. *The Archives of Pediatrics & Adolescent Medicine, 154*, 885–892.

Tilahun, M., Mengistie, B., Egata, G., & Reda, A. A. (2012). Health workers' attitudes toward sexual and reproductive health services for unmarried adolescents in Ethiopia. *Reproductive Health, 9*, 19.

Tu, X., Cui, N., Lou, C., & Gao, E. (2004). Do family-planning workers in China support provision of sexual and reproductive health services to unmarried young people? *Bulletin of the World Health Organization, 82*, 274–280.

Tylee, A., Haller, D. M., Graham, T., Churchill, R., & Sanci, L. A. (2007). Youth-friendly primary-care services: How are we doing and what more needs to be done? *Lancet, 369*, 1565–1573.

Waddington, C., & Sambo, C. (2015). Financing health care for adolescents: A necessary part of universal health coverage. *Bulletin of the World Health Organization, 93*, 57–59.

World Health Organization. (1981). *Global strategy for health for all by the year 2000*. Geneva: World Health Organization.

World Health Organization. (2000). *The world health report 2000. Health systems: Improving performance*. Geneva: World Health Organization.

World Health Organization. (2002). *Adolescent friendly health services. An agenda for change*. Retrieved from http://whqlibdoc.who.int/hq/2003/WHO_FCH_CAH_02.14.pdf

World Health Organization. (2009). *Quality assessment guidebook. A guide to assessing health services for adolescent clients*. Geneva: World Health Organization.

World Health Organization. (2013). *Every woman, every child: Strengthening equity and dignity through health. The second report of the independent Expert Review Group (iERG) on information and accountability for women's and children's health*. Geneva: WHO.

World Health Organization. (2014). *Health for the World's adolescents: A second chance in the second decade*. Retrieved from http://apps.who.int/adolescent/second-decade/

World Health Organization. (2015). *Global standards for quality health-care services for adolescents*. Geneva: World Health Organization.

Toward an Adolescent Competent Workforce

16

Susan M. Sawyer and Valentina Baltag

Introduction

The focus of health services is on those health problems that most contribute to the burden of disease. In resource poor settings, given the high rate of mortality from acute infectious diseases in children under five years of age, and the risks of childbirth and of poor nutrition for mothers and children alike, healthcare services have predominantly focused on maternal and child health needs. These include acute infectious diseases, undernutrition, and maternal health with a focus on family planning. Indeed, the development of the maternal and child health workforce, often delivered through a model of care that is distinct from other primary healthcare services, reflects the importance of these maternal and child health needs.

Historically, the focus of teaching and training healthcare workers targeted those same health issues. In that context, it is not surprising that until recently relatively little attention has been paid to the specific needs of adolescents for health services. This neglect was further fueled by widespread beliefs that adolescents are largely healthy with little need for health services beyond sexual and reproductive healthcare (Sawyer et al. 2012).

As described in the chapter on Quality Healthcare for Adolescents, three major changes underpin the need to galvanize greater investments in training to ensure that the future health workforce has the necessary competence to work more effectively with adolescents. The first change is around the population burden of disease. Dramatic reduction in mortality of children under five years of age has brought fresh attention to adolescents who have not experienced the same reductions (Viner et al. 2011). The burden of HIV/AIDS in adolescents has brought attention to adolescent sexual and reproductive health needs, with growing appreciation that strategies that are effective in older adults do not necessarily achieve the same level of effectiveness in adolescents (Kasedde et al. 2013) and that a

Valentina Baltag is staff member of the World Health Organization. The authors alone are responsible for the views expressed in this chapter, and they do not necessarily represent the decisions or policies of the World Health Organization.

S.M. Sawyer (✉)
Centre for Adolescent Health, Royal Children's Hospital, 50 Flemington Rd, Parkville, VIC 3052, Australia
e-mail: susan.sawyer@rch.org.au

S.M. Sawyer
Department of Paediatrics, The University of Melbourne, Melbourne, Australia

S.M. Sawyer
Murdoch Childrens Research Institute, Melbourne, Australia

V. Baltag
Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_16

wider approach is required (e.g., that includes addressing interpersonal violence and gender inequalities). The availability of HPV vaccination for young adolescents has helped raise awareness about the opportunities around the preventive interventions in adolescence (Broutet et al. 2013). Beyond immunization, prevention efforts are also required to address those more complex risk factors for non-communicable diseases (NCDs) in adults, which have their origins in adolescence, such as tobacco use, obesity, and low physical activity (Sawyer et al. 2012). The extent that preventable injuries contribute to adolescent mortality and morbidity (e.g., physical disability, acquired brain injury) is now better appreciated as having implications for both emergency healthcare and prevention, especially in relationship to road safety and workplace safety (Patton et al. 2009; Gore et al. 2011). Within the life course, the period of adolescence and young adulthood is the most common time of onset of mental disorders. Deaths from self-harm including suicide are a major contribution to adolescent and young adult mortality across the world. This challenges health services about how to both identify and respond to mental health disorders in the young (Patel et al. 2007).

One obvious change is that the burden of chronic mental health and physical disorders requires reorientation of health services away from the standardized interventions that have focused predominantly on acute health concerns, such as infectious diseases, to focus on chronic conditions where continuity of care is required. This requires a different engagement model for adolescents within health services, the responsibility for which primarily rests with health services as well as communities. At the other end of life, the burden of disease in aging populations is similarly challenging health systems to shift focus to managing the needs of elderly with largely chronic health conditions (Oliver et al. 2014). There is little evidence that health service organizations recognize that there are similar challenges for adolescents and their health.

The second change relates to the growing appreciation of the significance of adolescence as a profound period of growth and maturation. Not only does adolescence now start earlier and extend for longer, but also the significance of biological and neurocognitive maturation is clearer for health (Sawyer et al. 2012). Late childhood and adolescence is now appreciated as an important time of continued growth in all body systems. While the importance of puberty as critical to physical growth and maturity in the second decade has long been apparent, the significance of neurocognitive maturation that extends at least to the third decade is also increasingly clear. These changes result in adolescence being a further time of biological embedding when the social context 'gets under the skin' (Viner et al. 2012).

Advances in neurocognitive science suggest that the differentiation of brain development has great relevance for the development of health problems and health risks related to emotion and emotional control (Crone and Dahl 2012). This is relevant for responding to health needs around sexual and reproductive health, HIV risk, injury, mental disorders, substance use, and chronic physical health problems, including long-term engagement with a healthcare system, including adherence to treatment. Adolescence is a time of life when there is a greater diversity in social influence and the social determinants of health than at any other point across the life course. Relationships with family change, the peer group gains particular salience, and media and marketing have a greater impact during adolescence and young adulthood than at other age. During adolescence, the confluence of biological maturation, social role transitions, and changing social determinants of health that results in the onset of behaviors, such as alcohol use, sexual intercourse, and tobacco use, that affect the health of adolescents during adolescence (e.g., alcohol-related injuries), that affect the health of the next generation when these adolescents parent Patton et al. 2015 (e.g., HIV/AIDS, impact of tobacco on the fetus), and that affect the health of the maturing adolescent as they become adult (e.g., tobacco-related NCDs) (Sawyer et al. 2012).

The third change is the policy landscape. Over the past five years, various UN agencies, international players, and academics have helped

build momentum around the importance of adolescent health and well-being. In 2011, UNICEF published its first ever State of The World's Children report that exclusively focused on adolescents, evocatively titled, 'Adolescence: an age of opportunity.' In 2012, USAID published its first ever report on youth in development, and The Lancet published its second series on adolescent health. UNFPA published an important report on child marriage in 2013, while in 2014 WHO published a report titled, 'Health for the World's Adolescents: Second Chance for the Second Decade.' Maturation of the Millennium Development Goals in 2015 saw a new global commitment to the Sustainable Development Goals for 2030. In this context, there has been a remarkable recognition of the contribution that women, children, and adolescents make to 'robust economies and resilient societies' (Desalegn et al. 2015). The Global Strategy for Women's and Children's Health has explicitly been expanded to adolescents. Now known as the Global Strategy for Women's, Children's and Adolescents' Health, it is to be accompanied by a multibillion financing mechanism.

In 2016, the Lancet Commission on Adolescent Health and Wellbeing will provide a narrative framework that will help shape new investments in adolescent health and well-being that lie both within and beyond the health sector (Patton et al. 2014). And, in 2017, it is expected that WHO will lead a framework for accelerated action for adolescent health aligned with the Global Strategy that will engage member states in new investments to promote the health and well-being of their young people.

Never before has the global community experienced such interest in and awareness of the health issues facing young people. However, there are great challenges about how countries, communities, and young people take actions in response to the complex burden of heath needs in the young. Within the health system, expectations are growing for health services to provide an appropriate response to the changing health needs of adolescents within their communities.

The challenge of equipping the health workforce with the necessary skills to take on this task is daunting. A recent call to scale up quality health services to adolescents in India, a country with around 250 million adolescents and a new national policy that supports the delivery of comprehensive healthcare to this population, suggested that the lack of competence in health staff will be a major barrier to achieving this goal (Sivagurunathan et al. 2015). For example, in a WHO consultation with primary care providers that was undertaken as part of the 2014 *Health for the World's Adolescents* report, 735 respondents from 81 countries reported that adolescent health was seldom part of their pre-service education. Almost half reported that they had learned about adolescent healthcare on the job or had no training at all (see the chapter on India in this volume, which goes into detail about India's efforts to provide healthcare to their adolescents).

Why Specific Training in Adolescent Health is Important

Adolescents and young adults have fundamental needs for health services that address both their conspicuous health needs and the new and emerging healthcare needs that arise during adolescence, whether around heath needs for developmentally normative behaviors (e.g., contraception in the context of sexual activity) or around health risks and disorders (e.g., tobacco, obesity, mental health disorders). Adolescents are inexperienced users of health services and are typically not empowered to function independently of their families. This places particular responsibility on healthcare providers to identify their health needs and engage young people themselves around their health concerns. At the same time, healthcare providers need to continue to engage with the families of adolescents in ways that are respectful to both the family and the young person, and cognizant of community norms and local laws (see Box 1).

Box 1: The Context of Adolescent HealthCare Requires Engagement with Adolescents and their Families

Anisha is a 16-year-old Indian girl who was brought to the health service by her mother because of severe headache that had persisted over the past few weeks. Such a headache may reflect many different organic pathologies and stressors, including bullying at school, migraine, meningitis, or even a brain tumor. In addition to clinical examination, a thorough psychosocial assessment by the doctor with the girl alone revealed she was highly distressed because she thought she was pregnant following unprotected sex with her boyfriend. At the time of assessment, she was actively suicidal due to her anxiety over what would happen if her parents were to find out. Her mother was neither aware of her daughter's emotional distress nor of her sexual activity.

In this example, the doctor or nurse requires four sets of skills. Firstly, core clinical history taking and examination skills are required to fully consider the differential diagnoses—might she be pregnant? Does she have migraine? Is there clinical evidence of something more sinister? Secondly, communication skills are required to negotiate for time alone with the adolescent patient, without her mother present, in which the clinician can fully explore the context of her headaches. Thirdly, knowledge of the medicolegal context of both the adolescent patient and the clinician will inform possible responses—how old is her partner? Was the sex consensual or not? Is termination of pregnancy an option were she pregnant? Finally, a complex set of skills is required to ensure that the girl is kept safe, both within the family (e.g., interpersonal violence) and in terms of future sexual activity (e.g., contraception, STI prevention). The attitudes, knowledge, and skills required to address this clinical scenario are sophisticated and not readily addressed by standard treatment algorithms. Rather, a set of core competencies underpin successful consultations.

The nature and extent of physical, neurocognitive, and psychosocial development that takes place throughout adolescence and young adulthood require clinicians to engage differently with young people than they do with younger children and older adults. Rather than clinicians using parents as the proxy for patient engagement (as is typical of consultations with younger children), the most effective consultations with adolescents require the clinician to directly engage young people themselves. At the same time (and in contrast to consultations with older adults), clinicians are also required to attend to the perspectives, needs, and beliefs of parents and families, whether or not they are physically present in the consultation. As adolescents are inexperienced users of healthcare, their health services also carry the responsibility to build young people's capacity and confidence to engage with heath care and health services, now and in the future.

While consulting with young people alone can be framed as a strategy to assist the young person gain greater competence in engaging with health consultations, many parents are defensive about this, especially when it is not consistent with community expectations. A wider policy context is that the United Nations Convention on the Rights of the Child recognizes young people have the legal right to confidential healthcare, commensurate with growing maturity (Office of the United Nations High Commissioner for Human Rights 1989). Negotiating these contrasting contexts can be challenging (Michaud et al. 2015). The principles underpinning the assessment of adolescent capacity for decision making in clinical care and how bioethics and human rights principles can be applied in clinical practice are described elsewhere in this volume.

A particular challenge for clinicians in low- and middle-income counties is how to help young people, parents, and communities appreciate the value of young people becoming more health

literate and having greater autonomy around decisions that affect their health. Traditional and social media provide opportunities to engage young people and their communities around the health needs faced by young people. In other words, in addition to the responsibilities of heathcare services themselves, there are opportunities for increasing the demand by young people (and families) for quality health services for adolescents.

In sum, the range of individual, interpersonal, community, organizational, and structural factors of relevance for adolescents results in unique challenges for healthcare professionals and the services in which they work. The complexity of adolescent healthcare needs and actions makes a compelling case for ensuring that training in adolescent health and medicine is vertically integrated through every level of health training. Training would cover pre-service through in-service (post-graduate education and continuous medical education), spanning from primary care to specialist practice, and ensuring that the breadth of health professionals (e.g., medicine, nursing, allied heath) gain the requisite attitudes, knowledge, and skills to work effectively with the young.

What is the Core Content of Adolescent Health Training?

It is useful to think about the core competencies required to work effectively with young people, that is, the required attitudes, knowledge, skills, and professional behaviors that underpin quality practices with adolescents and young adults.

The World Health Organization recently published a set of core competencies in adolescent health and development for primary care providers (WHO 2015). Arguably, these are widely relevant beyond primary care and for interdisciplinary audiences. Figure 16.1 shows these competency domains, which have been modified to place more emphasis on the critical importance of communication, which, while having its own set of competencies, is integral to each of the other three domains.

A group of fundamental attitudes support the provision of quality healthcare to young people. While different professional groups and individuals may prioritize and emphasize these differently, below is a list of such attitudes, modified from the WHO (2011, 2015). These attitudes relate to the need for healthcare providers to attend to the following:

- Treat each adolescent with full respect for their human rights;
- Approach all adolescents, including those from marginalized and vulnerable populations, in a non-judgmental and non-discriminatory manner, respecting individual dignity;
- Approach every adolescent as an individual, with differing needs and concerns and differing levels of maturity, health literacy, and understanding of their rights, as well as differing social circumstance in relationship to living arrangements, strength of connection to family, and engagement in education and employment;

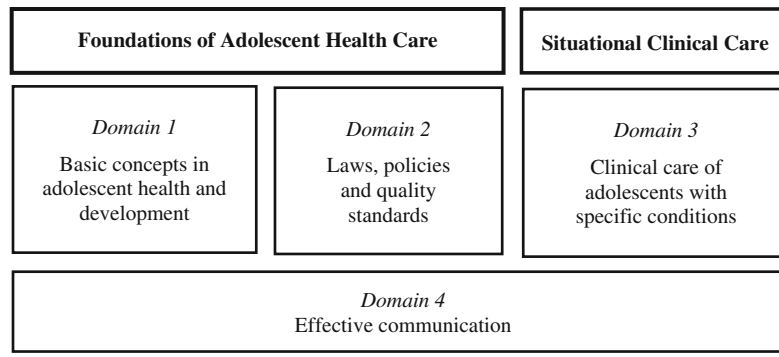


Fig. 16.1 Healthcare providers working with adolescents need competencies across four key domains (modified from WHO 2015)

- Demonstrate empathy, reassurance, non-authoritarian communication, and active listening;
- Offer services that are confidential and private;
- Show respect for adolescents' choices, including their right to consent or refuse physical examination, tests, and interventions;
- Show respect for the knowledge and learning styles of individual adolescents;
- Demonstrate understanding of adolescents as agents of change and as sources of information;
- Approach adolescent healthcare as a process, not a one-off event, and appreciate that adolescents might need time to make decisions and that ongoing support and advice might be needed;
- Demonstrate understanding of the value of engaging in partnerships with adolescents, gatekeepers, and community organizations to ensure quality healthcare services for adolescents;
- Demonstrate awareness of one's own attitudes, values, and prejudices that may interfere with the ability to provide confidential, non-discriminatory, non-judgmental, and respectful care to adolescents.

Domain 1. Basic concepts in adolescent health and development. This relates to being able to demonstrate the understanding of normal adolescent development and the major social determinants of health in adolescence, how these influence health (e.g., uptake of risk behaviors), and the implications of these for healthcare delivery (e.g., the rationale for taking a psychosocial history consulting alone with young people for part of a consultation). This includes engaging young people in healthcare and promoting their capacity for self-management including adherence with medication.

Domain 2. Laws, policies, and quality standards. This relates to being able to demonstrate knowledge of the laws and policies that affect the provision of healthcare to adolescents within the context of their families and communities. This includes knowledge of laws about consent and confidentiality, access to specific health services that might vary by age or context (e.g., sexual health services for unmarried adolescents), and the skills required to work within the law while promoting young people's health. This domain also includes knowledge and skills to deliver healthcare that is consistent with quality standards, including support around the transition to adult healthcare.

Domain 3. Clinical care for adolescents with specific health conditions. Clinical skills are required around a core set of clinical issues including growth and pubertal development, nutrition, common health concerns (e.g., acne), preventive health including immunization, sexual and reproductive healthcare including HIV care, chronic physical health conditions (including disability), chronic mental health conditions, substance use, injuries, and violence.

The relative importance of different health conditions in different parts of the world will influence the balance of knowledge and skills required by clinicians in different countries and regions. For example, mental health, substance use, and chronic physical health problems are the predominant health issues affecting adolescents in HIC, while the management of acute infectious diseases, undernutrition, HIV, and sexual and reproductive health is the predominant need of adolescents in sub-Saharan Africa. The Adolescent Job Aid provides step-by-step assistance to clinicians in managing common presentations or concerns in adolescence (WHO 2010).

Domain 4. Communication. Strong communication skills lie at the heart of consultations with adolescents. While this should be the case with patients of all ages, young people's relative inexperience with health services places greater emphasis on healthcare providers who need to ensure that young people are fully informed around the issue they are consulting about.

Each consultation provides an opportunity to build adolescent health literacy, including adolescents' knowledge of health and health services. Knowledge of adolescent neurocognitive development should inform styles of communication with adolescents. Expertise is also

required at 'triangulating' health consultations, in which both adolescents and parents might participate.

In many parts of the world, integration of these core competencies becomes functionally most evident around the following:

Consent, confidentiality, and privacy. These include how to negotiate for time alone with the young person and knowing how to consult effectively with both the adolescent and the parents. It includes making sure that adolescents know their legal rights about healthcare and how clinicians must operate within the law while providing the highest quality care to the young.

The role of psychosocial history taking. Many services teach the HEADSS approach (Goldenring and Rosen 2004). This is optimal in the context of understanding normal adolescent development and the local epidemiology of common health risks and health problems in adolescents. This approach is most effective when integrated with strong communication skills that enable the history to be taken as a conversation rather than a checklist. Taking a psychosocial history is a strategy for engaging with young people. It is a powerful approach to identifying specific health concerns beyond the presenting complaint (e.g., mental health conditions, interpersonal violence, sexual health risks). It is also an approach that enables delivery of preventative interventions around normative behaviors (e.g., the clinician anticipates future sexual intimacy even when the adolescent is not yet sexually active) and provides a context for anticipatory guidance (e.g., discussion of condoms and contraception).

Building self-management skills in adolescents with chronic health conditions. These skill sets are built on knowledge that as adolescents mature they develop increasing capacity to manage more of their health. Families are still required to supervise health regimens for many adolescents. The usual healthcare provider, whether in primary or specialist care, has an important role in supporting young people to 'step up' and parents to 'step back.'

Transition to adult healthcare. Many young people with chronic health conditions that require specialist care in the child health sector require ongoing engagement with the adult health sector as they mature. This is true for both chronic physical health conditions (e.g., HIV/AIDS, type 1 diabetes, thalassemia) and mental health conditions (e.g., psychosis). Most parts of the world do not have specialist adolescent services. Rather, clinicians are required to help adolescents and young adults with chronic health conditions that require specialist healthcare to navigate the local healthcare system to promote continuity of care.

Community-based networks (health and well-being). Supporting young people to engage with community-based services is an important skill set for clinicians who consult with adolescents. These might include school-based health services, community supports for those with mental health disorders, and opportunities for peer support (e.g., LGBTQ, disability).

Bringing It Together

The rising mortality from HIV/AIDS in adolescents and young adults highlights the significance of these individual core competences for healthcare providers that, when integrated, deliver quality care for adolescents. To manage AIDS among infected young people, healthcare professionals need a comprehensive understanding of laws about consent and confidentiality, as well as an appreciation of the significance of privacy in healthcare for young people. Promoting behaviors that protect young people's current and future sexual partners is best done with the knowledge of the risk and protective factors in their lives. This can be achieved through taking a psychosocial history. Adherence behaviors for antiviral medication will be supported by knowledge of adolescent development and by promoting the development of adolescent competences in self-management. There is a serious risk that, without careful planning, young people

will fail to transfer to adult healthcare services and will drop out of care during the adolescent years. Mitigating this risk requires health service programs to work in partnership to foster a smooth transition between child- and adult-focused services. In addition to promoting health access for adolescents, a culture of care that actively engages young people is essential for an effective continuum of care.

Tiered Training in Adolescent Health and Medicine

The challenge for educators and professional accreditation bodies is to embed evidence-based approaches to teaching adolescent health at all stages of learning and to ensure that there is a seamless developmental progression so that more advanced learners are supported to develop more advanced skills, consistent with prior learning (Sawyer et al. 2013).

Core competencies in adolescent health and medicine are first introduced at the level of pre-service education and are relevant for students from different health disciplines. Pre-service education occurs in universities, colleges, and schools, such as medical and nursing schools. The goal of this training is to equip all students with the basic, broad knowledge, skills, and attitudes they will need for future professional roles, such as a doctor or nurse.

This is followed by more specific education, referred to as in-service or postgraduate education, which supports advanced practice in more defined professional roles, such as pediatric medicine or nursing. In most parts of the world, formal accreditation by professional bodies is required before graduates are able to practice in these roles, including in primary care. Beyond this, some parts of the world recognize and accredit advanced skill sets where professionals function in more specialized roles in relationship to adolescent health and medicine, whether in relationship to clinical practice, teaching, research, public policy, and advocacy. Across each of these tiers of health education, a focus on core competencies (attitudes, knowledge, and skills) is required which becomes more advanced as students progress to higher levels of learning.

Like most other areas of health, there is no standardization of pre-service or in-service education around adolescent health nationally or globally. Individual academic and clinical leaders within universities and schools, and within national professional and accrediting associations, develop curriculum and criteria for competency. Implementation is then shaped by academic capacity, influenced by many different local contextual factors including policy environments.

Availability of Training in Adolescent Health

Pre-service teaching. In most parts of the world where adolescent health is taught at a pre-service level, teaching appears to be primarily delivered within the 'pediatric' or 'child health' curriculum. However, the extent to which adolescent health is taught is unknown. This includes a lack of information about the proportion of teaching programs that include adolescent health, lack of information about which disciplines teach it, lack of information about the content of what is taught, and lack of information about the assessment frameworks to assess competency (i.e., learning outcomes).

Audit questionnaires to determine what was being taught in European's medical curricula were sent to the national medical association in 48 countries. Of these, 29 associations responded. Of those, pre-service education in adolescent medicine was offered in 14 countries, all within the pediatric curriculum (Ercan et al. 2009). In 2015, a special edition of the International Journal of Adolescent Health and Medicine focused on country-level advances in adolescent health, with particular attention paid to the teaching and training landscape. It was apparent that adolescent health is inconsistently addressed within pre-service education, even within the same country. Conversely, there are also notable examples of increasing focus on adolescent health at a pre-service level. For

instance, The University of Melbourne changed the name of its 10-week pre-service course on 'Pediatrics' to 'Child and Adolescent Health.' The intent of this was twofold. One intent was to bring a stronger orientation of 'health' to match the strength of the existing focus on disease. The other was to more explicitly recognize the importance of health for all children, not just the very young (Sawyer et al. 2015). At that university, it is noteworthy that adolescent health is also included within both the 'Women's Health' and 'General Practice' courses, which provides important opportunities for reinforcement and enhancement of learning as desired for foundation knowledge, attitudes, and skills.

Another example is the University of Lisbon, Portugal, which, as described in another chapter in this volume, introduced adolescent medicine as an elective 28-h course for 4th and 5th year medical students in 2012. Four years ago, it became a core element of the pediatrics' curriculum within the Faculty of Medicine.

Pre-service training in adolescent health is highly relevant for many different disciplines, including medicine, nursing, and allied health (e.g., psychology, social work). Furthermore, at the pre-service level, many of the core competencies will be common, whether in relationship to attitudes, knowledge, or skills. This suggests there are many places within the pre-service curriculum that could offer an academic home to adolescent health and medicine (see Fig. 16.2).

Efforts have been made to understand the common elements of adolescent health across different domains within medicine. For example, in India, a mapping exercise highlighted the extent of overlap of core competences of adolescent health within the pre-service medical curriculum. In this case, there was interest from lecturers within pediatrics, primary care, obstetrics and gynecology, and internal medicine to teach adolescent health. This led to the development of a common curriculum that could be delivered by academics within any of these different disciplines (Chatterjee 2008). Given the lack of capacity in many universities around pre-service adolescent health education, such flexible approaches, whereby in one university, the lead academic or teacher responsible for students acquiring core competencies in adolescent health might be a child health expert, while at another school or college, it might be a primary care academic, are encouraged.

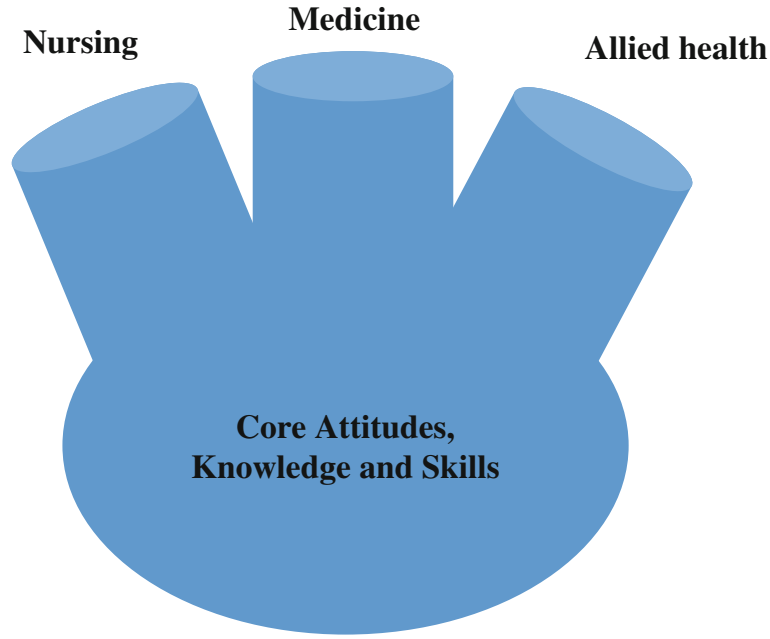


Fig. 16.2 Adolescent health core competencies (attitudes, knowledge, skills) have wide relevance for many different health disciplines, including medicine, nursing, and allied health

Within this model, strategies to ensure that there are clear linkages between the teaching discipline (e.g., primary care) and the related disciplines (e.g., child health, women's health) at a pre-service level are required. Without such linkages, there is a risk that, over time, the pedagogical focus will drift away from core competences toward the more specific requirements of the discipline. Figure 16.3 illustrates the relevance of core competences in adolescent health to different medical disciplines.

Given the wide relevance of adolescent health competencies for different health disciplines that often need to work collaboratively, there are also distinct opportunities for interdisciplinary teaching and learning, whether at the pre-service level or beyond. The opportunity provided by interdisciplinary learning is for different disciplines to come together to learn within the same environment. While this has been largely framed as enhancing learning outcomes around interdisciplinary professional practice (Dufrene 2012), the relative lack of academic expertise across the disciplines that need to acquire core competences in adolescent health provides opportunities for teaching efficiencies that could stem from interdisciplinary learning approaches. More widely, a focus on specific clinical issues can be used as a vehicle for interdisciplinary learning that also covers core competencies in adolescent health. The school-based Triple A Program (Adolescent Asthma Action) is an example of this. Interdisciplinary learning with medical, nursing, and pharmacy students (Saini et al. 2011) has been built around the original evidence-based program that was shown to both improve medical student competencies and improve adolescent health outcomes (tobacco, asthma) (Shah et al. 2001).

Postgraduate training in adolescent health. The extent to which adolescent health is taught within in-service or postgraduate training programs in different countries is also largely unknown. The previously noted audit of adolescent health teaching in Europe (Ercan et al. 2009) suggests that the assessment of adolescent health is included within 19 pediatric residency programs and 17 general practice or family medicine training programs. However, responses were only obtained from 29 of 48 national associations, a number of associations were uncertain of the status of adolescent heath teaching and

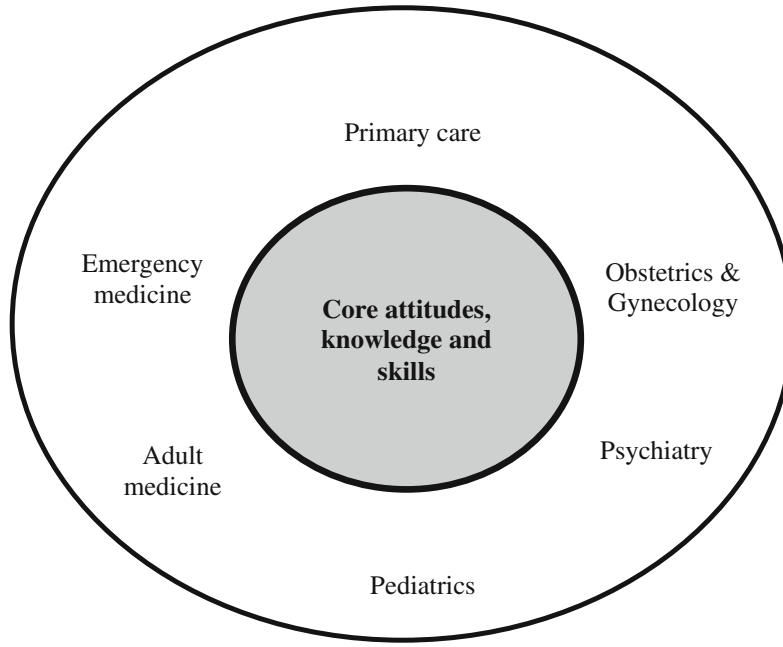


Fig. 16.3 Adolescent health core competencies for different disciplines (modified from Sawyer et al. 2007)

assessment nationally, and the extent of assessment was not requested.

While individual hospitals and academic centers offer various fellowship programs in adolescent health and medicine, only some countries formally recognize such advanced practice through certification. Since 1994, Board certification in Adolescent Medicine has been available in the USA to doctors training within pediatric medicine, internal medicine, and family medicine programs through a three-year fellowship in adolescent medicine. In Canada, adolescent medicine has been recognized as a subspecialty of pediatrics since 2007. Adolescent medicine is being increasingly recognized as a subspecialty of pediatrics in many other parts of the high-income world, such as Switzerland and Singapore, even in the absence of formal accreditation programs. In Australia, there are plans for the specialty to be known as 'Adolescent and Young Adult Medicine' with board certification available to trainees in pediatric and internal medicine (Sawyer et al. 2015).

The recognition of advanced practice skills is important for advancing more consistent approaches to training the future workforce. Historically, advances in teaching and training were led by committed individuals with a high level of expertise in adolescent health and medicine. More recent gains that have led to more sustained initiatives, or that involve greater scale, have emerged from settings where there are both a critical mass of adolescent health expertise and an enabling environment. The enabling environment includes aspects of policy such as the support of professional organizations or government policies, as well as access to resources and skills that are often best achieved through active linkages and collaborations.

Countries that offer reasonable access to advanced training in adolescent health and medicine have had professional associations that have supported this work at the policy interface. In the USA, for example, this includes the Society for Adolescent Health and Medicine, the American Academy of Pediatrics, and the American Medical Association. These professional bodies have been responsible for establishing a prerequisite that all postgraduate trainees in pediatrics, for example, have core competencies in adolescent medicine. Other countries, such as Malaysia, have developed strong professional associations (i.e., the Malaysian Pediatric Association and the Malaysian Association of Adolescent Health), which have helped create a culture where competences in adolescent health are informally acknowledged. This is also true for countries such as the UK.

Yet, most of these countries are not moving toward certification (or employment) of adolescent physicians. One question is whether failure to invest in creating a cadre of future leaders may limit future opportunities to advance the necessary expansion in country-level capacity in adolescent health and medicine.

Leadership for Scale

In the USA, the LEAH program (Leadership in Adolescent Health Education) is an important model that highlights the benefits that can be achieved from government investment to support interdisciplinary training for healthcare professionals. The intent of the LEAH program, which currently funds seven training sites, is to train the next generation of leaders in adolescent health. The goal is to build their capacity in public health policy, research, clinical care, and advocacy. The program focuses on five disciplines—medicine, nursing, social work, psychology, and nutrition. The LEAH program has had great success in retaining trainees in adolescent health who are demonstrably functioning in leadership roles.

Funded by the Maternal and Child Health branch, the LEAH program funds training sites which have the necessary critical mass to support

high-quality training for future leaders. This program model could be readily replicated by governments elsewhere.

Critical mass of adolescent health and medicine expertise has similarly underpinned other teaching and training efforts. This includes the development of various short courses in adolescent health and development. One example is EU-Teach, a European collaboration that grew out of the University of Lausanne's academic and clinical expertise in adolescent health and medicine. The focus was initially on promoting clinical competency. More recently, support is also provided to local leaders in adolescent health and medicine to promote local teaching and training initiatives.

Another short course, offered by the London School of Hygiene and Tropical Medicine, focuses on professionals within the health sector in low- and middle-income countries.

There are also degree programs that exclusively focus on adolescent health but for a variety of professionals, including those from health backgrounds (e.g., nurses, general practitioner) and others from non-health backgrounds (e.g., youth workers, police). As an illustration, The University of Melbourne offers an online multidisciplinary postgraduate qualification in adolescent health and development, with a graduate certificate, diploma, and master program available. Another example is in France, where a collaboration of universities awards a diploma in adolescent health and medicine (Diplome Inter-Universitaire).

Health professional associations have also developed various non-certificate learning opportunities. The United Kingdom Department of Health funded the Royal College of Paediatrics and Child Health to develop a comprehensive online resource on adolescent health. The resources are relevant for multidisciplinary health professionals, including the following: nurses, general practitioners, pediatricians, obstetricians, gynecologists, and psychiatrists. Another example is provided by the Royal Australasian College of Physicians, which has developed a more limited online training resource to support basic trainees in pediatric and internal medicine to gain the required competencies in adolescent health and medicine.

Massive Open On-Line Courses, known as MOOCS, provide an exciting opportunity to really take training to scale, as free courses are delivered online (certification of completion carries a nominal cost). The first MOOC on Global Adolescent Health was developed by The University of Melbourne in 2015. Over an eight-week period, a variety of topics was covered. These included the following: conceptualizations of adolescence and how these have changed over time; adolescent development within a life course perspective on health; the social determinants of health in adolescence; the major health issues affecting young people, such as mental health, sexual and reproductive health, injury and accidents, NCDs and health risk behaviors; and adolescent health policy and programming, including intervention and prevention frameworks, legal and human rights issues, measurement and indicators of adolescent health.

In contrast to this adolescent-specific MOOC, the London School of Hygiene and Tropical Medicine has developed a six-week MOOC that covers the health of adolescents, mothers, newborns, and children. Other recent MOOCS of relevance include one on Global Sexual and Reproductive Health and Rights from The University of Lund, Sweden.

A major strength of MOOCs is the capacity to overcome geographical barriers to learning through the online environment. This enables learners to flexibly engage with the online course material when it best suits them. In addition to lectures, another strength of this online platform is the capacity to engage learners through online discussions where individuals gain insights and feedback from other students taking the course.

There are additional opportunities that come from integrating the material within MOOCs to

the 'flipped classroom.' In this regard, one can envision how some of the materials provided within a MOOC become the prerequisite for tutorials that might focus more specifically on local issues of relevance to a smaller group of learners. The versatility of the learning platform suggests many future opportunities for innovative teaching around adolescent health.

Harnessing Young People's Voices

A key innovation in pedagogy in adolescent health and medicine has been to harness the power of young people within teaching and training, as well as within the assessment frameworks. Many trainers in adolescent health appreciate the influence on adult learning when young people speak for themselves about what they like and do not like about health services, and the various barriers they face in accessing them—among other factors. A common challenge is the sustainability and cost of engaging young people in this way.

One successful approach is the 'Hands on HEADSS' program, a collaboration between the University of Melbourne (Faculty of Medicine, Department of Paediatrics and the Postgraduate School of Education) and local secondary schools. In this program, students in the 9th and 10th grades taking classes in Drama and English are trained to take on the role of a simulated patient. The opportunity for immediate feedback to medical students around their efforts to take a psychosocial history is highly rated by medical students (Sawyer et al. 2015).

Linkage to wider infrastructure that supports simulation-based medical education can help ensure the sustainability of this teaching endeavor. An example is collaboration between Israeli adolescent physicians and the Israel Center for Medical Simulation, a national facility, which aims to improve clinical and communication skills using an error-driven approach. They train adolescent actors from a local high school for the arts to simulate various clinical cases, including aspects of confidentiality, home, and school concerns. This has become a central aspect of adolescent health education in Israel, for both primary care and pediatrics (Ziv et al. 2006; Hardoff and Schonmann 2001).

Effectiveness of Adolescent Health Training

Training in adolescent health and medicine improves the clinical performance of medical undergraduates (Feddock et al. 2009), early professional learners (Sawyer et al. 2013), and experienced clinicians alike (Sanci et al. 2000). Some approaches focus more on situational clinical skills (Damle et al. 2015), while others focus more on communication (Sanci et al. 2000). Even relatively short seminars can powerfully influence attitudes, knowledge, and skills (Feddock et al. 2009). Online learning should not be seen to replace the power of clinical teaching, which can be delivered using both real and simulated patients. For example, evaluation of the previously mentioned adolescent health training resource developed by the Royal Australasian College of Physicians in Australia showed that access to the resource improved knowledge and confidence in applying that knowledge to clinical scenarios. An important finding was that most respondents also welcomed the opportunity for structured clinical teaching as a adjunct adjunct to the resource (Sawyer et al. 2013).

Medical and nursing professionals experience multiple barriers when trying to deliver more comprehensive and prevention-oriented care to young people. These include limited time, lack of reimbursement, lack of skills, confidence about how to respond, and limited availability of specialist services (Sanci et al. 2012). An educational intervention for general practitioners that used evidence-based strategies to change clinician behavior led to improved communication skills and the increased assessment of health risks using simulated adolescent patients (Sanci et al. 2000, 2003). The intervention also improved the general practitioners' rating of their competency in youth health, which was maintained five years after the training (Sanci et al. 2005).

While training in adolescent health improves the competencies and confidence of health professionals, a central question is whether the attainment of core competencies in adolescent health improves young people's health behaviors and health outcomes. This is a challenging question to address directly. At one level, reassurance can be provided that greater competence of learners means that they are more able to engage adolescent patients. They can better identify health concerns and better develop management plans that are cognizant of the medicolegal context of complex situations. Such evidence suggests that at the very least, a higher quality of healthcare is provided.

A particular interest is the role of primary care in delivering preventive interventions. Two notable studies measured the impact of routine assessment of health risks during 'well visits' (Walker et al. 2002; Ozer et al. 2011). In the setting of pediatric outpatient clinics in the USA, Ozer and colleagues tested the effectiveness of health risk screening guidelines combined with preventive counseling and comprehensive training (Ozer et al. 2011). There was evidence of increased detection and discussion of risky behaviors by the clinicians. There were also some suggestions of health benefits, with significant increases in adolescent helmet use and trends toward lower rates of tobacco use, unsafe sexual intercourse, and greater seat belt use when compared to routine care.

The second study was a randomized controlled trial of preventive health counseling for teenagers in the UK who had well visits with general practice nurses (Walker et al. 2002). There was a positive movement along the 'stages of change' continuum at 3 months for smoking, diet, and exercise. These changes were not sustained at 12 months. Other benefits included increased awareness of confidential healthcare and better mental health scores for those who were depressed. There was no difference in reported risk taking at 3 or 12 months. There is some evidence that such interventions may be more effective when delivered opportunistically (Borowsky et al. 2003).

A recent meta-analysis suggests there is evidence that integrating medical with behavioral health interventions within primary care improves behavioral health outcomes in young people (Asarnow et al. 2015). This adds weight to the importance of primary care as a setting to identify and respond to health risks in the young. A recent cluster randomized control trial of 42 general practices set out to explore the effectiveness of a complex intervention that included the routine assessment of health risks followed by best practice approaches to motivating change around adolescent risk-taking behaviors (Sanci et al. 2015). The complex intervention improved the detection by GPs of health risk behaviors in young people, with high acceptance by adolescents of routine assessment. This is important given that primary care, including school-based health services, has opportunities to reinforce behavior change messages over time. The impact on health outcomes was less conclusive. New technologies provide important opportunities to identify adolescents at greater risk (e.g., waiting room surveys) that could prompt more targeted interventions that may be more efficient and effective.

Conclusion

The changing health profile of adolescents across the world challenges health services to become better orientated to the health needs of young people. More intensive training for healthcare workers is required with the goal of embedding a set of core competencies into routine clinical practice with young people. Some of the barriers experienced by young people in accessing healthcare can be overcome by training (e.g., judgmental staff attitudes or scolding of risky behaviors). Others require wider investments, such as fiscal measures to reduce the cost of healthcare to the young, or service orientations that overcome geographical barriers (e.g., school-based health services and m-health interventions). To date, greater investment in adolescent health teaching and training has arisen in

countries with strong professional associations, which have developed a critical mass of clinicians with advanced practice skills who function as lead educators. Beyond these initiatives, the urgent need for workforce training suggests the importance of short-term investments in online training programs, as these are much more highly scalable. However, in the medium term, quality education will require strong support from national professional associations and investment in training local academic leaders.

References

Asarnow, J. R., Rozenman, M., Wiblin, J., & Zeltzer, L. (2015). Integrated medical-behavioral care compared with usual primary care for child and adolescent behavioral health: A meta-analysis. *JAMA Pediatrics, 169*(10), 929–937.

Borowsky, I. W., Mozayeny, S., & Ireland, M. (2003). Brief psychosocial screening at health supervision and acute care visits. *Pediatrics, 112*(1), 129–140.

Broutet, N., Lehnertz, N., Mehl, G., Camacho, A. V., Bloem, P., Chandra-Mouli, V., et al. (2013). Effective health interventions for adolescents that could be integrated with human papillomavirus vaccination programs. *Journal of Adolescent Health*, *53*(1), 6–13.

Chatterjee, S. (2008). Recommendations on curriculum on adolescent health for UG and PG medical education, 2009. *Indian Journal of Public Health, 53*(2), 115–121.

Crone, E. A., & Dahl, R. E. (2012). Understanding adolescence as a period of social—Affective engagement and goal flexibility. *Nature Reviews Neuroscience, 13*(9), 636–650.

Damle, L. F., Tefera, E., McAfee, J., Loyd, M. K., Jackson, A. M., Auguste, T. C., et al. (2015). Pediatric and Adolescent Gynecology Education through Simulation (PAGES): Development and evaluation of a simulation curriculum. *Journal of Pediatric and Adolescent Gynecology, 28*(3), 186–191.

Desalegn, H., Solberg, E., & Kim, J. Y. (2015). The global financing facility: Country investments for every woman, adolescent, and child. *The Lancet, 386* (9989), 105–106.

Dufrene, C. (2012). Health care partnerships: A literature review of interdisciplinary education. *Journal of Nursing Education, 51*(4), 212–216.

Ercan, O., Alikasifoglu, M., Erginoz, E., Jand, J., Kabicek, P., Rubino, A., et al. (2009). Demography of adolescent health care delivery and training in Europe. *European Journal of Pediatrics*, *168*(4), 417–426.

Feddock, C. A., Hoellein, A. R., Griffith, C. H., Wilson, J. F., Lineberry, M. J., & Haist, S. A. (2009). Enhancing knowledge and clinical skills through an adolescent medicine workshop. *Archives of Pediatrics and Adolescent Medicine, 163*(3), 256–260.

Goldenring, J. M., & Rosen, D. S. (2004). Getting into adolescent heads: An essential update. *Contemporary Pediatrics Montvale*, *21*(1), 64–92. Retrieved from http://familymedicine.uchicago.edu/Content/Adolescent%20Medicine%20(Sonia%20Oyola)_Getting%20Into%20Adolescent%20Heads-An%20Essential%20Update_ChalkOnly.pdf

Gore, F. M., Bloem, P. J., Patton, G. C., Ferguson, J., Joseph, V., Coffey C., et al. (2011). Global burden of disease in young people aged 10–24 years: A systematic analysis. *The Lancet*, *377*(9783), 2093–2102.

Hardoff, D., & Schonmann, S. (2001). Training physicians in communication skills with adolescents using teenage actors as simulated patients. *Medical Education, 35*(3), 206–210.

Kasedde, S., Luo, C., McClure, C., & Chandan, U. (2013). Reducing HIV and AIDS in adolescents: Opportunities and challenges. *Current HIV/AIDS Reports, 10*(2), 159–168.

Michaud, P. A., Blum, R. W., Benaroyo, L., Zermatten, J., & Baltag, V. (2015). Assessing an adolescent's capacity for autonomous decision-making in clinical care. *Journal of Adolescent Health, 57*(4), 361–366.

Office of the United Nations High Commissioner for Human Rights. (1989). Retrieved from http://www.unicef.org/rightsite/

Oliver, D., Foot, C., & Humphries, R. (2014). *Making our health and care systems fit for an ageing population*. London: The King's Fund.

Ozer, E. M., Adams, S. H., Orrell-Valente, J. K., Wibbelsman, C. J., Lustig, J. L., Millstein, S. G., et al. (2011). Does delivering preventive services in primary care reduce adolescent risky behavior? *Journal of Adolescent Health*, *49*(5), 476–482.

Patel, V., Flisher, A. J., Hetrick, S., & McGorry, P. (2007). Mental health of young people: A global public-health challenge. *The Lancet, 369*(9569), 1302–1313.

Patton, G. C., Coffey, C., Sawyer, S. M., Viner R. M., Haller D. M., Bose K., et al. (2009). Global patterns of mortality in young people: A systematic analysis of population health data. *The Lancet*, *374*(9693), 881–892.

Patton, G. C., Romaniuk, H., Spry, E., Coffey, C., Olsson, C., Doyle, L. W., et al. (2015). Prediction of perinatal depression from adolescence and before conception (VIHCS): 20-year prospective cohort study. *The Lancet*, *386*(9996), 875–883.

Patton, G. C., Ross, D. A., Santelli, J. S., Sawyer, S. M., Viner, R. M., & Kleinert, S. (2014). Next steps for adolescent health: A Lancet Commission. *The Lancet, 383*(9915), 385–386.

Saini, B., Shah, S., Kearey, P., Bosnck-Anticevich, S., Grootjans, J., & Armour, C. (2011). An interdisciplinary learning module on asthma health promotion. *American Journal of Pharmaceutical Education, 75*(2), 30.

Sanci, L., Chondros, P., Sawyer, S., Pirkis, J., Ozer, E., Hegarty, K., et al. (2015). Responding to young people's health risks in primary care: A cluster randomised trial of training clinicians in screening and motivational interviewing. *PloS One*, *10*(9), e0137581. doi:10.1371/journal.pone.0137581

Sanci, L., Coffey, C., Patton, G., & Bowes, G. (2005). Sustainability of change with quality general practitioner education in adolescent health: A 5-year follow-up. *Medical Education, 39*(6), 557–560.

Sanci, L., Glover, S., & Coffey, C. (2003). Adolescent health education programmes: Theoretical principles in design and delivery. *Annals of the Academy of Medicine, Singapore, 32*(1), 78–85.

Sanci, L., Grabsch, B., Chondros, P., Shiell, A., Pirkis, J., Sawyer, S., et al. (2012). The prevention access and risk taking in young people (PARTY) project protocol: A cluster randomised controlled trial of health risk screening and motivational interviewing for young people presenting to general practice. *BMC Public Health*, *12*(1), 1.

Sanci, L. A., Ker, J., Coffey, C. M. M., Veit, F. C. M., Carr-Gregg, M., Patton G. C., et al. (2000). Evaluation of the effectiveness of an educational intervention for general practitioners in adolescent health care: Randomised controlled trial commentary: Applying the BMJ's guidelines on educational interventions. *BMJ*, *320*(7229), 224–230.

Sawyer, S. M., Afifi, R. A., Bearinger, L. H., Blakemore, S. J., Dick, B., Ezeh, A. C., et al. (2012). Adolescence: A foundation for future health. *The Lancet*, *379*(9826), 1630–1640.

Sawyer, S. M., Conn, J. J., Reid, K. J., Dodds, A. E., Hudson, L., Yeo, M., et al. (2013). Working with young people: Evaluation of an education resource for medical trainees. *Journal of Paediatrics and Child Health*, *49*(11), 901–905.

Sawyer, S. M., Farrant, B., Hall, A., Kennedy, A., Payne, D., Steinbeck, K., et al. (2015). Adolescent and young adult medicine in Australia and New Zealand: Towards specialist accreditation. *International Journal of Adolescent Medicine and Health*, *28*(3).

Sawyer, S. M., Sanci, L. A., Conn, J. J., & Patton, G. C. (2007). A training agenda in adolescent medicine and health. *International Journal of Adolescent Medicine and Health, 19*(3), 305–316.

Shah, S., Peat, J. K., Mazurski, E. J., Wang, H., Sindhusake, D., Bruce, C., et al. (2001). Effect of peer led programme for asthma education in adolescents: Cluster randomised controlled trial. *BMJ*, *322* (7286), 583.

Sivagurunathan, C., Umadevi, R., Rama, R., & Gopalakrishnan S. (2015). Adolescent health: Present status and its related programmes in India. Are we in the right direction? *Journal of Clinical and Diagnostic Research*, *9*(3), LE01.

United Nations Children's Fund (UNICEF). (2011). *The state of the world's children 2011—Adolescence: An age of opportunity*.

United Nations Population Fund. (2013). *Motherhood in childhood: Facing the challenge of adolescent pregnancy: UNFPA State of World Population 2013*. United Nations Population Fund, 2012.

USAID. (2012). *Youth in development. Realising the demographic opportunity*. Washington, DC: USAID.

Viner, R. M., Coffey, C., Mathers, C., Bloem, P., Costello, A., Santelli, J., et al. (2011). 50-year mortality trends in children and young people: A study of 50 low-income, middle-income, and high-income countries. *The Lancet*, *377*(9772), 1162–1174.

Viner, R. M., Ozer, E. M., Denny, S., Marmot, M., Resnick, M., Fatusi A., et al. (2012). Adolescence and the social determinants of health. *The Lancet*, *379* (9826), 1641–1652.

Walker, Z., Townsend, J., Oakley, L., Donovan, C., Smith, H., Hurst, Z., et al. (2002). Health promotion for adolescents in primary care: Randomised controlled trial. *BMJ*, *325*(7363), 524.

World Health Organization. (2010). *Adolescent job aid. A handy desk reference tool for primary level heath workers*. Geneva: World Health Organization.

World Health Organization. (2011). *Sexual and reproductive health: Core competencies in primary care*. Geneva: Word Health Organization.

World Health Organization. (2014). Health for the world's adolescents: A second chance in the second decade. Available on line: http://apps.who.int/adolescent/second-decade/

World Health Organization. (2015). *Core competencies in adolescent health and development for primary care providers*. Geneva: World Health Organization.

Ziv, A., Erez, D., Munz, Y., Vardi, A., Barsuk, D., Levine, I., et al. (2006). The Israel Center for Medical Simulation: A paradigm for cultural change in medical education. *Academic Medicine*, *81*(12), 1091–1097.

How an Adolescent Health Curriculum Was Implemented in Portugal

17

Helena Fonseca

Introduction

The current cohort of young people worldwide is the largest it has ever been. Young people 10 through 24 years of age represent one-quarter of the world's population. Four out of five young people live in less developed countries, representing up to one-third of those countries' populations. According to the last available data, Portugal (INE 2013), adolescents (10–19 years of age) and young people (10–24) represent respectively, 10.53 and 15.94 % of the Portuguese population, corresponding to 10,427,301 young people.

It is estimated that nearly two-thirds of premature deaths and one-third of the total disease burden in adults are associated with conditions or behaviors that began during adolescence (Mundial 2007). In fact, some health problems and health-related behaviors (e.g., smoking, diet, exercise) acquired during adolescence have a negative impact during adolescence, while others have their impact in adulthood, and still others have their impact in the next generation.

Over the last decades, mortality rates in all age groups have declined. Mortality among young people, however, has decreased less than in other age groups, overtaking childhood mortality in some high-income countries (Viner et al. 2011). What is really quite impressive is that most deaths in this age range are preventable. In Portugal, the leading causes of death in the 10–19 years age group are accidents (141 deaths in 2013), followed by tumors (80 deaths), a wide range of medical causes (50), suicide (11), infectious diseases (8), and homicide (5).

Adolescents have specific characteristics, capabilities, and needs that evolve throughout the second decade of life. Many behaviors initiated during adolescence (unprotected sex, physical inactivity, the use of tobacco, alcohol, and illicit drugs) have important consequences for health in adulthood. Even so, there is evidence that positive interventions during adolescence can avert negative outcomes in adulthood.

Improvement of global adolescent health is an important challenge and opportunity faced by all countries. In developed countries, the proportion of psychosocial and behavioral morbidities continues to increase leading to the need for healthcare systems to adapt to this reality. In less developed countries, the nature of demands on adolescent health care is distinct, and the challenge here is to be able to address priority health issues as well as accommodate the age-specific needs of this population.

In light of this, the education of tomorrow's medical doctors must in our view include

H. Fonseca (✉)
Faculty of Medicine, Department of Paediatrics, Adolescent Medicine Unit, Lisbon, Portugal
e-mail: helenaregalofonseca@gmail.com

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_17

adolescent health and the acquisition of communication and interdisciplinary approach skills. WHO strongly advocates that every provider working with adolescents should have core competencies in adolescent health, and further promotes a competency-based training in adolescent health and development (MCA 2014).

Other organizations, such as the International Pediatric Association (IPA), point in the same direction (IPA 2015). The IPA Adolescent Medicine Technical Advisory Group has elected as a priority for the current mandate:

(1) In partnership with National Pediatric Societies, advocate for expanding the pediatric age to 18 years in every country across the world.
(2) Strengthen the adolescent development and health content of undergraduate training for Pediatric residents.
(3) Advocate for inclusion of an Adolescent Medicine curriculum as part of the "common trunk training" in Pediatrics (in Europe, "common trunk training" refers to the core pediatric training and curriculum).

In fact, IPA recognizes that there is a need for strengthening the adolescent development and health content of undergraduate training for Pediatric Residents. At the postgraduate level, IPA promotes the training of health professionals in order that they get the knowledge and the skills for taking care of adolescent patients, understand them, being trusted by them, and able to provide answers to their needs in a successful way.

Adolescent Medicine focuses on the assessment, diagnosis, and management of health issues within the context of the major biopsychosocial events that define this age range.

Formal training curricula in Adolescent Medicine have been developed first in the USA, followed by Canada and Australia. In the USA, Adolescent Medicine emerged as a subspecialty in the second half of the twentieth century. For a long time, the USA has been the only country with an official board certification examination in Adolescent Medicine. The three-year fellowship programs in the USA have the objective of providing advanced training in adolescent health care to physicians coming from different specialties, who elect to broaden their capacity in caring for adolescents.

In Europe, there was a complete absence of interest among pediatrician to obtain additional knowledge on Adolescent health care and promotion. Therefore, the inclusion of periods of clinical exposure to adolescent health issues in the common trunk of the Pediatric residency curriculum is deemed important. The objective would be to enable all Pediatric trainees to acquire basic medical knowledge, clinical skills, and attitudes needed to be able to effectively provide adolescent care. However, in order to become a medical expert in Adolescent Medicine, the resident would need further training.

The Experience at the Lisbon Academic Medical Center

At the Lisbon Academic Medical Center which includes the Faculty of Medicine of Lisbon, Santa Maria University Hospital, and the Institute of Molecular Medicine, measures were undertaken, both at the pre- and postgraduate level, in order to train medical students, pediatricians, and health professionals in general in Adolescent Health and Medicine. Four initiatives took place in this context: (I) Adolescent Medicine Elective Course for Medical Students (2000—); (II) Inclusion of Adolescent Medicine in the discipline of Pediatrics I (2011—); (III) Master Degree in Adolescent Health (2010–2015); (IV) Fellowship in Adolescent Medicine (2014—).

Developing Adolescent Medicine as an Elective Course

In 1999, the Faculty of Medicine at the University of Lisbon, Portugal, saw a need to incorporate adolescent health issues into the medical curriculum. By that time, I had just returned from my Master and Fellowship in Adolescent Health at the University of Minnesota and was keen to further develop the field of Adolescent Health in my country.

To begin, there was a complete absence of interest among pediatricians, who did not regard

adolescents as an underserved age group for two primary reasons: first, the broad misconception that Adolescent Health is predominantly mental health; second, the fact that once a physician decided to become a pediatrician, that physician was no longer willing to take care of grown-ups. In contrast, there were already in place a few pioneer physicians at the primary care level who decided to start Adolescent Health consultations in their primary care setting.

We then started advocating for the inclusion of Adolescent Medicine as a section inside the Portuguese Paediatric Society, which eventually happened in the year of 2000. From then on, consistent steps of increasing recognition of the field took place. The first Adolescent Health Congress took place in 2002 and every two years from then onward. In 2005, we organized in Lisbon the 8th International Association for Adolescent Health World Congress (IAAH).

Step by step, pediatricians started to realize that in order to more effectively cover the needs of the pediatric age group (0–18 years), they should get specific training on adolescent health issues. We conducted a survey of all pediatricians registered at the Paediatric Board of the College of Physicians in 2002, and in spite of the low response rate, a need for training was evident (Fonseca and Marcelino 2002).

Given this situation, my personal view as a pediatrician directly involved in teaching medical students was that we should prioritize the training in adolescent health, starting by including adolescent health components in the pre-graduation curriculum. The objective was to provide every medical doctor with some training in adolescent health. There was receptivity from the Faculty of Medicine Scientific Committee to do so, and in the year 2000, the first group of students was exposed to formal training in Adolescent Medicine, offered as a 28-h elective course. Until 2008/09, the course was offered once a year, with a limited admission of 25 students, and twice a year after 2008/09. Fourth- and fifth-grade medical students are eligible. In 1999/2000, 2002/03, 2007/08, and 2009/10, it did not take place due to the lack of applications (in order to be feasible, it was estimated the need for a minimum of 10 students).

The main objective of the course is to provide medical students with the basic knowledge and skills to take appropriate care of adolescents, as future providers, whatever the medical specialty they will choose. Box 1 explains course objectives and teaching methodology. Box 2 describes the curriculum content.

BOX 1: Adolescent Medicine Elective Course: Learning Objectives and Teaching Methodology

Learning Objectives

- To understand how and why an adolescent is different from a child and from an adult.
- To understand what are the specific health needs of this age.
- To learn how to assess the adolescent from a biopsychosocial perspective.
- To discuss possible ways of intervening in Adolescent Health.

Teaching Methodology

- Interactive lectures with periodical checks for understanding (pausing every few minutes to see whether students are following along with the lesson allows for the identification of gaps in comprehension and favors discussion).
- In-class activities (having students work in pairs or small groups to solve problems enables space for powerful peer-to-peer learning and enriching class discussions).
- Case scenario discussions about adolescent patients.
- Role-play techniques with simulated patients for training of the clinical interview.
- Clinical placement at the Adolescent Outpatient Clinic.

Box 2: Adolescent Medicine Elective Course: Curriculum Content

- The adolescent period: epidemiology, opportunities, and challenges
- Biopsychosocial development
- Growth and pubertal development (Tanner stages, growth spurt)
- Maturation rates (early, average, and late maturity)
- Cognition (concrete vs. abstract thinking) and emotional life
- Sleep (quality, amount, and disturbances)
- The peer group
- The family
- Communication (including interview techniques)
- Protective and risk factors
- Sexual health
- Adolescent pregnancy
- The adolescent with a chronic condition.

On the last day of the course, an anonymous voluntary questionnaire is used to assess students' degree of satisfaction with the course, including a 1–5 Likert scale (1—not satisfied at all; 5—very satisfied), followed by a written reflection. The scale measures the satisfaction regarding the course expectations, contents and methodology, satisfaction with the interactive lectures and with the clinical exposure, the perceived relevance of the course within the medical training curriculum, its relevance for future clinical practice, and satisfaction with the availability and support provided by the teachers. The feedback gathered is used to identify areas where students are struggling so that instructors can adjust their teaching and students can adjust their learning.

Evaluation of the Course

Based on the questionnaires received since the beginning of the course (n = 186), the data were organized into three subsamples. Each subsample included students from three consecutive school years: Group 1, students between 2000 and 2003 academic years; Group 2, students between 2003 and 2006; and Group 3, students between the years 2011 and 2014. Because the structure and the contents of the course underwent only minor changes throughout the years, the analysis allows for assessment of fluctuations in the students' satisfaction. We performed an exploratory factor analysis on the satisfaction with the course scale. In general, the students reported a high satisfaction level (Fig. 17.1).

Some of the responders 54.9 % (n = 95) wrote a reflection pointing out the strengths and/or weaknesses of this course. These comments were related to two aspects: (1) content and methodology and (2) relevance of the course for their future practice.

With regard to the content and methodology, these 95 responders mentioned: (a) the relevance of the topics addressed and proposed further topics to be covered (9.5 %); (b) the number of hours suggesting an workload increase of the overall course (5.3 %); and in particular of the exposure to the clinical practice (10.5 %), highlighting the need for further exposure to consultations with teenagers (20 %); (c) the ratio of students/teacher at the clinical placement, pointing out that this ratio should be lower (5.3 %); (d) the teaching skills of the faculty, pointing out the mastery of the teachers (12.6 %); (e) the importance of having covered specific issues associated with this developmental stage (28.5 %); and (f) the exposure to discussion of case studies, proposing an increase in this kind of exposure (6.3 %).

With respect to the relevance of the course, most students (71.6 %) described the course as very enriching, pointing out its relevance for their future medical practice (42.1 %). In addition to the high experiential and structural satisfaction provided by the course, the students much valued the course as a chance of individual personal development (8.4 %). Some 10.5 % of the participants pointed out that the course should be part of the mandatory medical undergraduate curriculum, with 3.2 % saying

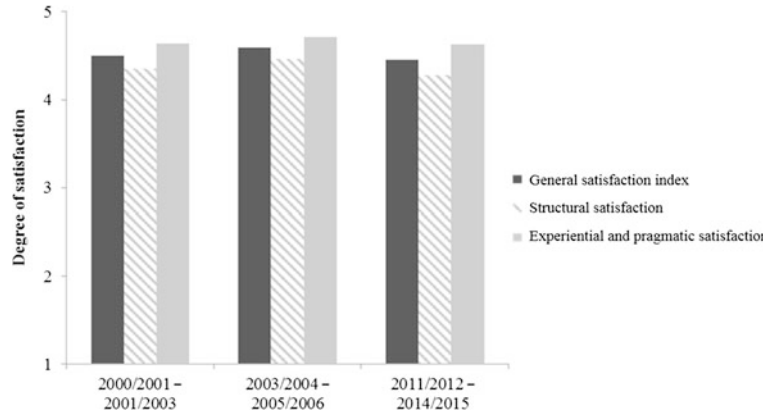


Fig. 17.1 Students' satisfaction regarding the course throughout the years

that it should remain an elective course. In addition, 12.6 % of the participants mentioned the transversal nature of Adolescent Medicine for most of the content in the medical curriculum.

The results of the survey indicate that the experiential satisfaction is higher than the structural satisfaction, reinforcing the idea that students particularly enjoy learning models that prioritize the practical component, with the theory grounded on the practice, and not the opposite. Getting the experience seems to be what the students praised the most. What was also evident in their comments, they would value further exposure to consultations with teenagers. Based on these results, the course should cover a larger number of topics (e.g., risk behaviors, internet use and misuse, addictions, school failure) and increase the duration of the course and of the clinical exposure time. Future courses should reinforce the practical and experiential component of the course, including the acquisition of communication skills. To further understand students' needs, it would be important to conduct qualitative studies using a focus group methodology.

This study corroborates what other authors have already identified, and reinforces the importance of the inclusion of Adolescent Medicine in the undergraduate medical curriculum (Kraus et al. 2003). The findings are being used to reshape some aspects of the curriculum content and methodology of future versions of this course. In addition, we hope they might be useful for facilitating the design of new Adolescent Medicine courses at other Faculties.

Lessons Learned from This Experience

Students face a couple of barriers when enrolling in this particular course. The course runs in parallel with other elective courses and is run during the very first week of the semester, meaning that if they do not take it, they may have one more week of vacation. The list of the elective courses is very extensive and most of them cover traditionally very competitive areas (e.g., cardiology, endocrinology, radiology, laboratory techniques). In our view, it is difficult for a student to "have the courage" to choose a course on a topic which is not yet popular or valued by the scientific community. Strategies to attract students through a better advertisement with a clear statement on what they may gain by taking it may help increase student interest. Concomitantly, continuous advocacy efforts within the Faculty Director Boards are needed.

Inclusion of Adolescent Medicine in the Discipline of Pediatrics I

As discussed in the previous section, at the Faculty of Medicine of the University of Lisbon,

Adolescent Medicine started by being taught as a stand-alone course but little by little became a part of the general flow of the pediatric curriculum of the undergraduate training. The "one-shot" experience for the learners, although having been a good start, only enables a limited number of students to be exposed to adolescent medicine. And, even for those who took advantage of the opportunity, because of lack of continuous exposure, they may in the long term lose many of the competencies gained in the course.

In 2011, under the coordination of Prof. M.C. Machado, I was invited to become responsible for the discipline of Pediatrics I (4th year, one semester, total of 182 h) and had therefore the opportunity to include in this discipline's curriculum a couple of sections on Adolescent Medicine specifically targeted to increase the students' skills in the field of adolescent health. Until then, the pediatric pre-graduate curriculum was focused more on the neonate and the first decade of life.

Box 3 describes the goals for this discipline. Box 4 includes the Adolescent Medicine topics that have been included in the core curriculum of this discipline. And Box 5 lists the teaching methodologies used.

Box 3: Goals for the Discipline of Pediatrics I

Upon completion, the student is expected to be able to:

- Conduct an age-appropriate complete history and physical examination that reflects a biopsychosocial approach.
- Conduct a psychosocial assessment, selecting and using an appropriate screening tool (e.g., HEEADSSSSS, which stands for: Home, Education/employment, Eating, peer-group Activities, Drugs, Sexuality, Suicide/depression, and Safety is a pediatric approved method for conducting psychosocial interviews with adolescents).
- Recognize that good communication is a core clinical skill for physicians and that effective physician–adolescent communication can foster adherence and improved clinical outcomes.
- Conduct an assessment of growth and development including weight and height, BMI, plotting on a growth curve, and sexual maturity rating—Tanner stages (Tanner and Whitehouse 1976)
- Demonstrate an understanding of the importance of developing an effective relationship to allow adolescents to participate in their own care planning.
- Conduct effective short-term counseling for adolescents and their families.
- Demonstrate effective clinical problem judgment to address the most prevalent adolescent problems, including interpreting available data and integrating information to generate differential diagnoses.
- Implement an effective management plan in collaboration with the adolescent, their family, and school when appropriate.
- Use preventive interventions effectively.

Box 4: Adolescent Medicine Topics Included in the Core Curriculum of the Discipline of Pediatrics I

- **The adolescent at the primary care sector**
  - Guidelines for adolescent preventive services, screening and anticipatory guidance.
  - Recommendations for adolescent clinical preventive services developed by the Portuguese National Health Programme for children and adolescents (visits planned at specific points in time: at 10, 12/13, and 15/18 years.

- **Adolescent growth and development**
  - Normal and abnormal adolescent physical growth and development.
  - Physical changes of puberty, Tanner stages, growth spurt.
  - Normal adolescent psychological, emotional, and cognitive development.
  - The impact of normal and abnormal growth and development on adolescent health and well-being.
- **Nutrition**
  - Nutritional requirements for optimal adolescent growth and development.
  - Nutritional disorders in adolescents.
- **Eating Disorders**
  - Etiology, pathogenesis, prevention, and risk factors for eating disorders.
  - The spectrum of presentation of adolescents with eating disorders.
- **Obesity**
  - Etiology, pathogenesis, prevention, and risk factors for obesity.
  - The impact of obesity on growth, development, health, and well-being.
  - The most prevalent comorbidities and the metabolic syndrome.
- **Risk Behaviors**
  - Experimental versus risk behaviors.
  - Injuries as the main cause of death.
  - Tobacco, alcohol use and misuse, illicit drugs.
  - Self-harm.
- **Maltreatment and neglect**
  - Physical and emotional abuse.
  - Bullying.
- **Communication Skills** (development of skills and strategies to manage consultations effectively with adolescents and their families)
- **Case scenario discussions in Adolescent Medicine**

Box 5: Teaching Methodologies in the Discipline of Pediatrics I

- Interactive lectures.
- Rotational clinical practice at the wards, outpatient clinic, and emergency room.
- Seminars: Pre-defined topics are proposed to the students who, in groups of ten and facilitated by their Teaching Assistant, prepare and present them to the whole course. This team-based learning activity is quite effective in balancing individual and group accountability and requires that students study and reflect on complex issues. As part of the learning process, it gives the students the chance to go deeper with the material, use the knowledge they have acquired, and create something new from it.
- Field project: Throughout the semester, the students are asked to develop a project that consists of conducting an age-appropriate complete history and physical examination to one child of any pediatric age range (from the newborn to an 18-year-old). In the case of being an adolescent, the history should reflect a comprehensive biopsychosocial approach and the assessment of the balance between protective and risk factors in the adolescent's life. They are expected to perform an organized and effective physical examination and demonstrate the adequate skills in observation, and ability to determine the patient's abnormal symptoms and signs.
- Case scenario discussions about an adolescent patient.
- Role-play techniques with simulated adolescent patients including video-recording for training of the clinical interview.

Some of the teaching is delivered with the participation of simulated patients. They are recruited from the Pediatric Residents and from older medical students who have already taken this discipline. At the beginning of each scholar year, an announcement is made inviting those interested in Adolescent Medicine to join this group. Those who register are interviewed and a selection is made for starting a training period. This training consists of a mandatory intensive course on motivational interviewing and interview techniques in general.

After the completion of training, they are exposed to periodical training and each of them, according to their wishes and the team needs, becomes "specialist" in a specific condition (e.g., a diabetic adolescent, an adolescent with an oppositional disorder, an adolescent with ADHD and school failure). They continue their training in individual supervised sessions with a health professional of the Adolescent Medicine Division. All the activities are unpaid. This extra workload (recruitment, training, supervision) is very time-consuming. The dynamic form of teaching is highly valued by students and health professionals.

Every student receiving a MD degree should be able to interact with the adolescent patient and possess the ability to elicit an accurate history. These skills can be, in part, acquired using simulation methodologies.

Bedside teaching and education becomes increasingly difficult when there are too many students or they stay with us for too short periods. The time that bedside individual teaching consumes in faculty-hours, and the burden for patients who are quite often concerned that students and residents are practicing on them, often poses a serious problem. Simulation in medical education showed that simulation-based training is effective and leads to improvements in students' learning process (Okuda et al. 2009).

Lessons Learned

The lessons learned from the changes introduced in this discipline have been so far very positive. On the one hand, the evaluations provided by the students at the end of the semester are increasingly positive, revealing high levels of satisfaction. The Faculty members, in particular those directly involved with the teaching in small groups of students at the practical setting, were very receptive to the changes.

A major restructure of the curriculum took place in 2012. Although the curriculum was refined at the end of each year, taking into account the feedback provided by the students, in 2012 a pedagogic shift was made from the traditional "teacher-centered approach" to a "student-centered approach." Rather than the focus being on the needs of the teachers, the emphasis is on the students and what their needs are (Spencer and Jordan 1999). It further required a shift in the role of the faculty members who became essentially (and increasingly) facilitators of learning. The biggest challenge will be to continue this teaching approach over time given the added faculty workload.

Master Course in Adolescent Health

We started a Master Course in Adolescent Health in 2010, at the Lisbon Faculty of Medicine (Coordinator: Helena Fonseca MD, MPH, PhD). The Master Degree is structured in accordance with the Bologna Process principles as 2nd-cycle studies, what means that it is a course that can only be taken by those who already have a bachelor's degree in Health studies. These classes are taken over four semesters and confer 120 ECTS credits.

The duration and the number of credits offered by this program are set according to legal stan-

dards and stable and consolidated practice within the European Union. Upon successful completion of the integrated study cycle, students are awarded a 2nd-cycle degree. At this study level, besides the attendance of course units, students have to develop a research project supervised by a professor and defend it publicly. The faculty members are specialists in Adolescent Medicine from different countries. Box 6 describes the objectives of the course.

Box 6: Objectives of the Adolescent Medicine Master Degree

By the end of the course, the Master student is expected to be able to:

- Perform a complete and appropriate assessment of an adolescent and his/her family.
- Use a nonjudgmental, developmentally appropriate approach toward the adolescent.
- Conduct an age-appropriate, accurate, complete history, reflecting a biopsychosocial approach.
- Effectively identify and explore issues to be addressed in an adolescent encounter, not forgetting the "hidden" adolescent's agenda.
- Demonstrate appropriate interviewing skills with adolescents and their families (listen effectively, be aware and responsive to nonverbal communication).
- Respect the adolescent's right to confidentiality, privacy, and autonomy within a developmental context.
- Assess family function and dynamics and apply basic family systemic techniques.
- Demonstrate a positive, nonjudgmental attitude toward adolescents and their families.
- Communicate effectively with family members.
- Use various strategies (e.g., systemic strategies, motivational interview) to motivate for change.
- Conduct a thorough assessment of growth and development including height and weight, body mass index (BMI), plotting on a growth curve, and sexual maturity rating (Tanner stages)
- Act as advocates for the advance of the health and well-being of adolescents.
- Identify opportunities for health promotion and disease prevention at the community level.
- Understand, recognize, and identify specific health issues and conditions of the adolescent (distinct from the child and the adult) and develop strategies for the management of common somatic symptoms.
- Diagnose, first handle and refer the most common mental health disorders affecting adolescents.
- Be aware of the different psychotherapeutic modalities and commonly used psychotropic medications during adolescence.
- Be aware of the key features of a management program for an adolescent with a chronic condition and of effective models for transition of care.
- Be able to articulate with the school for implementation of a tailored program/enhancement of professional competence.
- Be able to articulate with the community resources for provision of social support in case of vulnerable youth.
- Conduct basic independent research involving young people.

The Course Is Organized into 12 Curricular Units

Unit 1: Adolescent Development

- Understand normal adolescent biopsychosocial development and its impact upon health and illness.
- Be able to assess the developmental level of young people and identify abnormal development.
- Understand biological development in adolescence and its relationship to psychosocial development.
- Be able to identify the pubertal stage of an adolescent.
- Be able to recognize pathological pubertal timing and know the causes.
- Understand exploratory/risk behaviors and their relationship to adolescent development.

Unit 2: Public Health

- Mortality trends of young people.
- Principles of Public Health including primary, secondary, and tertiary prevention.
- Determinants of health.
- Screening and anticipatory guidance.

Unit 3: Ethics

- Confidentiality and informed consent.
- The principles and legal aspects of consent, assent, and confidentiality in young people as applied to one's cultural reality.
- Use of an ethical framework for approaching adolescent health care, particularly when sensitive issues are concerned (e.g., pregnancy, sexually transmitted infections, and abuse).

Unit 4: Health Promotion

- Health promotion and advocacy.
- Adolescent risk-taking and determinants of Health.
- The cluster effect of risk factors.
- National and International health indicators based on the HBSC (Health Behaviour in School-aged Children).

Unit 5: The Adolescent at the Primary Care Sector

- Health surveillance during the second decade of life.
- Screening programs.
- The concept of adolescent-friendly health services: key elements.
- Ways to involve young people in service development.

Unit 6: Sexual Health

- The range and epidemiology of normal sexual behavior in adolescence.
- Issues related to gender and sexual identity.
- Diagnosis and management of common adolescent gynecological problems.
- Identification of specific adolescent health issues related to the presentation, diagnosis, and management of STIs in young people.
- Risk factors and preventive strategies for teenage pregnancy.
- Specific health needs of teenage parents.

Unit 7: Chronic Conditions

- Impact of chronic conditions and disability on the health and well-being of adolescents and their families.
- Impact of life-threatening conditions on adolescent development and emotional well-being.
- Impact of long-term conditions and/or disability on education/vocational plans.
- Special needs of the adolescent with physical and cognitive disabilities.
- How to improve adherence.
- Impact of chronic conditions on quality of life.

- Self-management.
- Transition (not transfer!) of care from the pediatric to the adult healthcare system.
- Evidence-based models and tools to support and promote optimal transition of care.

Unit 8: Addictions

- Concepts of substance use, misuse, and abuse.
- Epidemiology.
- Protective and risk factors at the individual, family, and community levels.
- The health professionals' role in preventing adolescent substance misuse (alcohol, tobacco, and illicit drugs) at the individual and community levels.
- Identification and evaluation of tobacco, alcohol, and illicit drug misuse and abuse.
- How to communicate effectively with an adolescent about substance use.
- How to implement an appropriate intervention plan.
- Can internet misuse/overuse be considered an addiction?
- Addictive trajectories: how to identify and try to reverse them.
- How to articulate with the community resources?

Unit 9: Mental Health

- What is the "normal" adolescent behavior? What is not "normal"? What is a variant of the normal?
- Common signs of mental health disorders in adolescents.
- Initial assessment and management of common causes of admission to hospital due to psychological distress (e.g., self-harm, suicidal attempt, and somatization).
- Management of common emotional and behavioral problems (e.g., depression, anxiety, and conduct disorders).
- Disorders of cognition, learning, and attention.
- Management of ADHD (attention-deficit/hyperactivity disorder).
- The role of the health professional in dealing with bullying and school refusal.
- Suicidal ideation and attempt.
- Suicide prevention.
- Indications of commonly used psychotropic medications appropriate for use in adolescents.

Unit 10. Eating Disorders and Obesity

- Epidemiology of eating disorders in young people.
- The normal range of adolescent body shape.
- Unhealthy eating patterns and behaviors in adolescence.
- Cultural and social influences on body image.
- The emotional dimensions of eating.
- Characteristics of common eating disorders and how to assess and diagnose them.
- Principles of a developmentally appropriate treatment plan for a young person with an eating disorder.
- Epidemiology, etiology, prevention of, and long-term complications of obesity.
- The impact of obesity on growth, development, health, and well-being.
- Interventional strategies involved in weight reduction (based on theoretical frameworks, such as the trans-theoretical model of change, motivational interview, positive youth development, and resilience).

Unit 11: School Health

- Impact of school functioning and dynamics on the adolescent development.
- The educational process across the second decade of life.
- Implementation of an effective management plan in collaboration with the school and the family when appropriate.
- Effectively handle conflict/sensitive situations between adolescents/family and the school.

Unit 12: Physical Activity

- Positive impact of physical activity (PA) on physical and mental health.
- Physical and sedentary activity assessment.
- PA prescription (different modalities).
- Specific PA interventions in the field of eating disorders and obesity.
- Theoretical frameworks for promotion of PA in contexts of prevention and intervention (e.g., Self-determination theory).
- Assessment for sports practice.
- Common sports injuries.

Methodology for Delivering Course Material

- Interactive lectures.
- Case scenario discussions including adolescents.
- Problem- and task-based learning.
- Experiential and reflective learning.
- Small-group, self-instructional, and project-based learning.
- Peer evaluation and learning contracts.
- Role-play techniques with simulated adolescent patients including video-recording for training of the clinical interview.
- Discussion and writing of scientific articles.

Course Evaluation

- Formative assessments including informal techniques (written reflections and checks for understanding) and formal techniques (in-class activities, class deliverables).
- Summative assessments including tests at the end of some of the units, papers, projects, and presentations.

So far, three courses have been held, with 36 participants in total, coming from diverse backgrounds. Among the students who took the course, there were 15 pediatricians, 4 Pediatric Residents, 4 gynecologists, 1 family doctor, 2 psychologists, and 2 nutritionists. Nine of them have already received their Master Diploma in Adolescent Health, 3 are in the process of developing the research project, and the remaining were only interested in the curricular part of the program, successfully completed the first year, and were awarded a title of specialized studies. The largest majority of these students went back to their communities and started Adolescent Clinics; most of these clinics are integrated into Departments of Pediatrics.

A few lessons can be learned from the experience of setting up a course of this nature. In the first year, the classes took place every Friday in the afternoon and all day on Saturday. As most people who register were from across the country, traveling to the university weekly was time-consuming and expensive. As a result, classes were concentrated and the classes were then taught once a month on Thursday, Friday, and Saturday.

Only a third of the participants proceeded to the second year of coursework and developed a research project aiming at getting the Master degree. This could be partially explained by financial reasons and difficulty in managing working time and formal class time. Furthermore, for some of the students, the main goal of participating in the Master program was to increase their knowledge and skills in the field of Adolescent Health offered by the first-year curricular program.

Fellowship in Adolescent Medicine

Adolescent Medicine is a subspecialty that focuses on the assessment, diagnosis, and management of complex health issues within the context of the major biopsychosocial events that define the transition to adulthood. This subspecialty, which does not exist in Europe so far, will have the potential to generate and disseminate new knowledge and best practices in adolescent health care.

In July 2014, the first 2-year fellowship program in Adolescent Medicine was launched at the Department of Pediatrics, Adolescent Medicine Unit, Hospital de Santa Maria, Faculty of Medicine of Lisbon (Program Coordinator: Helena Fonseca MD, MPH, PhD). The two-year

fellowship program has the objective of providing advanced training in adolescent health care to pediatricians who elect to broaden their capacity in caring for adolescents. This program is recognized and supported by the Paediatric Board of the Portuguese College of Physicians. Therefore, in contrast to what happens in other countries, physicians coming from specialties other than Pediatrics currently are not accepted.

Upon completion of training, the fellow will be an expert in Adolescent Medicine capable of assuming a consultant's role in the subspecialty. The fellow must acquire an expert knowledge of the theoretical basis of the subspecialty, including its foundations in the basic medical sciences and research.

To become a medical expert in Adolescent Medicine, capable of assuming a consultant role in the subspecialty, fellows must demonstrate the requisite knowledge, skills, and attitudes necessary to provide effective adolescent health care to a diverse population. Box 7 describes the objectives of the Fellowship training.

Box 7: Objectives of the Fellowship Training

Upon completion of the program, the fellow should be able to:

- Demonstrate effective clinical and autonomous problem-solving and judgment to address adolescent problems, including interpretation of available data and integration of information to generate differential diagnoses and management plans.
- Effectively address challenging communication issues (e.g., addressing anger and misunderstanding, delivering bad news).
- Provide clear and culturally sensitive explanations of diagnosis, investigations, and management to adolescents and to their families (if appropriate).
- Develop a common understanding on issues/problems with adolescents and their families, in order to develop a shared plan of care.
- Effectively convey written information and present verbal reports of clinical encounters and discuss them with the team.
- Maintain clear and appropriate written paper/electronic records of clinical encounters and prepare accurate and timely written documentation (e.g., progress notes, discharge summaries).
- Demonstrate proficiency in working in an interdisciplinary team.
- Effectively develop an integrated plan for provision of care and/or transition of care.
- Effectively link with the primary healthcare services, other Pediatric subspecialties, and the adult services (if appropriate).
- Autonomously prepare a scientific presentation.
- Demonstrate basic biostatistics and epidemiological skills and master the basic clinical research methodology.
- Effectively plan a research project relevant to young people.

Competency-Based Curriculum Goals and Objectives

The following are considered core knowledge (K) and skills (S):

I. **Adolescent Growth and Development (K)**

1. Normal adolescent psychological, emotional (development of self-identity and self-image, psychological separation from the family, peer-group influence), and cognitive development (formal operational thought, late maturation of the prefrontal cortex).
2. Physical changes of puberty (pubertal staging, growth spurt, changing laboratory parameters).

3. Variations and disorders of puberty and growth.
4. The impact of normal and abnormal growth and development on adolescent well-being.

II. **Role of the Family (K)**

1. Impact of family functioning and dynamics on the adolescent development.
2. Impact of the adolescent physical and mental problems on family functioning.
3. Evolving nature and organizational diversity of the concept of family.

III. **Legal and Ethical Issues (K)**

1. Laws and concepts of confidentiality and informed consent as applied to one's own practice.
2. Legal frameworks pertaining to adolescent health.

IV. **Interview Techniques and Theoretical Frameworks in Adolescent Care (K)**

1. Motivational model.
2. Trans-theoretical model of change.
3. Resilience theory.
4. Positive youth development.

V. **Nutrition and Physical Activity (K)**

1. Nutritional needs (calcium, iron).
2. Impact of sedentary behaviors and physical activity on physical and mental health.
3. Assessment and prescription in specific situations.

VI. **Eating Disorders Including Obesity (K)**

1. The spectrum of presentations.
2. Prevention and risk factors.
3. Developmentally appropriate treatment strategies.

VII. **Sexuality (K)**

1. Developmental aspects.
2. Epidemiology of adolescent sexual behavior.
3. Impact of chronic conditions on sexuality.

VIII. **Gynecology (K)**

1. Contraception.
2. Sexually transmitted conditions including HIV.
3. Diagnosis and treatment of menstrual disorders.
4. Indications for a pelvic examination in the female adolescent and obtaining appropriate specimens.

IX. **Adolescent Pregnancy (K)**

1. Epidemiology.
2. Physical, psychosocial, and economic implications.
3. Range of options available to pregnant adolescents.

X. **Sports Medicine (K)**

1. Assessment for sports practice.
2. Common sports injuries.

XI. **Medical Conditions in Adolescents (K)**

1. Epidemiology, clinical features, diagnosis, and management of common organ-specific conditions that present or worsen during adolescence.
2. Functional and somatic disorders.
3. Sleep disorders.

XII. **Chronic Conditions (K)**

1. Impact of chronic conditions on the development and emotional well-being of adolescents and their families.
2. Special healthcare needs.

3. Adherence to treatment regimens: challenges and enhancement.
4. Transition models of care from the pediatric to the adult setting.

XIII. **Mental Health (K)**

1. Epidemiology, clinical features, diagnosis, and management of common mental health disorders.
2. Psychotherapeutic and pharmacological indications.
3. Indications for referral to a mental health professional.

XIV. **Substance Use, Misuse, and Abuse (K)**

1. Epidemiology, prevention, risk factors, identification and evaluation of alcohol, tobacco, and illicit drugs.
2. Impact on health and well-being.
3. Indications for referral.

XV. **Develop Rapport and Ethical Therapeutic Relationships with Adolescents and their Families (S)**

1. Establish positive, understanding, nonjudgmental, respectful, and empathic therapeutic relationships with adolescents and their families and be able to deal with confidentiality issues.
2. Demonstrate appropriate interviewing skills, listen effectively, being aware and responsive to nonverbal cues.
3. Respect diversity, including the impact of gender, cultural beliefs, and religion on decision-making.
4. Use distinct strategies to engage the reluctant adolescent in the therapeutic process (motivational interviewing, systemic approach).
5. Assessment of competency and capacity of the adolescent in treatment decision-making within a developmental context.
6. Respect the adolescent's right to confidentiality, privacy, and autonomy within a developmental context.
7. Provide clear explanations of investigations, diagnosis, and management to adolescents and when appropriate to their families.

XVI. **Perform a Complete Assessment of an Adolescent and his/her Family (S)**

1. Conduct a complete history and physical examination that reflects a biopsychosocial approach.
2. Conduct an assessment of growth and development including weight and height, BMI, plotting on a growth curve, and sexual maturity rating (Tanner stages).
3. Conduct a psychosocial assessment, selecting and using an appropriate screening tool (such as HEEADSSSSS, CRAFFT).
4. Assess family function and dynamics.
5. Effectively handle conflict situations between adolescents and their families.
6. Conduct effective short-term counseling for adolescents and their families.
7. Demonstrate effective clinical problem judgment and solving to address the most prevalent adolescent problems, including interpreting available data and integrating information to generate differential diagnoses.
8. Be able to select and interpret laboratory tests and assess benefit–risk balance of therapeutic interventions.
9. Recognize and manage emergency conditions effectively resulting in appropriate management.
10. Implement an effective management plan in collaboration with the adolescent, their family, and school when appropriate.
11. Use preventive and therapeutic interventions effectively.

XVII. **Participate Effectively in Interdisciplinary Healthcare Teams (S)**

1. Demonstrate proficiency in working in an interdisciplinary team, including assessment, planning, and provision of integrated care for adolescents.
2. Manage effective communication within the team, collaborating effectively in supporting adolescents and family needs.

XVIII. **Accurately Convey Relevant Information to Adolescents, Families, and other Professionals**

- Effectively communicate information and treatment plans to adolescents and their families (if appropriate) in a sensitive manner and in such a way that it encourages participation in decision-making.
- Verbally present cases and share relevant information with colleagues and other professionals in a professional manner.

XIX. **Effectively work with other health professionals (S)**

- Seek appropriate consultation from other health professionals.
- Prepare written documentation (progress notes, discharge summaries, and consultation letters).
- Convey effective oral and written information about medical encounters based on clear and accurate clinical records.
- Provide for appropriate follow-up care services and collaborate with community resources (including schools) and other professionals working with adolescents.

Evaluation of Program

At the very beginning of the program, the individual fellow's needs are assessed and the curriculum is adapted to meet these needs. Evaluation methods that measure instructional effectiveness have been developed. Every 6 months, fellows are provided with evaluation of performance with feedback on:

- Medical knowledge.
- Procedural skills.
- Practice based on the specialty-specific milestones.
- Practice-based learning and improvement.
- Communication skills.

At the end of the program, the fellows have to pass an examination comprising the discussion of the *portfolio* and the presentation and discussion of a clinical encounter (clinical interview, physical examination, interpretation of available data, and integration of information to generate differential diagnoses and the management plan). The objective is to ensure that fellows, upon completion of the program, have acquired the core competencies that will enable them to practice without supervision.

The Clinical Competency Committee, composed of three members of the program faculty, is responsible for the evaluation. Annually, the program must evaluate faculty performance as it relates to the educational program, including confidential evaluations by the fellows. This kind of evaluation implies an active involvement of fellows and is crucial for planning, developing, and implementing further educational activities.

Ways Forward

The accumulated experience with both the Master Course in Adolescent Health and the Fellowship in Adolescent Medicine indicates that

postgraduate training programs in adolescent health care can be developed for healthcare providers who wish to broaden their skills for the sake and well-being of adolescents.

What has been left over? In Europe, and Portugal is no exception, there is evidence that health professionals in general and pediatricians in particular need to get further extended knowledge in adolescent health care and promotion. Surveys of graduates from Pediatric residency programs in the USA reported that training in health supervision and well-child/adolescent care was deficient in quality and quantity compared with other experiences during residency (Spencer and Jordan 1999). This includes developmental surveillance, behavioral issues, anticipatory guidance, and health promotion, which are core Adolescent Medicine competencies. The inclusion of adolescent health contents and clinical exposure in the curriculum as part of the "common trunk training" will significantly add up to the knowledge and skills of pediatricians.

Currently at the University of Lisbon, Adolescent Health coursework has expanded from undergraduate (elective course, integrated Adolescent Health component in the Pediatric discipline) to postgraduate training (Master and Fellowship). However, the Adolescent Medicine content is still largely unavailable in the Pediatric residency curriculum. Trying to address this, the European Academy of Paediatrics and the Paediatric Board of the Portuguese College of Physicians have been working together in order to develop a core training curriculum in Adolescent Health that could enable all Pediatric Residents to acquire the basic medical knowledge, clinical skills, and attitudes needed for an effective provision of adolescent care.

Next steps will be to (1) extend this strategy to other healthcare professionals who are dealing with adolescents, such as general practitioners/family doctors (GP/FD) and nurses, using the core competencies model (WHO 2015); and (2) develop a formal Adolescent Health course for Continuing Medical Education (CME).

References

Fonseca, H., & Marcelino, J. (2002). Assessment of training needs in adolescent medicine [Avaliação das Necessidades de Formação em Medicina de Adolescentes]. *Acta Pediátrica Portuguesa, 33*, 181–187.

INE. (2013). *The People-2013*. Instituto Nacional De Estatistica. Lisboa, Portugal. Available at https://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_publicacoes&PUBLICACOSpub_boui=225279457&PUBLICACOEStema=5414321&PUBLICACOESmodo=2#

IPA. (2015). *Adolescent medicine*. International Pediatric Association, Geneva, Switzerland. Available at http://ipa-world.org/Adolescent%20Medicine.php

Kraus, B., Stronski, S., & Michaud, P. (2003). Training needs in adolescent medicine of practising doctors: a Swiss national survey of six disciplines. *Medical Education, 37*(8), 709–714. doi:10.1046/j.1365-2923.2003.01565.x.

MCA. (2014). Maternal, newborn, child and adolescent health: Core competencies in adolescent health and development for primary care providers. Department of Maternal, Newborn, Child and Adolescent Health (MCA), World Health Organization. Geneva, Switzerland. Available at http://www.who.int/maternal_child_adolescent/documents/core_competencies/en/

Mundial, B. (2007). Development and the next generation. World development report, Banco Internacional de Reconstrucción y Fomento, Washington, DC. Available at https://openknowledge.worldbank.org/handle/10986/5989

Okuda, Y., Bryson, E. O., DeMaria, S., Jacobson, L., Quinones, J., Shen, B., et al. (2009). The utility of simulation in medical education: what is the evidence? *Mount Sinai Journal of Medicine: A Journal of Translational and Personalized Medicine, 76*(4), 330–343.

Spencer, J. A., & Jordan, R. K. (1999). Learner centred approaches in medical education. *British Medical Journal, 318*(7193), 1280–1283.

Tanner, J. M., & Whitehouse, R. H. (1976). Clinical longitudinal standards for height, weight, height velocity, weight velocity and the stages of puberty. *Archives of Disease in Childhood, 51*, 170–179.

Viner, R. M., Coffey, C., Mathers, C., Bloem, P., Costello, A., Santelli, J., et al. (2011). 50-year mortality trends in children and young people: a study of 50 low-income, middle income, and high-income countries. *Lancet, 377*, 1162–1174. doi:10.1016/S0140-6736(11)60106-2.

WHO. (2015). *Core competencies in adolescent health and development for primary care providers*, Geneva, Switzerland. Available at http://apps.who.int/iris/bitstream/10665/148354/1/9789241508315_eng.pdf?ua=1

18 Assessing Adolescent Capacity for Decision Making in Clinical Care: The Practical Application of Bioethics and Human Rights Principles

Pierre-André Michaud

Introduction

Ethics in health care comprises four principles: (1) respect for person, (2) beneficence, (3) non-maleficence, and (4) proportionality/justice. There are several reasons why health professionals should be aware of these principles and their application to the health care of adolescents. One reason is linked with the fact that more and more doctors and allied professions tend to openly discuss with their patients the different options regarding imagining, laboratory testing, surgical procedures, and therapeutic strategies in a "shared decision" approach (Bailly 2010; Jones et al. 2014; Schneider et al. 2006). Even among adolescents or even children, involving the patient in the process of decision making is now almost universally recognized.

A second reason lies in the importance of confidentiality in taking history, especially when it comes to tackling sensitive issues such as substance use or sexual and reproductive health concerns. Finally, including the adolescent patient in all decisions regarding health is not only a way to improve the search for autonomy, it is a right, which is clearly stated in the Convention on the Rights of the Child (CRC) (UNICEF 1989). This convention, a seminal document currently ratified by all countries of the world except the USA, aims to protect and promote the rights of children up to 18 years of age. It sets out 54 articles covering the basic human rights of children and adolescents. It covers core principles such as non-discrimination, respect of the best interests of the child, right to life, survival, development, and the right to be heard.

Among other topics, the CRC states that "the more the adolescent knows, has experienced and understands, the more the parent, legal guardian or other persons legally responsible for him or her have to transform direction and guidance into reminders and advice, and later to an exchange on an equal footing" (General comment No. 12/84). The CRC is a legally binding international human rights instrument that addresses all aspects of children's rights and provides standards in health care, social services, and education. It has been influential in driving many societies to give children and adolescents a greater degree of autonomy in the decisions affecting their health and lives. The CRC underlines the importance of the concepts of capacity of discernment, confidentiality, informed consent, and protection.

The application of these rights, however, is difficult when it comes to involving adolescents in research projects (Burke et al. 2005; Modi et al. 2014; Ryan and Murrie 2005) and in complex clinical situations such as those which involve young people suffering from terminal diseases (Freyer 2004; Pousset et al. 2011;

P.-A. Michaud (✉)
Faculty of Biology and Medicine, Multidisciplinary Unit for Adolescent Health, University Hospital, Lausanne, Sauge 15, 1030 Bussigny, Switzerland
e-mail: Pierre-Andre.Michaud@chuv.ch

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_18

Rosato 1996). It is also difficult in situations that require confidentiality about prescription of oral contraception or other matters related to sexuality (Cook et al. 2007). It is also problematic when young people refuse hospitalization while suffering from severe anorexia (Tan et al. 2003; Turrell et al. 2011). Testing the presence of psychoactive substances in urine is another difficult situation that threatens the relationship between the healthcare provider and the adolescent (Warner et al. 2003). Indeed, the response to these challenging issues is complex and depends not only on the legal and cultural context, but also on the complexity of the clinical situation and on the biopsychosocial development of the adolescent. Healthcare providers face the challenge of balancing, on the one hand, the adolescent's right to autonomy and, on the other hand, the respect of the principle of beneficence and of providing protection. The purpose of this chapter is to shed light on the legal, moral, and ethical framework which healthcare providers must keep in mind when offering guidance. In addition, when health providers address ethical problems they should take into account the adolescent's stage of development, the family, and their social and cultural environment.

Bioethics: The Basic Concepts

In 1979, the Belmont Report defined three major ethical principles which still guide healthcare professionals in their everyday work (Beauchamp and Childress 2001). Although these principles were at that time mainly focused on the conditions at which research on human subjects should be conducted, they apply as well to the clinical care of the patient and can even be used in the design of preventive interventions (Rendtoff 2002; Michaud et al. 2009):

- Respect of the person's autonomy—the duty to respect the self-determination and choices of autonomous persons, to protect persons with diminished independence, and fundamentally to respect persons, which is the basis of any interaction between a professionals and clients;
- Beneficence—the obligation to secure the well-being of persons by acting positively and maximizing the benefits that the client can attain;
- Non-malfeasance—the obligation to minimize harm to persons, and wherever possible, to remove causes of harm altogether;
- Proportionality/justice—the duty, when taking actions involving the risk of harm, and to balance risks and benefits so that actions have the greatest chance of resulting in the least harm and the most benefit to persons directly involved.

More recently, several bioethicists have expanded the list of important ethical principles on which to base the practice of bioethics in a clinical setting, such as *dignity, integrity, and vulnerability* (Callahan 2003; Fox et al. 1995; Kemp et al. 2000; Partners in the BIOMED-II Project 1998). All these principles can apply to any ethical situation, regardless of the age or situation of the patient. All the same, it can easily understand that issues such as integrity, autonomy, and vulnerability are important, as far as minor adolescents are concerned.

The Application of Ethical Principles Within the Legal and Normative Framework

Three concepts drive the application of ethical principles to the clinical care of minor adolescents (Larcher 2005; Michaud et al. 2009).

(1) *Confidentiality* refers to the fact that competent people have the right to demand that their healthcare provider does not divulge any information that has been disclosed without the patient's consent (Hester 2004). Thus, competence is the condition for accessing the adolescent's right to confidentiality. The right to confidentiality includes both matters of competence and of legislation (Berry 2005; Ford et al. 2004; Sanci et al. 2005). In most parts of the world, confidentiality is automatically granted to individuals at a certain age (Paxman 1978),

usually the age of majority. Moreover, in several countries, confidentiality is granted to any individual who is considered to be competent, even before the age of legal majority (Feuillet-Liger et al. 2012). There are exceptions to these principles. In many regions of the world, the rule of confidentiality has to be broken when someone is threatening his/her own or someone else's life, or in cases of physical or sexual abuse (British Medical Association 2000). Under these circumstances, the physician may be authorized or even legally compelled to break confidentiality.

(2) *Competence* refers to the fact that people are able to understand the issues linked with a situation requiring a decision and are considered capable to decide about their own health care, and do not require a third party authorization. In most countries, young people, who have attained the age of majority according to their country's legislation, are legally considered to be adults. Therefore, by definition, they are competent (unless they suffer from a severe psychiatric disturbance). With some exceptions, a majority of countries define a minor as a person under the age of 18. It should be noted that the age for marriage usually coincides with the age of majority in most countries but not all. In Turkey, Uzbekistan, and in Thailand, one can marry by age 16 or 17, under a special court decision. In India and Bangladesh, the limit is different for females and males (respectively 18 and 20 years of age) (Nelke 2001).

(3) *Informed consent* refers to a "competent" person's right to make both judgments and decisions about any health issue, whether undergoing a laboratory test, being prescribed a medication, undergoing surgery, participating in a preventive intervention, or participating in research (Hester 2004; Schachter et al. 2005).

The notion of competence is therefore central to autonomy, which in health care is expressed through the right to confidentiality and informed consent. Conversely, limited autonomy is expressed by a requirement of a third party authorization, and disclosure of personal information to parents, guardians, and legal authorities. While the legal framework automatically grants young people "competency" in specific areas, in many countries a minor adolescent can be granted both the right to confidentiality about their healthcare decisions and informed consent related to health procedures.

Some countries thus define these competent adolescents (under the age of majority) as "mature minors" (Bartholome 1995; Ecoffey and Dalens 2003; English 2006; O'Donovan 1996). *It is thus the responsibility of the healthcare provider to assess the young patient's competency and to what extent, in any given situation, patients can make informed decision about their health. This evaluation must be conducted within a structured step-by-step procedure that will allow making decision(s) in the best interest of the adolescent, which is the ultimate goal of any ethical approach.*

A Developmental View of Decision-Making Abilities

During the past two decades, a large number of research papers, clinical surveys, and guidelines have been published, based on studies that have attempted to analyze the cognitive and affective aspects of reasoning and how they evolve during adolescence (e.g., Alderson 2007; Alderson et al. 2006a; Bolt and van Summeren 2014; Diekema et al. 2011; Geist and Opler 2010; Gibson et al. 2011; Michaud et al. 2009; Miller et al. 2004; Shaw 2001; Weller et al. 2012). Indeed, the assessment of adolescents' decision-making abilities is complicated by two factors:

- First, the pace of cognitive and affective development varies among teenagers (Obradović et al. 2006; Shaw 2001). The timing of puberty and the physical development also differ (Michaud et al. 2006; Steinberg 2005). The complexity of decisions also varies a great deal, which makes the definition of age cutoffs for decisions regarding health

decisions as a challenge. As stated by Fischhoff (2008), "competence varies by individuals and by decisions, leading to domain-specific policies and interventions, affording teens as much autonomy as they can manage." In other words, the level of competence of the young patients depends not only on their stage of cognitive and affective development, but also on the complexity of the situation in which they are involved.

- Second, we have increasing evidence from neurodevelopmental research that the capacity to foresee long-term consequences of a decision is, under certain circumstances, hampered by the relatively slow growth and maturation of the prefrontal cortex (Giedd 2008; Steinberg 2013). As functional connectivity of the brain, including the prefrontal cortex, increases with age, greater socio-emotional maturity can be expected (Geier et al. 2009; Giedd 2008). Additionally, adolescents more than adults react in a variable manner, depending on their emotional state. Some authors describe it as an "analytic" reasoning process versus a "heuristic" reasoning process (Evans 2008; Klaczynski 2004). This can also be understood as a cold versus hot cognition (Steinberg 2005). Hot cognition referring to decisions made under conditions of high emotional arousal while cold cognition refers to non-stressed decision making. This is why it is important for the healthcare provider to assess the adolescent's emotional state, and create conditions that promote optimal decision-making ability and "cold cognition." All these comments apply to adolescents' participation in research as well.

The assessment of an adults' competence (e.g., when they suffer from a severe psychiatric disease or a cognitive deficit) is often conducted using a structured interview instrument. In the case of adolescents, it is usually difficult to rely on a structured set of questions, which will correctly and comprehensively address all the factors involved in the evaluation of a growing adolescent's capacity for reasoning.

The most well-known structured interview instrument is the MacCAT-T (Grisso and Appelbaum 1998; Appelbaum et al. 1997). Developed to assess adults, the MacCAT-T is untested with adolescent. Given the heterogeneity of adolescents' cognitive and psychological development, and the varying complexity of clinical situations, it is unclear whether the MacCAT-T can reliably determine an adolescent's capacity for reasoning. Certainly, some authors have attempted to adapt existing instruments to the assessment of minors' competence (Hein et al. 2012, 2014) but often not quite successfully (Viljoen et al. 2009).

The following sections will thus focus on three main postulates:

1. It is the responsibility of the professional in charge of a situation with ethical challenges to assess the competence and decision-making capacity of a minor adolescent patient.
2. Establishing a trustful cooperative partnership with the young patient is a prerequisite for any ethical deliberation with a young person.
3. The different aspects of the decision(s) should be debated following a step-by-step procedure, involving the adolescent, other members of the care team, and stakeholders outside the field, such as the parents and siblings, social workers, teachers, and close friends.

Assessing the Adolescent's Capacity for Autonomous Decision Making

There are many situations which require an assessment of a minor's capacity for autonomous decision making (legally named "competence") (Dickens et al. 2006).

The case of Sabina,

Think of Sabina, a 15 years old girl who presents to her school nurse, requesting a pregnancy test but who does not want her parents to know about it. She said she has been sexually active for four months with several partners, without any

protection or contraception. The pregnancy test is negative. Then, Sabina asks for a prescription for an oral contraceptive, which she wants kept confidential. Although she admits that she may not be totally compliant in the future. The reason why she does not want her parents to know about her situation is that they are highly engaged in the religious community and will certainly, she thinks, disapprove of her behavior. The question thus arises whether she deserves confidentiality or whether the doctor should deny her request for confidentiality; and let her parents know about the situation. Traditionally, it is the parents right to protect their children from risky behaviors and socially unacceptable behavior.

The extent to which the young person should have control over the decisions that will be made depends obviously on the legal framework of the country, and some questions (as summarized in Box 1) must be first addressed before any assessment is conducted. If the young patient is not legally granted competence, then the professional should conduct an evaluation to decide to what extent the minor adolescent can be considered to be able to make autonomous decisions. Such an evaluation must follow a procedure based on a trustful therapeutic relationship. The following four issues (see Box 2) are adapted from the evaluation instrument, the MacCAT-T tool (Grisso and Appelbaum 1998).

Box 1 Questions and issues about the legal context

What is the age of majority in the country (in principle age at which individuals are automatically considered competent)?

Are current ethical approaches of the institution/the state aligned with the principle of the CRC?

Are minor granted specific autonomy regarding consent to healthcare procedures and if yes does the law provide age limits or not?

Do the institutions/the state provide an official body which can, if needed, or must assist the healthcare provider in gauging the young person's autonomy regarding specific decisions?

Are healthcare providers aware of the existence and content of the CRC, especially comment Nb. 12 on the right of children to be heard?

Box 2 A deliberative assessment of the adolescent's autonomous decision-making capacities is as follows:

1. Check the adolescent's understanding of the different facets of the situation.
2. Evaluate the adolescent's reasoning about their present situation, health condition, and therapeutic options.
3. Assess the adolescent's deliberation on various options.
4. Make sure that the adolescent is able to express a choice.

Assess the Adolescent's Understanding of the Different Facets of the Situation

Information regarding the different clinical facets of the disease and the issues should be delivered by the healthcare provider in a simple, accessible language, and the explanation should be comprehensive. Sabina should know about the effectiveness and potential side effects of oral contraception. She needs to know about the risk of acquiring a sexually transmitted infection. She also needs help exploring her own beliefs and values. She needs help thinking through her underlying assumptions, which guide her behavior (Fischhoff 2008). In many instances, it is important to review with the adolescents, their opinion regarding their situation, their disease, and its impact on their life. Questions can be asked such as, "What do you know about your disease?"; "Explain what the effects of the treatment are?"; "Let them know what happens or what would happen if you don't take your medication";

"How do you see your future?" Finally, and it is important in the case of Sabina, the climate within the family, and the nature of the relationship with parents or caregivers is important to understand an adolescent's perspective.

Evaluate the Adolescent's Reasoning About Therapeutic Options

Evaluating an adolescent's ability to understand and make reasoned decisions about therapeutic options is an important but difficult task (Albert and Steinberg 2011; Fischhoff 2008). First, the person conducting the assessment has to evaluate the adolescent's mood and mental state and make sure that severe anxiety, depression, or even delusions do not alter the young person's cognitive ability. Second, the professional should review how the adolescent patient applies logic to clarify information. How they verify facts, justifies change of, or persistence in their opinions. And, how they handle beliefs based on newly acquired or existing information. Different hypotheses can be tested, related to their meaning and their impact on the teenager's psychological, educational, and social life. In the case above, Sabina could be asked whether she considers an alternative to oral contraception, including the regular use of a condom or the use of an IUD (intrauterine device) and what these alternatives mean for her. Also, the professional could investigate with her what it would mean for her and for her parents, if they found out about her sexual behavior. On a more general level, any situation implying therapeutic decisions can be explored in addressing a variety of questions such as "What do you understand about the consequence of this procedure," or "Are you aware of the potential complication of this operation?" If the answer is "yes," ask the adolescent to explain "What do you think could happen if…"; "Now that you know the risks of this course of action, what would you do differently?" It is also worth it to explore how the adolescent feels about their parents, guardians' or relative's views and preferences. Then explore with the adolescent how the opinions of their family and extended family would affect their choice and decision.

Assess the Adolescent's Deliberation on Various Options

Assessing the young patient understanding of the medical options available, ask the adolescent to discuss the different consequences linked with the choice that has to be made to balance the respective risks and benefits. A specific difficulty of adolescents, at this stage, is to foresee the consequences of any choice they make. The capacity to reason in the abstract and develop a time perspective is typically limited (Johnson et al. 2014). Likewise, the interviewer must be very careful in guiding the adolescent in this process without putting pressure in one direction or another. Suitable questions could be, "Can you explain why you think that this option is better than the other one?"; "Can you compare these two options and list the risks and benefits of each?" and "For your future, which risks and benefits are the most important in making your decision?"

Make Sure that the Adolescent Is Able to Express a Choice

After this careful, respectful deliberation, the adolescent is asked to express clearly the preferred choice and then to justify it in light of the discussion(s) which took place before. An adolescent with a cancer facing a choice between two therapeutic options, each with their own side effects and with different potential outcomes, needs a lot of support and time to address such a situation. Undeniably, some adolescents may be unable to express a choice during the first encounters because they feel too ambivalent. They may just have to think about the issues for a while. The interviewer should thus wait until the adolescent has come to a conclusion based on the information available, or at least give an opinion.

Establishing a Trustful Cooperative Partnership with the Young Patient

Many authors have attempted to outline how stakeholders should assess adolescent's autonomous decision making (e.g., Bolt and van Summeren 2014; Dickens et al. 2006; Diekema et al. 2011; Fisher 2004; Geist and Opler 2010; Griffith and Tengnah 2012; Larcher and Hutchinson 2010; Miller et al. 2004; Viljoen et al. 2009; Weller et al. 2012). However, with some exceptions they tend to stress the process of the evaluation itself and do not sufficiently emphasize the adolescent's experience with health and disease (Alderson et al. 2006a; Geist and Opler 2010; Shaw 2001). The importance of the setting and of the relationship established between the adolescent and the healthcare provider cannot be overlooked. As a general rule, the healthcare provider with the best relationship with the adolescent should be in charge of the assessment of the adolescent's competence (see Box 2). As stated by Alderson and colleagues "criteria for competence have moved from age toward individual experience and understanding" (Alderson 2007). In other words, as expressed by the same authors (Alderson et al. 2006a, b) even young adolescents, if considered as partners, display "hidden abilities," a much better understanding of their situation than adults would expect. This is especially true, when they suffer from a chronic disorder with which they have learned to live. It is thus essential that the professionals involved in the assessment are able to gauge both the developmental and psychological status of the adolescent (Levetown 2008).

In most situations, the evaluation of the adolescent patient's competence should not be delegated to a "specialist" (for example, psychologist or psychiatrist) but should stay in the hand of a member of the clinical team (doctor or other healthcare professional) who knows the adolescent and his/her social contexts. This is not to exclude the opinion of parents, other relatives, or stakeholders who are familiar with the adolescent (e.g., teacher/educator or social worker). Nonetheless, the assessment needs to be completed with a high degree of objectivity, free of pressures, or coercion. Additionally, when an adolescent suffers from a severe psychological disorder or psychiatric disease, the opinion of a psychiatrist or other mental health professional should be sought.

Involving practitioners who know the adolescent to assess competence, and conducting the interview in an empathetic, safe, and calm environment will improve the adolescent's decision-making ability by providing an environment that enables a "cold" (rather than hot) cognition process. Such an assessment takes time and should be carried out ideally on two or more separate occasions.

Facing Ethical Dilemmas in the Clinical Setting: A Step-by-Step Deliberative Approach

The previous section outlined the considerations for assessing adolescent capacity for autonomous decision making. It stresses the fact that providers have the responsibility to contribute to developing the adolescent's capacity for decision making. Furthermore, by providing adequate, appropriate, and clear information, the adolescent's ability to make an informed choice is enhanced.

The "process" of understanding the nature of the risks, understanding alternatives associated with a medical procedure or treatment and their implications for health and other aspects of an adolescent's life. This is, therefore, a shared journey between the adolescent and the provider. In addition, in some circumstances, the adolescent will be assessed as having limited capacity for autonomous decision making. In these cases, the provider will be responsible for making a decision. Consequently, this common "journey" is crucial for both the adolescent and the healthcare provider.

It is not possible to make sound ethical decisions following rigid procedures. In particular, this is true with adolescents. The healthcare provider must take into account cultural influences, legal framework, the educational

background, and the healthcare system. For instance, it may prove more difficult for a healthcare professional to guarantee autonomy and confidentiality to Sabina in a social context which firmly condemns sexual exchanges among minors, or in societies dominated by some form of male chauvinism or sexism. Along the same lines, in patriarchal societies, it may prove difficult for physicians to comply with a young patient's therapeutic choice, when the parents oppose it. Finally, in rare instances, the healthcare provider may agree to adolescent patient confidentiality related to a therapeutic choice, which is in principle illegal (e.g., an abortion).

Adolescent Health: Addressing Ethical Issues

Many authors have proposed a structured deliberative approach (see Box 3) to address ethical dilemma in the care of minor adolescents (Benaroyo 2006; Callahan 1995; Michaud et al. 2010). It is a contextualized, prudent process, which prevents anyone from immediately jumping to obvious answers and conclusions, too frequently based on emotional and biased personal judgments.

Box 3 The different steps of the deliberation are as follows:

1. Review the different options and the decisions which have to be made, as well as the main ethical issues linked with the situation
2. Assess the medical/health and psychosocial consequences of each option under consideration
3. Identify the significant people who can potentially contribute to the deliberation, besides the adolescent himself/herself
4. Recognize the ethical values which are emphasized by each option
5. Make a judgment reflecting on the best options and why, and then make a decision

A Step-by-Step Procedure with Young Patients in Decisions Affecting Their Health

1. *Review the different options and the decisions which have to be made, as well as the main ethical issues linked with the situation.*
   Faced with any situation posing an ethical dilemma, the health professional should ask what kind of options are involved in the decision and what the main ethical issues are. For instance, in some cases, the practical and ethical issues are numerous, pertaining not only to the type of procedure or treatment propose but also who is involved in the decision and how they are involved.
2. *Assess the medical/health and psychosocial consequences of each option under consideration.*
   One should reflect on all the medical consequences linked with each option. For instance, in the case of an unplanned pregnancy, the healthcare providers must consider the medical risks linked with performing an abortion, which can vary depending on the quality of care, as unsafe abortion is a frequent cause of death in low-income countries and in countries where it is illegal. Although we have evidence that legally induced abortion does not pose physical health problems for women in most instances (Charles et al. 2008), the short- and long-term potential medical and psychological consequences need to be considered an adolescent deciding to undergo an abortion versus to carrying the pregnancy to term. Such a discussion is also of utmost importance when it comes to

deciding between therapeutic options such as choosing one of the several different medications with their potential side effects or choosing between medication and high-risk surgery for the treatment of a chronic condition. While older adolescents are in general able to anticipate the impact of such decisions on their future life, younger adolescents may lack the capacity to project themselves into the future. Thus, younger adolescents should be assisted in making a decision about what is in their best interest (Alderson 2007; Alderson et al. 2006b).

3. *Recognize the ethical values which are characterized by each option*
   The ethical deliberation must not only focus on the medical and psychosocial aspects of the situation. The ethical debate must reflect how ethical principles are respected in each of the various options that the adolescent and the health professional face. What is in the best interest of the young patient? How can the healthcare professional assist the young person in preserving autonomy, while at the same time assuring protection and dignity? It is often not sufficient to weigh the respective role of the classical Belmont's values of autonomy, beneficence, and equity (Beauchamp and Childress 2001). In particular among minors who lack the cognitive skills, the physician should take into account the adolescents specific vulnerability and try to preserve their dignity. A young adolescent using an illegal substance (e.g., using cannabis in a recreational way) may feel betrayed, and experience a loss of dignity, when a healthcare provider discloses to the parents that the adolescents used cannabis. For some minor adolescents, undergoing an abortion, even in certain instances without the parents knowing, may highlight their sense of autonomy, of dignity, and of self-confidence, which can contribute to their psychological development. In some cultures, abortion may result in rejection by the family and community. While in other cultures, it would be problematic if the pregnancy is carried to term. It is important, therefore, to understand how social and individual contexts may effect each option with respect to ethical principles.
4. *Identify the significant people who can potentially be involved in the deliberation, besides the adolescent.*
   The deliberative process in ethical decision making includes, if possible, the gathering of the perspectives of other relevant stakeholders, who each can potentially contribute with their own viewpoint to clarify the ethical matters related to the situation. The decision to involve the parents can often be a particularly difficult one. On the one hand, the privacy and autonomy of the adolescent have to be respected. On the other hand, the parents or the caregiver has a right and responsibility to participate in the discussion. In most instances, the professional should primarily respect the adolescent's wish regarding such involvement. In some situations, the professional may have the duty, in the best interest of the young patient, to convince the patient that the parent's participation may ultimately be beneficial. If the parents are consulted, the professional has to make sure that they do not put too much pressure on the adolescent or threaten their child. Actually, when the parents disagree with the decision of their offspring, and if the adolescent is considered competent to make a health decision, in many countries, the choice of the adolescent should be respected (Larcher 2005; Larcher and Hutchinson 2010).
   There are other potential stakeholders who can be consulted or involved in the discussion: A teacher, a psychologist, a social worker, a close friend can be invited to give his/her opinion regarding the adolescent's competence or to the type of solution which is in his best interest. In some instances, the professional can be assisted by a religious leader and/or the leader of the local community (this can be done anonymously if the adolescent asks for confidentiality) in making a sound judgment taking into account the cultural and religious background of the

patients. This is especially relevant in countries with a high multicultural migration rate. For practical reasons, it is often not possible for the physician to obtain or use all these stakeholders' opinions. Even then, however, the ultimate guiding principle for the physician faced with tough ethical decisions is not to make the decision alone. Rather, involve one or more colleagues, who are less emotionally involved. This is what is meant by a "deliberative approach."

5. *Make a judgment reflecting on which are the best options and why, then together with the young patient make a reasoned decision*.
   Once all the values associated with the potential options have been highlighted, it is helpful for the health professional to reflect and share with the adolescent patient, his opinion and the opinions of stakeholders who have been consulted. The healthcare provider and the adolescent have to understand that some options are related to specific ethical values, while other options will highlight different ethical issues. Balancing the judgment between various options can be done within a group discussion, or by the professional and the adolescent, using all of the information available.

The procedure described above is challenging, especially in complex situations requiring more than one decision and having long-term potential medical, psychological, and social implications the young patient may experience. It calls for sophisticated communication skills. It requires the provider to be aware of the potential biases that are linked with his or her own prejudices, especially when a personal prejudice may interfere with the ability to provide a neutral assessment of the young patient's competence. This bias may arise, for example, from the practitioner's own judgment of who should be considered competent or the belief that the professional is better able to make a decision based on prognosis. A recent research study shows how different pediatricians react to a potential refusal of treatment, depending on the perceived prognosis of the condition.

Deliberation within a team is the best way to identify and deal with errors in judgment. In most parts of the world, however, practitioners do not have the luxury of working in a team. Particularly, in some low- and middle-income countries where a practitioner often works alone, they should be encouraged and provided communication resources to find at least one colleague not emotionally involved in the situation with whom to share their concerns.

In many instances, making decisions regarding health procedures and treatment as applied to minor adolescents can be difficult. Most of the comments that are made in this chapter do apply to the involvement of adolescents in research (Burke et al. 2005; Giesbertz et al. 2014; Stevens-Simon 2006). Also, it can be understood from this chapter that even adolescents who cannot be considered as fully competent should be involved in the process (a participation often referred to by the concept of "assent") (Bartholome 1995; Lee et al. 2006; Whittle et al. 2004). An adult's judgment of what is in the best interest of the adolescent, even if correct, cannot override the obligation to respect the adolescents right to be included as a participant in the discussion of their health. The assessment of competence and a careful review of all the medical, psychosocial, and ethical issues with the adolescent are the heart of a respectful approach to adolescent health care. This process is a responsibility of the health professional in charge of the patient. The health professional in charge of the young patient is responsible for seeing this process is carried out with integrity.

This global analysis of the situation should, as much as possible, involve the parents and other members of the healthcare team. There might be situations (e.g., refusal of potentially lifesaving treatment, obvious psychological symptoms) where "protection" factors affecting a child (e.g., which may imply limitation or restriction of rights) need to be assessed in relation to measures of "empowerment" (which implies full exercise of rights without restriction). In other words, one has to balance the need for the patient's autonomy and protection (Miller et al. 2004).

Because of legal constraints, in certain rare situations, despite the adolescent's competence, it may be necessary for the physician in charge to decide against the will of the adolescent (Michaud et al. 2009). However, in most of the cases, provided the assessment of decision making is carried out according to the principles outlined above, the healthcare provider and the patient will be able to find an informed solution that reflects a commonsense judgment that is in the adolescent's best interest, a so-called "shared decision."

Implications

It can be easily understood that the assessment of any minor's competence, as well as the respect for the rights of adolescents to participate in decisions affecting their health, especially when it comes to making a difficult choice between two or several options, is not a fixed process that derives from the mere application of principles. Indeed, in each situation, the healthcare provider or healthcare team must establish a climate which allows for a thorough exchange with the young person. The process must be flexible, respectful, and it is time-consuming; and the provider must take into account the developmental stage of the patient as well as the young person's social environment. It follows that, for healthcare providers to acquire the skills needed to assess the adolescent's autonomous decision making, members of the teaching institution must provide the curriculum and expertise required to develop these skills (Downar et al. 2012; Levetown 2008; London and Baldwin-Ragaven 2008). Indeed, the World Health Organization has recently issued a guidance describing the content in the area of adolescent health training at the pre-service levels. The guidance stresses the importance of communication skills when working with young participants (WHO 2015). With the advancement of medicine and technology, with more and more patients surviving critical conditions or events; with the advancement of genetics and predictive medicine, healthcare professionals will be more and more often faced with critical decisions requiring skills in the field of ethics and medical humanities. It is to be hoped that schools and faculties who train health professionals become aware of this challenge.

References

Albert, D., & Steinberg, L. (2011). Judgment and decision making in adolescence. *Journal of Research on Adolescence, 21*(1), 211–224.

Alderson, P. (2007). Competent children? Minors' consent to health care treatment and research. *Social Science and Medicine, 65*(11), 2272–2283. doi:10.1016/j.socscimed.2007.08.005.

Alderson, P., Sutcliffe, K., & Curtis, K. (2006a). Children's competence to consent to medical treatment. *Hastings Center Report, 36*(6), 25–34.

Alderson, P., Sutcliffe, K., & Curtis, K. (2006b). Children as partners with adults in their medical care. *Archives of Disease in Childhood, 91*(4), 300–303. doi:10.1136/adc.2005.079442.

Appelbaum, P. S., Grisso, T., & Hill-Fotouhi, C. (1997). The MacCAT-T: a clinical tool to assess patients' capacities to make treatment decisions. *Psychiatric Services, 48*(11), 1415–1419.

Bailly, D. (2010). Issues related to consent to healthcare decisions in children and adolescents. *Archives de pediatrie: organe officiel de la Societe francaise de pediatrie, 17*, S7–S15. doi:10.1016/S0929-693X(10)70003-8.

Bartholome, W. G. (1995). Informed consent, parental permission, and assent in pediatric practice. *Pediatrics, 95*(5), 981–982. doi:http://www.cirp.org/library/ethics/AAP/

Beauchamp, T., & Childress, J. F. (2001). *Principles of biomedical ethics* (5th ed.). New York: Oxford University Press.

Benaroyo, L. (2006). *Ethique et responsabilité en médecine*. Genève: Médecine et Hygiène.

Berry, R. M. (2005). Informed consent law, ethics, and practice: From infancy to reflective adolescence. *HEC Forum, 17*(1), 64–81.

Bolt, I. L., & van Summeren, M. J. (2014). Competence assessment in minors, illustrated by the case of bariatric surgery for morbidly obese children. *Best Practice and Research Clinical Gastroenterology, 28*(2), 293–302. doi:10.1016/j.bpg.2014.02.006.

British Medical Association. (2000). *Consent, rights and choices in health care for children and young people*. London: BMJ Publishing Group.

Burke, T. M., Abramovitch, R., & Zlotkin, S. (2005). Children's understanding of the risks and benefits associated with research. *Journal of Medical Ethics, 31*(12), 715–720. doi:10.1136/jme.2003.003228.

Callahan, D. (1995). Bioethics. In S. S. Macmillan (Ed.), *Encyclopedia of Bioethics* (3rd ed., Vol. 1, pp. 278–287). Toronto: Prentice Hall International.

Callahan, D. (2003). Individual good and common good: A communitarian approach to bioethics. *Perspectives in Biology and Medicine, 46*, 496–507.

Charles, V. E., Polis, C. B., Sridhara, S. K., & Blum, R. W. (2008). Abortion and long-term mental health outcomes: A systematic review of the evidence. *Contraception, 78*(6), 436–450. doi:10.1016/j.contraception.2008.07.005

Cook, R. J., Erdman, J. N., & Dickens, B. M. (2007). Respecting adolescents' confidentiality and reproductive and sexual choices. *International Journal of Gynecology and Obstetrics, 98*(2), 182–187.

Dickens, B., Cook, R., & Kismodi, E. (2006). *Reproductive health. Case studies with ethical commentary*. Paris: UNESCO.

Diekema, D., Mercurio, M., & Adam, M. (2011). *Clinical ethics in pediatrics. A case-based textbook*. Cambridge, United Kingdom: Cambridge University Press.

Downar, J., Knickle, K., Granton, J. T., & Hawryluck, L. (2012). Using standardized family members to teach communication skills and ethical principles to critical care trainees. *Critical Care Medicine, 40*(6), 1814–1819. doi:10.1097/CCM.0b013e31824e0fb7.

Ecoffey, C., & Dalens, B. (2003). Informed consent for children. *Current Opinion in Anesthesiology, 16*, 205–208.

English, A. (2006). Understanding legal aspects of care. In L. S. Neinstein (Ed.), *Adolescent health care: A practical guide*. Philadelphia: Lippincott Williams Wilkins.

Evans, J. S. (2008). Dual-processing accounts of reasoning, judgment, and social cognition. *Annual Review of Psychology, 59*, 255–278. doi:10.1146/annurev.psych.59.103006.093629.

Feuillet-Liger, B., Ida, R., & Callus, T. (2012). *Adolescents, autonomy and medical treatment*. Bruxelles: de Boeck.

Fischhoff, B. (2008). Assessing adolescent decision-making competence. *Developmental Review, 28*(1), 12–28.

Fisher, C. B. (2004). Informed consent and clinical research involving children and adolescents: Implications of the revised APA ethics code and HIPAA. *Journal of Clinical Child and Adolescent Psychology, 33*(4), 832–839. doi:10.1207/s15374424jccp3304_18.

Ford, C., English, A., & Sigman, G. (2004). Confidential health care for adolescents: Position paper for the society for adolescent medicine. *Journal Adolescent Health, 35*(2), 160–167.

Fox, E., Arnold, R. M., & Brody, B. (1995). Medical ethics education: Past, present, and future. *Academic Medicine, 70*(9), 761–769.

Freyer, D. R. (2004). Care of the dying adolescent: Special considerations. *Pediatrics, 113*(2), 381–388.

Geier, C. F., Terwilliger, R., Teslovich, T., Velanova, K., & Luna, B. (2009). Immaturities in reward processing and its influence on inhibitory control in adolescence. *Cerebral Cortex, 20*(7), 1613–1629. doi:10.1093/cercor/bhp225.

Geist, R., & Opler, S. E. (2010). A guide for health care practitioners in the assessment of young people's capacity to consent to treatment. *Clinical Pediatrics, 49*(9), 834–839. doi:10.1177/0009922810363610.

Gibson, B. E., Stasiulis, E., Gutfreund, S., McDonald, M., & Dade, L. (2011). Assessment of children's capacity to consent for research: A descriptive qualitative study of researchers' practices. *Journal of Medical Ethics, 37*(8), 504–509. doi:10.1136/jme.2010.040097.

Giedd, J. N. (2008). The teen brain: Insights from neuroimaging. *Journal of Adolescent Health, 42*(4), 335–343. doi:10.1016/j.jadohealth.2008.01.007.

Giesbertz, N. A., Bredenoord, A. L., & van Delden, J. J. (2014). Clarifying assent in pediatric research. *European Journal of Human Genetics, 22*(2), 266–269. doi:10.1038/ejhg.2013.119.

Griffith, R., & Tengnah, C. (2012). Assessing children's competence to consent to treatment. *British Journal of Community Nursing, 17*(2), 87–90.

Grisso, T., & Appelbaum, P. (1998). *Assessing Competence to Consent to Treatment*. New York: Oxford University Press.

Hein, I. M., Troost, P. W., Lindeboom, R., Benninga, M. A., Zwaan, C. M., van Goudoever, J. B., et al. (2014). Accuracy of the MacArthur competence assessment tool for clinical research (MacCAT-CR) for measuring children's competence to consent to clinical research. *JAMA Pediatrics, 168*(12), 1147–1153. doi:10.1001/jamapediatrics.2014.1694.

Hein, I. M., Troost, P. W., Lindeboom, R., de Vries, M. C., Zwaan, C. M., & Lindauer, R. J. (2012). Assessing children's competence to consent in research by a standardized tool: A validity study. *BMC Pediatrics, 12*(1), 1. doi:10.1186/1471-2431-12-156.

Hester, C. J. (2004). Adolescent consent: Choosing the right path. *Issues in Comprehensive Pediatric Nursing, 27*(1), 27–37.

Johnson, S. R., Blum, R. W., & Cheng, T. L. (2014). Future orientation: A construct with implications for adolescent health and wellbeing. *International Journal of Adolescent Medicine and Health, 26*(4), 459–468. doi:10.1515/ijamh-2013-0333.

Jones, B. L., Contro, N., & Koch, K. D. (2014). The duty of the physician to care for the family in pediatric palliative care: Context, communication, and caring. *Pediatrics, 133*(Suppl 1), S8–S15. doi:10.1542/peds.2013-3608C.

Kemp, P., Rendtorff, J. D., & Mattsson, N. (Eds.). (2000). *Bioethics and biolaw* (Vols. 1–2). Copenhagen: Rhodos.

Klaczynski, P. A. (2004). A dual-process model of adolescent development: Implications for decision making, reasoning, and identity. *Advances in Child Development and Behaviour, 32*, 73–123.

Larcher, V. (2005). Consent, competence, and confidentiality. *BMJ, 330*, 353–356.

Larcher, V., & Hutchinson, A. (2010). How should paediatricians assess Gillick competence? *Archives of Disease in Childhood, 95*(4), 307–311. doi: 10.1136/adc.2008.148676

Lee, K. J., Havens, P. L., Sato, T. T., Hoffman, G. M., & Leuthner, S. R. (2006). Assent for treatment: Clinician knowledge, attitudes, and practice. *Pediatrics, 118*(2), 723–730. doi:10.1542/peds.2005-2830.

Levetown, M. (2008). Communicating with children and families: From everyday interactions to skill in conveying distressing information. *Pediatrics, 121* (5), e1441–1460. doi:10.1542/peds.2008-0565

London, L., & Baldwin-Ragaven, L. (2008). Human rights and health: challenges for training nurses in South Africa. *Curationis, 31*(1), 5–18.

Michaud, P. A., Berg-Kelly, K., Macfarlane, A., & Benaroyo, L. (2010). Ethics and adolescent care: An international perspective. *Current Opinion in Pediatrics, 22*(4), 418–422. doi:10.1097/MOP.0b013e32833b53ec.

Michaud, P. A., Berg-Kelly, K., Macfarlane, A., Renteria, S. C., Wyss, D., & Benaroyo, L. (2009). Addressing ethical dilemmas in the clinical care of adolescents: An international view. *Adolescent Medicine: State of the Art Reviews, 20*(3), 949–960.

Michaud, P. A., Suris, J. C., & Deppen, A. (2006). Gender-related psychological and behavioural correlates of pubertal timing in a national sample of Swiss adolescents. *Molecular and Cellular Endocrinology, 254*, 172–178. doi:10.1016/j.mce.2006.04.037.

Miller, V. A., Drotar, D., & Kodish, E. (2004). Children's competence for assent and consent: A review of empirical findings. *Ethics and Behavior, 14*(3), 255–295. doi:10.1207/s15327019eb1403_3.

Modi, N., Vohra, J., Preston, J., Elliott, C., Van't Hoff, W., Coad, J., … Child, H. (2014). Guidance on clinical research involving infants, children and young people: An update for researchers and research ethics committees. *Archives of Disease in Childhood, 99* (10), 887–891. doi:10.1136/archdischild-2014-306444

Nelke, T. (2001). *Adolescents, early marriage and the convention on the rights of the child in Arab societies*. Larnaca: Swedish Save the Children.

O'Donovan, K. (1996). Mature minors are individuals. *Politics Life Sciences, 15*(2), 301–302.

Obradović, J., van Dulmen, M. H., Yates, T. M., Carlson, E. A., & Egeland, B. (2006). Developmental assessment of competence from early childhood to middle adolescence. *Journal of Adolescence, 29*(6), 857–889. doi:10.1016/j.adolescence.2006.04.009.

Partners in the BIOMED-II Project. (1998). *The Barcelona proposal to the European Commission on basic ethical principles in bioethics and biolaw*. Retrieved from https://www1.umn.edu/humanrts/instree/barcelona.html

Paxman, J. M. (1978). Law, policy and adolescent sexuality. *Journal of Biosocial Science, 10*(S5), 187–213.

Pousset, G., Mortier, F., Bilsen, J., Cohen, J., & Deliens, L. (2011). Attitudes and practices of physicians regarding physician-assisted dying in minors. *Archives of Disease in Childhood, 96*(10), 948–953. doi:10.1136/adc.2009.182139.

Rendtoff, J. D. (2002). Basic ethical principles in European bioethics and biolaw: Autonomy, dignity, integrity and vulnerability—towards a foundation of bioethics and biolaw. *Medicine, Health Care and Philosophy, 5*(3), 235–244.

Rosato, J. L. (1996). The ultimate test of autonomy: Should minors have a right to make decisions regarding life-sustaining treatment? *Rutgers Law Review, 49*(1), 1–103.

Ryan, E. P., & Murrie, D. C. (2005). Competence to stand trial and young children: Is the presumption of competence valid? *Journal of Forensic Psychology Practice, 5*(1), 89–102.

Sanci, L. A., Sawyer, S. M., Kang, M. S., Haller, D. M., & Patton, G. C. (2005). Confidential health care for adolescents: Reconciling clinical evidence with family values. *Medical Journal of Australia, 183*(8), 410–414.

Schachter, D., Kleinman, I., & Harvey, W. (2005). Informed consent and adolescents. *Canadian Journal of Psychiatry, 50*(9), 534–540.

Schneider, A., Körner, T., Mehring, M., Wensing, M., Elwyn, G., & Szecsenyi, J. (2006). Impact of age, health locus of control and psychological co-morbidity on patients' preferences for shared decision making in general practice. *Patient Education and Counseling, 61*(2), 292–298. doi:10.1016/j.pec.2005.04.008.

Shaw, M. (2001). Competence and consent to treatment in children and adolescents. *Advances in Psychiatric Treatment, 7*(2), 150–159.

Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences, 9*(2), 69–74. doi:10.1016/j.tics.2004.12.005.

Steinberg, L. (2013). Does recent research on adolescent brain development inform the mature minor doctrine? *Journal of Medicine and Philosophy, 38*(3), 256–267. doi:10.1093/jmp/jht017.

Stevens-Simon, C. (2006). Assent in pediatric research. *Pediatrics, 118*(4), 1800–1801. doi:10.1542/peds.2006-1577.

Tan, J., Hope, T., & Stewart, A. (2003). Competence to refuse treatment in anorexia nervosa. *International Journal of Law and Psychiatry, 26*(6), 697–707.

Turrell, S. L., Peterson-Badali, M., & Katzman, D. K. (2011). Consent to treatment in adolescents with anorexia nervosa. *International Journal of Eating Disorders, 44*(8), 703–707. doi:10.1002/eat.20870.

UNICEF. (1989). Convention on the rights of the child. Retrieved from http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1007&context=child

Viljoen, J. L., Slaney, K. L., & Grisso, T. (2009). The use of the MacCAT-CA with adolescents: an item response theory investigation of age-related measurement bias. *Law and Human Behavior, 33*(4), 283–297. doi:10.1007/s10979-008-9154-8.

Warner, E. A., Walker, R. M., & Friedmann, P. D. (2003). Should informed consent be required for laboratory testing for drugs of abuse in medical settings? *The American journal of medicine, 115*(1), 54–58.

Weller, J., Levin, I. P., Rose, J., & Bossard, E. (2012). Assessment of Decision-making Competence in Preadolescence. *Journal of Behavioral Decision Making, 25*(4), 414–426.

Whittle, A., Shah, S., Wilfond, B., Gensler, G., & Wendler, D. (2004). Institutional review board practices regarding assent in pediatric research. *Pediatrics, 113*(6), 1747–1752.

WHO. (2015). *Core competencies in adolescent health and development for primary care providers: Including a tool to assess the adolescent health and development component in pre-service education of health-care providers*. Geneva: World Health Organization.

Financial Protection for Adolescents' Health Care

19

Catriona Waddington and Claudia Sambo

Introduction: Universal Health Coverage, Financial Protection, and Adolescents

Previous chapters have discussed adolescents' health and their service requirements. This chapter explores how health services for adolescents are paid for, and how this affects both the supply of services and the extent to which adolescents access them. In this chapter, the term universal health care (UHC) is used to describe a healthcare system where everyone (regardless of their, race, age, preexisting conditions, or gender) has access to health services without the risk of financial hardship. The chapter is intended for an audience from a variety of disciplines with an interest in adolescent health and is not written solely for economists.

In previous chapters, the specific health needs of adolescents have been discussed including sexual health needs, reproductive health needs, mental health treatment, and treatment for traumatic experiences. The particular social challenges facing adolescents have also been discussed. Adolescents may still be dependent on their parents financially, but emotionally want some independence. They may face strong cultural pressures, particularly about adolescent sexual behavior. It is generally assumed that adolescents' compliance with healthcare protocols is worse than that of the average adult (e.g., regarding the recommended number of antenatal visits or adherence to HIV treatment) although there is not always evidence to substantiate this assumption. Finally, as with all large groups, generalizations mask many differences: Not all adolescents live with their parents; some are employed and some not; some are particularly stigmatized because of issues such as substance abuse or their sexual behavior.

Against this background of the particular needs of adolescents, this paper is structured around three main questions:

- Which adolescents are covered by a pooled funding arrangement (insurance or tax-based)?
- How are adolescents affected by direct payments for health services?
- What services tend to be included in pooled funding arrangements (tax-funded or insurance)? Do they meet the needs of all adolescents?

Review of the Literature

We conducted a review of both academic and gray literature. Our methods were informed by two assumptions: (a) That the literature on this

C. Waddington (✉) · C. Sambo
International Health, Mott Macdonald, 10 Fleet Place, London EC4M 7RB, UK
e-mail: catriona.waddington@mottmac.com

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_19

topic would be limited and (b) that the age group 10–19 years old defined as "adolescents" is referred to in a variety of ways (e.g., children, teenagers, young people). Therefore, we searched as broadly as possible in order to "tease out" the maximum possible amount of relevant material.

Search Strategy

After a brief review of key background documents on adolescents, we conducted both structured and unstructured searches in a number of databases and Web sites, as well as on Google and Google Scholar. We started with broad searches on Google, followed by more targeted ones on PubMed. On Google and Google Scholar, we used a combination of keywords and phrases including adolescents, teenagers, young people, young women, children, youth, health, universal health coverage, healthcare expenditures, health insurance, user fees, user charges, equity, cost-sharing, financial barriers, primary health care, out-of-pocket expenditures, risk pooling, catastrophic expenditures. When searches yielded results mainly from the USA, we added the terms "Africa" and "Asia," and "Latin America" to refine results. For each search, we scanned 10 pages of search results to identify potentially relevant documents (based on the title and short description). On Google Scholar, we used the "related articles" function to identify further studies and verify that key papers had not been omitted.

On PubMed, we started by looking at all the "related citations" for two relevant articles we had identified.[1] We then searched the database using a combination of Medical Subject Headings (MeSH) terms (adolescent, teenager, young adult, adult children, insurance, health/economics, health services/utilization, health/utilization, universal coverage/economics, developing countries, and exemption/tax). We also conducted free text searches, using the Google search strategy described above (Table 19.1).

We searched a number of Web sites, databases, and individual journals including the following: European Observatory on Health Systems and Policies; Health Systems Evidence database (McMaster University); ADOLEC; UNICEF; International Labor Organization (ILO); Organization for Economic Co-operation and Development (OECD: health); International Network Health Policy & Reform archives; National Bureau of Economic Research; Joint Learning Network on UHC (a platform that aggregates information about UHC); Equitable Health Financing (a tool to navigate the evidence on different health financing methods in low- and middle-income countries); GEFF platform (Global Extension of Social Security); The Commonwealth Fund; Kaiser Family Foundation; International Journal of Adolescent Health; Journal of Adolescent Health; Health Policy Journal; Health Policy and Planning; WHO Maternal, Newborn, Child and Adolescent Health; and The World Bank. We also supplemented the searches with expert advice from key informants.

Criteria for inclusion. We included both articles in peer-reviewed journals and gray literature (e.g., policy reports) but excluded any type of opinion pieces. We excluded non-English language documents, with the exception of those with an abstract in English. We used 1990 as an arbitrary cutoff point.

Table 19.1 For illustration only, the table below shows the volume of articles from selected searches

Search terms (MeSH)	Filter	No. of articles
Adolescent and health insurance	–	5439
As above	Last 10 years	2505
As above	USA	1721
As above	Developing countries	7
–	Latin America	3
Teenager, utilization, and health services	–	0

[1]Nguyen and Knowles (2010) had 164 related citations; Hampshire et al. (2011) had 115 related citations.

We screened all material by title and abstract/description in search engines. For the analysis, and largely due to the scarcity of literature, we grouped the articles by origin (USA, other developed/OECD countries, and developing countries).

As confirmed by a previous review by Meng et al. (2011), the majority of studies come from the USA. In order to maintain geographic balance, we only included a limited selection of these. Given the significant recent changes in US health insurance arrangements, we concentrated on recent publications. We also focused on comprehensive reviews rather than on specific references about particular aspects of adolescent health.

As the overarching framework for inclusion of documents and journal articles, we considered the relevance to the key dimensions of universal health coverage (UHC) for adolescents, around which the paper is structured:

1. Which adolescents are covered by a pooled funding arrangement (insurance or tax-based)?
2. How are adolescents affected by direct payments for health services?
3. What services tend to be included in pooled funding arrangements (tax-funded or insurance)?

Do They Meet the Needs of All Adolescents?

A key finding from our searches is that the literature on health financing and adolescents is very scattered. There is relatively little work specifically about the topic. Most references were about health financing issues in general (i.e., for all ages), or about health services for adolescents, with passing reference to health financing concerns. There is certainly no body of global research specifically about health financing and adolescents. For this reason, this paper is not a systematic review. Instead, it uses available literature to explain and illustrate the financial challenges related to UHC for adolescents.

Universal Health Coverage (UHC) and Financial Protection: An Introduction

The way in which health services are funded is an important aspect of UHC (WHO 2010).[2] In almost all countries, there is some form of direct payment for services (also called cost-sharing). As a general rule, the poorer the country, the higher the proportion of total healthcare funding which is raised through direct fees from the user/patient. Reducing dependence on direct payments requires governments to encourage risk pooling and prepayment so that individuals are financially protected. This entails payments made in advance of an illness (as insurance premiums or taxes), with the money pooled in some way and used to pay for health services for everyone who is covered.

To achieve UHC (or as close to full achievement as is possible) progress needs to be made with three crucial aspects of financing:

- The number of people covered by a pooling arrangement (i.e., they have insurance or are eligible to use facilities which are financed from pooled funds)
- Reductions in fees (direct payments)
- The range of services covered by the pooling arrangements (e.g., Are drugs and inpatient, outpatient and preventive services all included?).

This is illustrated in Fig. 19.1, the so-called health financing cube. It shows the situation in a hypothetical country where about half the population is covered for about half of the possible services, and about half of the cost of these services is met from pooled funds. To get closer to universal coverage, the country would need to extend coverage to more people, offer more services, and/or pay a greater part of the cost with pooled funds. In terms of the "cube," the greater the shaded-in area, the closer the country is to UHC. The shaded-in area equates to the area of financial protection.

[2]The financing concepts in this section are drawn directly from the World Health Report 2010.

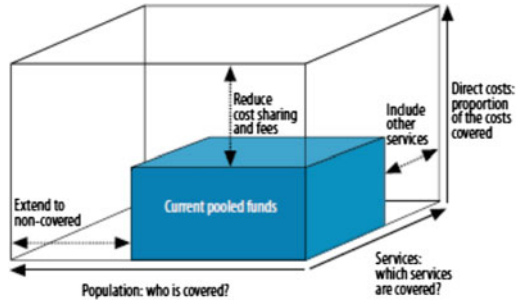


Fig. 19.1 Three dimensions to consider when moving toward universal coverage. *Source* Reproduced from WHO (2010)

Figure 19.1 can be used to think about the funding of health care for adolescents:

- For the horizontal axis, the question is "*Which adolescents are covered by a pooling arrangement (insurance or tax-funded system)?*"
- For the vertical axis, the question is "*How* are *adolescents affected by direct payments for health services?*"
- For the third dimension, the questions are "*What services tend to be included in pooled funding arrangements (tax-funded or insurance)? Do they meet the needs of all adolescents?*"

This study addresses these questions in the context of adolescents and their healthcare needs. It then concludes by considering how health financing as a whole impacts on the availability of health services which are appropriate and accessible to adolescents.

Which Adolescents Are Covered by a Pooling Arrangement?

"Pooling arrangements" refer to health insurance and to health systems that are funded directly by the government from taxation. Payments are made in advance of an illness and pooled in some way by an insurance fund or government. The pooled money is then used to pay for services for everyone who is covered by the fund. Pooling is a necessary part of financial protection.

Although insurance- and tax-based systems are in some ways very different, they both involve providing eligible members/citizens with a package of services which are available at no, or highly subsidized, cost at the time of using the services. They both protect people from potentially catastrophic out-of-pocket payments for health care. Box 1 illustrates how adolescents can benefit from being covered by family health insurance in the words of two young women from Ghana.

Box 1 Adolescents can Benefit from Family Insurance Coverage: Examples from Ghana

> The doctor requested a laboratory test and then prescribed some drugs for me. I did not pay money because of the NHIS (National Health Insurance Scheme). I was also confident going through the process because of the NHIS. The scheme has allowed more children to go to health facilities alone, because the authorities will not ask you to pay for the service. It is a good scheme for us children. (15-year-old urban female)

> I have had the (NHIS) card for two years. I have used it twice. My mother keeps the card, but I know where she keeps it, so I can take it if I need it. So that day I took my card…and went to the hospital. I explained all to the doctor, who prescribed some drugs. I was not afraid because I have the NHIS card, so I know I will not have to pay…Once you have the card, you don't fear illness: you can just take the card and go. There is no need to worry about money. (11-year-old urban female)

Source Hampshire et al. (2011).

In every country, there are some people who are too poor to contribute to pooled health funds through income taxes or insurance premiums. They need to be subsidized from some pooled fund, normally government revenue. This can take the form of direct access to government-financed services or subsidies to insurance premiums (WHO 2010).

The term "adolescence" is rarely used in the health financing literature; references are generally to "children," which is usually (but not always) defined as aged 18 or below. Children can be part of a pooling arrangement in three main ways:

- They are a member of a family which has insurance cover that includes some or all of the children in the family.
- They are entitled to use health services which are funded by the government. This may be because they live in a country where most services are directly provided by government (such as the UK) or because they are entitled to government-funded services that complement insurance-funded services (such as in Armenia for certain categories of vulnerable children, see Table 19.2).
- They have their own individual insurance coverage, either paid for by their parents/guardians or among older adolescents who have a job, they buy their own insurance coverage.

The situation for children in many countries is mixed. Children from richer families or with a parent in a formal sector job (e.g., the civil service) may be covered by health insurance. Children may also pay lower fees than adults in public health facilities, though the quality of these facilities may be very poor and some children will live a long way from a health facility, which limits their access. The situation for children in these cases mirrors the situation of the family as a whole in terms of their socioeconomic status and where they live.

Table 19.2 illustrates the variety of arrangements available for children/adolescents. In some countries, governments pay insurance premiums for all children (e.g., the Netherlands). Other governments pay the premiums of some children (e.g., for children in families below the poverty line in Andhra Pradesh, India). No co-payments are levied for children in Sweden, or there are fewer co-payments than adults pay, such as in Switzerland. Some governments complement health insurance by funding services for some children directly (e.g., Armenia for certain categories of vulnerable children). The age range of young people who are entitled to these types of benefits varies from country to country: The most common cutoff age is 18 years, but it is 17 in Uzbekistan, 19 in Switzerland, 20 in Sweden, and 21 in the Philippines. Children in high-income countries are more likely to be part of a pooled arrangement than children in middle- and low-income countries. In a summary of 27 countries with social health insurance schemes in Asia and Africa, UNICEF found that only eight countries had schemes where children up to age 17 had mandatory coverage (O'Connell 2012).

Table 19.2 has shown the variety of arrangements available for children and adolescents. The following examples from Vietnam and the USA illustrate, in more detail, efforts to improve adolescents' financial protection by expanding pooled funding schemes.

Vietnam adopted social health insurance in 1992 (Nguyen and Knowles 2010). There are two types of schemes: compulsory and voluntary. The main groups covered by compulsory insurance are civil servants, employees of private firms, retired people, and some poor and vulnerable population groups who are eligible for government-paid insurance. Although in theory any uninsured person can join a voluntary scheme, in practice voluntary insurance is overwhelmingly dominated by students. Voluntary insurance is typically sold through existing organized groups because there is no established mechanism for selling it to the general public. In practice, the only scheme that expanded was the students' scheme, which extended to include a significant number of members. Attempts to develop voluntary insurance programs for other organizations (e.g., Farmers' Unions) were not successful.

The Vietnam Social Security entity delegates promotion and sales of insurance membership to schools and universities. This was key to the success of the scheme. In 2005, 45 % of students had voluntary health insurance. Within the overall student body, health insurance coverage increases with schooling level and is particularly high among upper secondary school students. Poorer families, those with a less educated head of the family and ethnic minorities, are less likely

Table 19.2 Examples of health insurance coverage for adolescents*

Country	Status of adolescents in the main national health financing scheme	Source
Armenia	All patients falling into a socially vulnerable group are eligible to receive a comprehensive package of services, which is funded by government and is reviewed annually. In 2004, vulnerable groups included children/adolescents under the age of 18: – with disabilities – with a disabled parent – from a single-parent household – without family – under regular medical care	Hakobyan et al. (2006)
Czech Republic	The Ministry of Finance pays social health insurance contributions for certain economically inactive people (e.g., children, students, unemployed, asylum seekers). In 2008, the ceiling for co-payments was lowered for children and adolescents. Children up to 18 are exempt from user fees for doctor's visits	Bryndová et al. (2009)
France	Children are exempt from cost-sharing payments for some services: – Pharmaceuticals: Children under the age of 16 and disabled children – Outpatient care: MMR vaccines for children under 13 – Inpatient care: disabled children	Hossein and Gerard (2013)
Germany	Children under 18 years of age are exempt from cost-sharing for pharmaceuticals, outpatient care, and inpatient care	Hossein and Gerard (2013); Blümel (2013)
Kazakhstan	Children, adolescents, and women of reproductive age are entitled to free medicines (i.e., the main type of benefit requiring co-payments)	Katsaga et al. (2012)
Iceland	Children under the age of 18 are exempt from cost-sharing. General health care provided in schools, teenagers' visits to general practitioners, preventive information services, and maternity care are also provided free of charge	Thomson et al. (2013)
India (Andhra Pradesh)	The Rajiv Aarogyasri scheme covers care for all residents below the poverty line. This is mainly tertiary care, but also primary and secondary. The scheme is paid for by the state (not federal) government. Everyone in a household can be included on the Health Card (i.e., head of the family, spouse, dependent children and dependent parents). The Health Card captures the family's data and pictures of each family member. It is presented by beneficiaries when they arrive at a health facility to identify them. There is no deductible or co-payment for seeking care, and because the system is entirely cashless patients are admitted, treated, and discharged without exchanging any money	Joint Learning Network for UHC Web site (n.d.b)
The Netherlands	Children under the age of 18 are insured free of charge, but they must be included in one of the parents' policies. The nominal premium for children is paid by the government. Although basic health insurance is compulsory, not every citizen is insured. In 2008, 171,000 persons were uninsured—of these, 35,000 were children. If seeking health care, the uninsured risk a penalty for the period they were not covered. Children under 18 do not have to pay the penalty, but there is no reimbursement for their healthcare costs. The main reasons for children being uninsured are because they are illegal immigrants or because of family religious beliefs/philosophy of life	Schäfer et al. (2010)

(continued)

Table 19.2 (continued)

Country	Status of adolescents in the main national health financing scheme	Source
Norway	There is a cost-sharing ceiling, set each year. Certain groups are exempt from cost-sharing. Children under the age of 16 receive free physician treatment and access to essential drugs in the formulary, and those under the age of 18 receive free psychological and dental care	Johnsen (2006); Lindahl (2013)
Philippines	Enrollment in PhilHealth is by family, so the premium paid covers the member, spouse, eligible children (those less than 21 years of age), and eligible parents (60 years and above depending financially on the member). Given that enrollment is by family, documentation of proof of marriage and birth(s) is required. This is a problem for the indigenous population, as they usually do not have marriage and birth certificates	Joint Learning Network for UHC Web site (n.d.a)
Sweden	There are user charges, but in almost all county councils children and young people (under 20 years of age) are exempt from fees for health care and dentistry	Anell et al. (2012)
Switzerland	Out-of-pocket spending on covered services is capped. The cap for minors under 19 years of age is about half of the adult cap. Minors are exempt from co-payments for inpatient care	Camezind (2013)
Uzbekistan	Children and adolescents up to the age of 17 are exempt from paying for pharmaceuticals (which are not included in the basic benefits package) and inpatient meals	Ahmedov et al. (2007)

*In these examples, we deliberately kept the terminology used in the sources (e.g., adolescent, child, minor) to show the variety of terms and age groupings

to have a child in upper secondary school. Insurance coverage was very strongly correlated with household income. Boys were much more likely to be insured than girls.

Although data on age is not available (educational years were used instead), it is reasonable to assume that the majority of members of this voluntary scheme were adolescents. This example shows us that schemes targeted at adolescents can be successful in attracting members, but that the targeting does not necessarily avoid the inequalities of the wider society (in terms of wealth, ethnicity, gender, education).

Vietnam is clearly not the only country to use schools and colleges as convenient bases for expanding insurance membership. In the 1990s, the Egyptian government started a subsidized insurance system for school children. The school health insurance program significantly improved utilization and reduced the overall cost of health services for many children. While in many ways the program was successful, it nevertheless widened the differential in access between school-going children and those not attending school (Yip and Berman 2001).

The literature on health financing for children and adolescents is dominated by studies from the USA. Because of this—and because the US experience has lessons for many other countries developing universal health insurance—the American example is described here in some detail.

In 2013, 7.6 % of children (18 years old and younger) in the USA were uninsured: a decrease from 9.7 % in 2011. The uninsured rate among young adults (19–25 years old) was 22.6 % (Majerol et al. 2015)[3] in 2013, down from 27.9 % in 2011. Insurance in the USA is generally received as part of an employment package or through a government scheme such as Medicare, Medicaid or the Children's Health

[3]Information on the uninsured in the USA is taken predominantly from the Kaiser Commission *Primers* about uninsured people.

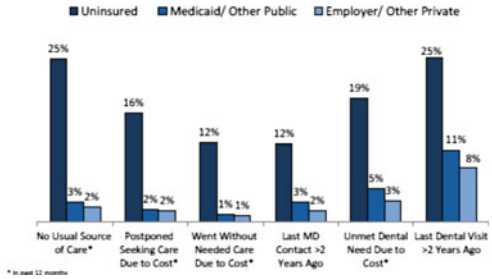


Fig. 19.2 Children's access to care by health insurance status, 2013: Less health care for the uninsured. *Source* Majerol et al, Kaiser Commission (2015)

Insurance Program. Being uninsured affects both access to healthcare and financial security. Uninsured people in the USA are less likely to receive preventive care and more likely to be hospitalized for preventable conditions. Medical bills can be devastating for uninsured families and can quickly lead to debt. Uninsured children are significantly more likely to delay accessing health care or to have unmet medical needs than children with insurance. Some of the effects of being uninsured are illustrated in Fig. 19.2.

Medicaid and the Children's Health Insurance Program (CHIP) are government schemes that cover four main categories of low-income individuals: children, their parents, pregnant women, and individuals with disabilities. Federal law requires states to cover all school-aged children whose family is at or below the poverty level, and all preschool children whose family is at or below 133 % of the poverty level. Medicaid is the largest insurer of children in the USA, with 31 million non-disabled children enrolled in 2009. CHIP covers almost 8 million additional children in families with low or moderate incomes, but too "wealthy" to qualify for Medicaid. Medicaid and CHIP between them cover one-third of all children in the USA and more than two-thirds of children in families below the poverty level.

Despite the size of Medicaid and CHIP, there remains a significant problem of non-enrollment. In 2011, 53 % of uninsured children were eligible for Medicaid or CHIP, but not enrolled (a reduction from the 2009 level of 65 %). This is over 3.1 million children who are eligible for benefits from these schemes but are not enrolled. For some families, this was a matter of knowledge about eligibility for the schemes; for others, the enrollment and renewal procedures were too burdensome or confusing. Policy steps such as express lane eligibility and streamlined renewal processes would be likely to increase enrollment (Kenney et al. 2011).

Broad Medicaid and CHIP eligibility for children has helped maintain coverage for children despite the economic downturn and slow recovery. Inspite of the economic conditions, the percentage of children who are insured actually increased slightly between 2007 and 2011. This is in contrast to the worsening situation for adults (Fig. 19.3). In general, children are more likely to be insured than adults.

The Affordable Care Act (ACA) of 2010 aims to reduce the numbers of uninsured. While mainly targeted at adults, it does help children who have had difficulty obtaining health insurance because of health problems. The ACA prohibits insurance plans from denying children cover because of preexisting medical conditions or from excluding preexisting conditions from the coverage package.

Non-US citizens, whether legal or undocumented, are about three times more likely to be uninsured than citizens. Until recently, states were not allowed to use federal money to provide Medicaid or CHIP coverage to legal immigrants who had been in the USA for less than 5 years. This changed in 2009. By the end of 2011, 24 states had chosen to eliminate the waiting period for lawfully residing immigrant children.

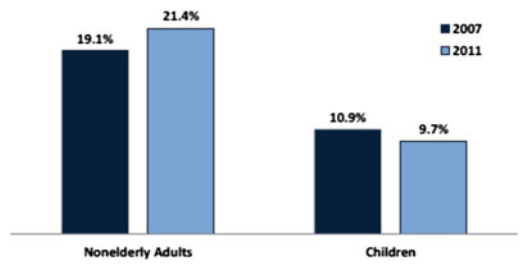


Fig. 19.3 Uninsured rate for non-elderly adults and children, 2007 and 2011. *Source* Kaiser Commission (2013)

Undocumented immigrants remain ineligible for federally funded health coverage.

Young people aged 19–25 years old are almost three times more likely to be uninsured than children and adolescents (22.6 % of young adults were uninsured in 2013, down from 27.9 % in 2010). Much of the decline in the numbers of uninsured young adults was because the ACA allows young adults to remain on a parent's private health plan. Higher insurance coverage rates for young adults have accounted for about 40 % of the overall improvement in insurance coverage in recent years. Nevertheless, young adults continue to have a very high uninsured rate, largely because of their low incomes. More than half of the uninsured young adults are from families with at least one full-time worker, but their low incomes make it difficult to afford health insurance.

In the USA, legislation has been used to improve coverage for adolescents. Different government schemes fund health services for various groups of vulnerable adolescents, such as those in families below the poverty line. It is striking, however, that there are over four million children (many of whom will be adolescents) who are eligible for government support but are not enrolled. A major reason for this lack of enrollment is lack of awareness. In the USA in 2001 more than 80 % of low-income parents said they would enroll their uninsured adolescents aged 13–17 in a government program if they knew that their adolescents were eligible. Only 43 % of parents of low-income uninsured adolescents believed their adolescents were eligible for coverage: a much lower percentage than for the parents of young children (Lawrence et al. 2009).

Table 19.2 and the examples from Vietnam and the USA help answer the question posed at the start of this section: *which adolescents are covered by pooling arrangements?*

- Where insurance coverage depends on a combination of employment status and income, *some* adolescents are covered, mainly as part of a family plan belonging to a parent. This generally covers children up to age 18, though there is some variation in this and in the USA, it has been extended to age 26.
- It is possible to increase coverage among adolescents by targeting groups to which they belong (e.g., students in the Czech Republic and Vietnam). Many adolescents attend school: Working with schools can be one efficient way to increase enrollment among adolescents.
- Some governments pay insurance premiums for children. This may be for all children (e.g., the Netherlands) or for particular groups (e.g., children below the poverty line in the USA).
- Older adolescents (particularly 19-year-olds) seem particularly likely to be uninsured for a variety of reasons. They are less likely to be students in Vietnam; in the USA, they are likely to be in low-income jobs where health insurance cover is not a viable option; and many schemes for children end at age 18 (e.g., Armenia, Germany, Iceland).
- Schemes targeted at children or adolescents do not necessarily avoid the inequalities of the wider society (in terms of wealth, ethnicity, gender, and education).
- Even when adolescents are eligible for a scheme, many may not actually join. This may be because of the cost (e.g., Vietnam), lack of information, burdensome enrollment procedures (USA), or because it is thought that adolescents are generally healthy and do not require cover.
- Some children and adolescents can be ineligible for even quite large schemes (adolescents not in school in Vietnam; undocumented immigrants in the USA; children without birth registration in China) (O'Connell 2012).
- As for all age groups, some adolescents have multiple vulnerabilities: They may live away from their parents, work under very poor labor conditions and misuse substances, for example.

How Are Adolescents Affected by Direct Payments for Health Services?

In almost all countries, there is some form of direct payment for services. Direct payments can take the form of a fee that covers the whole cost of a service (e.g., for an uninsured consultation with a private doctor); a fee that covers part of the cost in, for example, a government-subsidized clinic; or an insurance co-payment. A co-payment is when an insured patient is required to pay a fee at the time of using a health service. The difference between the co-payment and the total cost of the service is then covered by the insurance. Co-payments and partial cost fees are also known as "cost-sharing."

Direct payments threaten financial protection because they can mean that services are not used purely because of the money required. For adolescents, there are two issues related to payments: the *level of payment* (is it affordable to the adolescent and his/her family?) and the adolescent's *access to money* (is it their own money or that of another family member?).

The Level of Payments: Reducing Costs Through Exemptions and Vouchers

As a general rule, the poorer the country, the higher the proportion of total healthcare funding which is raised through direct fees. In 2007, there were 33 countries, mostly low income, where direct fees represented more than 50 % of total health expenditure (WHO 2010).

Some direct payments can be catastrophic: They involve a very large proportion of a household's available income and cause the household to fall into poverty. It is estimated that as many as 178 million people could suffer financial catastrophe each year as a result of direct healthcare payments (Yardim et al. 2010). How this affects adolescents in particular is not known. What is known, however, is that in some countries (e.g., China and Turkey) households with preschool children are generally better protected from catastrophic payments than average. In Turkey, one contributing factor to this is the availability of free maternal and child primary health care (Li et al. 2012; Yardim et al. 2010).

In 2009, a survey of 50 high-mortality countries (39 in Africa and 11 in Asia) found that only six did not have any form of user fees in the public sector (Witter 2010). Of the countries with fees, all but two offered a range of exemptions, mainly focusing on communicable diseases, but also targeting vulnerable groups such as the poor. Key respondents stated that there were exemptions for the poor (54 % of respondents said "yes" to this category); TB (54 %), HIV (53 %), immunization (42 %), children (35 %), leprosy (35 %), maternal conditions (35 %), orphans and vulnerable children, malaria, the elderly (17 % each), ex-servicemen (10 %), the disabled (6.5 %), civil servants (6.5 %), the unemployed (3 %), and adolescents (1 %).

In the first decade of the 2000s, many high-mortality countries reformed their policies about fees: The main change was exemptions for deliveries, but several countries also exempted children, though this tended to be children under five years of age. Even when there were exemptions, the survey recorded a certain amount of skepticism about how effective this was: In practice, many facilities seemed to continue to charge exempt groups.

Moving away from high-mortality states, many countries have reduced or removed direct payments for using health services (fees or insurance copayments). Table 19.2 in the previous section includes several examples of children/adolescents having to pay lower co-payments than adults, or no co-payment at all (e.g., Czech Republic, Germany, Kazakhstan, Iceland, Norway, Switzerland, and Uzbekistan). Box 2 shows the impact on utilization in Norway when co-payments for adolescents aged 12–16 years were abolished.

Box 2 The Abolition of Co-payments for Adolescents Aged 12–16 Years

In Norway, co-payments for 12–16-year-olds were abolished in 2012.

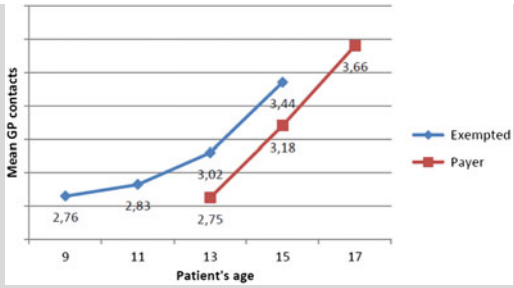


Fig. 19.4 Comparison of GP contacts of paying and exempted adolescents by age. *Source* Zeratsion (2013)

Figure 19.4 shows that both 13- and 15-year-old adolescents who were exempted from co-payment visited the general practitioner more than adolescents who had to pay. The difference is significant at p value < 0.005. These were the only two ages for which a direct comparison was possible, because there were no 9–11-year-olds in the study who had ever had to pay a co-payment, and no 17-year-olds who had ever been exempt. Figure 19.4 also shows the rise in primary care utilization as young adolescents become older (particularly after the age of 13) meaning that older adolescents benefited more frequently from an exemption than younger ones. Adolescent girls of all ages are in general more frequent users of primary care than adolescent boys (Zeratsion 2013).

Another way in which direct payments can be removed is to provide vouchers, which can be used to access care at no charge. In Nicaragua, a project distributed vouchers to 16,850 adolescent females aged 12–20 in disadvantaged areas of Managua. Voucher receivers had a significantly higher use of sexual and reproductive health care (34 % of a random sample of just over 3000 female adolescents) compared with non-receivers (19 %, see Fig. 19.5). A study concluded that "voucher receipt can be considered the main causal factor for improved use of services, knowledge, and use of contraceptives and condoms" in this study population (Meuwissen et al. 2006a). Qualitative work confirmed that the removal of the fee (on average about US $6) was an important reason for the effectiveness of the vouchers, but that the open access (i.e., no appointment needed), guarantee of confidentiality, and information about clinic location and opening times that accompanied the voucher were also important (the acceptability of services to adolescents is discussed in more detail in the next section of this paper.) Of those who received vouchers, the utilization of health services increased the most among girls who were

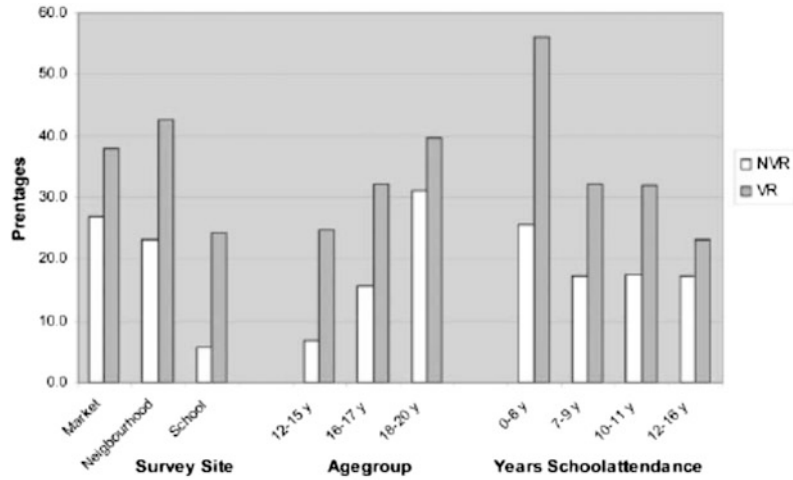


Fig. 19.5 Impact of vouchers on use of sexual and reproductive health care by subgroups. Legend: *NVR* Not a voucher recipient; *VR* voucher recipient; *Y-axis* percentage of randomly sampled female adolescents (n = 3009). *Source* Meuwissen et al. (2006a)

sexually active, who were neither mothers nor pregnant, and who wanted access to contraceptives (Meuwissen et al. 2006a, b).

Adolescents' Access to Cash: Their Own and Their Family's

There are many ways in which adolescents access resources for health care. Many adolescents, especially younger ones, rely on their family. Many adolescents, however, use health care without consulting their adult caretaker. For example, a study in western Kenya found that, of all the medicines taken by school children aged 11–17 during a study period of 30 weeks, two-thirds were provided or facilitated by adults, while one-third were taken by the children themselves without adult involvement (self-treatment). At all ages, boys self-treated more than girls, with the proportion of illnesses which were self-treated rising with the age of the boy. On average, the proportion of Western pharmaceuticals (as opposed to herbal medicines) used for self-treatment was 52 %. This increased with age and was considerably higher in boys than girls. Boys and older children had greater access to Western pharmaceuticals because of their greater income earning opportunities: However, their incomes were generally very low and many medicines were bought in incomplete dosages because of the cost (Geissler et al. 2000). These findings were then compared with a survey of adolescents in eastern Uganda (Geissler et al. 2001). Ugandan children, who generally had less direct control of money, were much more likely to involve an adult in decisions about their health care, and to depend on an adult for payment.

Similarly, in Ghana, 25 % of surveyed children/adolescents aged 8–18 reported their most recent visit to a health facility had not been accompanied by an adult (Hampshire et al. 2011). Fifty percentage of visits to a drugstore for over-the-counter medicines were unaccompanied by an adult, as were 30 % of hospital consultations. The unaccompanied rate increased with age: 13 % of 8–11-year-olds, 21 % of 12–14-year-olds, and 41 % of 15–18-year-olds had not been accompanied at their last visit. In many instances, adolescents used their own money for unaccompanied consultations. They obtained this money in a variety of ways: sometimes by working (manual laboring for boys and petty trading for girls) and sometimes by diverting money intended for school fees or meals. The young people confirmed that direct payments were a significant deterrent to accessing health care. Of the 922 young people (age 8–18 years) interviewed, 36 % said that high fees were a barrier and that fees were a greater obstacle than transport (see Table 19.3).

The extent to which adolescents are a priority for scarce family resources varies across the globe. Box 3 shows how different cultures prioritize paying for adolescents' health care differently compared to care for younger children.

In short, there is a great variety in the extent to which adolescents access health care independently, depending on their age, access to cash, gender, location, family structure, and culture.

Table 19.3 Difficulties reported by young people (8–18 years) in accessing health services, Ghana (n = 922)

Settlement type	Percentage reporting difficulty			
	Travel: too difficult	Travel: too expensive	Fees too high	Any difficulty
Urban (%)	4.0	5.3	27.8	34.8
Peri-urban (%)	7.4	12.0	35.3	56.8
Rural/services (%)	27.2	22.6	36.4	66.5
Remote rural (%)	34.7	32.9	45.1	72.2
All settlements (%)	16.8	17.0	36.5	56.6
p (chi-square)	$p < 0.0005$	$p < 0.0005$	$p < 0.0005$	$p < 0.0005$

Source Hampshire et al. (2011)

Box 3 Prioritizing Paying for Adolescents' Health Care Compared with Younger Children: Cultural Variations

We know that fees affect adolescents' access to health care. We also know that the nature of the influence varies from country to country. One relevant consideration is the prioritization of health care for adolescents compared with other family members.

In Burkina Faso, the main determinants of healthcare use and expenditure were severity of illness and the age of the sick person. Children under 10 years of age were less likely than older people to be taken to a modern health facility and also less likely to be taken to a traditional healer, even though their illnesses were perceived as significantly more severe than in older people. Children below 10 were treated within the household in 67 % of cases, whereas the figure for children over 10 years of age was 45 %. This is because health care is seen as an investment in maintaining household productivity and adolescents spent almost as many hours on household production as adults under 60 years of age. Health expenditure was concentrated on productive members of the family, including adolescents whether male or female. In the language of economics, demand for child health care in rural Burkina was very price-elastic, while demand for adult care (including adolescents) was relatively inelastic. Households in Burkina highly valued treatment for productive adolescents and were willing to pay considerable sums for health care. Levels of demand for health care for children were much more sensitive to price (Sauerborn et al. 1996).

Some 16 years later and in a very different country, Tomini et al. (2012) found the same phenomenon in Albania: The age of a child was positively correlated with the amount of out-of-pocket payment. Households spent more on older than younger children, probably because of the ability to generate an income.

However, the opposite has been found in other countries. In Vietnam, for example, older children (aged 6–15 years) used private health services significantly less than younger children (0–5 years) (Ha et al. 2002).

Both the Level of Payments and Adolescents' Access to Cash Affect Utilization

The level of payments and access to cash both influence adolescents' use of health services. This is illustrated in the following examples of services which are important to adolescents (see next section for a discussion of priority services).

A study of induced abortions among adolescent women in rural Maharashtra, India, found that cost was the most commonly mentioned factor that determined their choice of provider (Ganatra and Hirve 2002). While 29 % of adolescent women mentioned cost as a significant determinant, cost considerations were regarded as important by only 12 % of older women. This meant that adolescent women were more likely to use the services of untrained, cheaper providers. Older women had greater autonomy to make decisions within the household and greater access to cash; they were also more mobile. Adolescent women, whether married or not, had little control over household resources and hence in practice had less choice of provider. Similarly, cost was a significant reason for adolescents in Tanzania having abortions induced by an unskilled person because their fee was half the cost of an abortion in a district hospital or private clinic (Rasch and Silberschmidt 2008).

A review of 13 studies from sub-Saharan Africa concluded that "cost is consistently found to be a major barrier to uptake of [male] circumcision in traditionally non-circumcising communities" (Westercamp and Bailey 2007). The review was predominantly about circumcision of adolescents.

The authors concluded that in communities where male circumcision is the norm, families know in advance that they will be incurring costs (sometimes very high) at the time of a boy's circumcision and to a large degree view these costs as unavoidable. In communities which are traditionally non-circumcising, however, circumcision is regarded as an elective procedure which has to compete with other uses of family income.

This section has addressed the question, *how are adolescents affected by direct payments for health services?* Key findings are as follows:

- In many countries, particularly middle- and high-income ones, there are exemptions or reduced co-payments for children/adolescents.
- Direct payments do deter some adolescents from accessing services. Removing or reducing payments can increase utilization even in high-income countries. Exemptions from payments can be helpful, but are not just a matter of setting a policy; there needs to be careful monitoring that the policy is implemented. Healthcare vouchers given to adolescents are another way of improving access.
- There is great variety in the extent to which adolescents access health care independently, depending on their age, access to cash, gender, location, and culture. Similarly, there is great variety in the extent to which adolescents have access to cash and in how they are prioritized for scarce family resources.

Conditional Cash Transfer (CCT) Programs

Conditional cash transfer programs are a different way of tackling the fact that direct payments deter utilization of priority services. CCT programs provide money to households on condition that they comply with a set of behavioral requirements. These are typically about school attendance, preventive health, and nutritional interventions. A systematic review concluded that CCT programs can increase the use of health services and improve nutritional outcomes and preventive behaviors in situations where there is adequate health service provision (Lagarde et al. 2007). Available results tend to be about young children and mothers: It is not known how effective CCTs could be for adolescents.

What Services Tend to Be Included in Pooled Funding Arrangements (Tax-Funded or Insurance)? Do They Meet the Needs of All Adolescents?

For the third dimension of the health financing cube, the questions are "*What services tend to be included in pooled funding arrangements* (*tax-funded or insurance*)*? Do they meet the needs of all adolescents?*"

Public or private agencies spend pooled funds either to provide services directly or to purchase services for their beneficiaries. Large-scale purchasers are typically Ministries of Health, social security agencies, district health boards, and insurance organizations. Purchasing can be either passive (paying bills when they are presented or following predetermined budgets) or strategic (deliberately seeking priority services, better quality, and/or lower prices). Managed care institutions (such as health maintenance organizations, HMOs) are strategic purchasers because they integrate insurance coverage and health service delivery to facilitate access to the most appropriate, cost-effective care. This generally entails a focus on holistic primary care and on prevention, in order to improve health status and reduce costs (English et al. 1998).

Purchasers can pay for services in a variety of ways (Health Systems 20/20 2012). Mechanisms include:

- Central government budgeting.
- Capitation: A predetermined amount of funds allocated per year for each person enrolled with a given provider or resident in a catchment area.
- Usually there is a defined package of services covered in a capitation scheme.
- Case-based: a set payment depending on the condition (diagnosis) of the patient.
- Passive payment: generally paying for all items included in the provider's bill.

In some countries, development assistance is also an important source of financing. The same issues apply in this situation: Programs can be designed using any of the above payment mechanisms.

Table 19.4 lists priority health service interventions which are recommended for adolescents, covering the areas of nutrition, tobacco control, mental health, reproductive health, maternal care, violence, injury prevention, HIV, and vaccination. There is great variety in the services which are included in various risk-pooling prepayment schemes. For example, specialist mental health services for adolescents are funded through taxes and/or insurance premiums in some countries, whereas in other countries they may be nonexistent or available only on a full fee-for-service basis.

Table 19.4 identifies some of the main health financing considerations for services, which are important to adolescents. The table was constructed by asking: Is this service likely to be included in the service entitlement as part of a risk-pooling, prepayment scheme? In other words, is it likely to be funded from taxes and/or insurance premiums?

The first and second columns in Table 19.4 are the priority areas for adolescents. The third column is based on the authors' application of these economic questions to the priority services for adolescents. The table aims to identify the main considerations to think about in a particular context: It is not possible in a table such as this to identify all the issues, especially as these differ from one context to another. The table as a whole shows that some services which are particularly important for adolescents are generally mainstream to the health service as a whole (e.g., care during childbirth); some services can be culturally sensitive and may be regarded as undesirable in general, or specifically for adolescents (e.g., contraceptive provision); other services are very specific and are likely to be included only if they are recognized as important in a particular country (e.g., needle/syringe exchange programs, opiate substitute therapy).

Table 19.4 What services are likely to be included in the pooled funding arrangement (tax-funded or insurance)?

Health area	Intervention/package of services	Likelihood of being included in a pooled funding arrangement
Nutrition	Intermittent iron supplementation in preschool- and school-aged children and menstruating women in settings where anemia is highly prevalent	Most likely funding is from government if it regards this as a public health priority May be included in some insurance schemes, particularly if payments on a capitation basis
Tobacco control	Counseling about dangers of tobacco use, tobacco cessation advice, and prescriptions	Unlikely to happen systematically unless there is some incentive for the provider: This could be a specific payment (by government or capitation-based insurance) for providing this service
Mental health	Psychosocial treatment and support services	Pooling arrangements vary greatly in extent of mental health problems and interventions covered
Sexual and reproductive health (SRH)	Counseling about safe sex, sexually transmitted infection (STIs) and legal grounds for abortion	Governments differ in the extent to which they regard Reproductive Health (RH) as a public health priority (and hence the extent to which services are subsidized). In general, RH is very likely to be included in a pooled arrangement, but with a great variety in quality and in the scope of exactly what services is included Quantity and quality of counseling depend on how the provider is paid (see tobacco control) Contraceptive use by adolescents is very sensitive to insurance rules (and price): see USA example below the table
	Provision of contraceptives	
	HIV counseling and testing; ARVs and care for people living with HIV/AIDS	
	Screening and management for STI	
	Pregnancy detection services	
	Safe abortion services	
	Diagnosis and management of complications of unsafe abortions	

(continued)

Table 19.4 (continued)

Health area	Intervention/package of services	Likelihood of being included in a pooled funding arrangement
Maternal care	Basic antenatal care	Governments differ in the extent to which they regard maternal health as a public health priority (and hence the extent to which services are subsidized). Very likely to be included in a pooled arrangement, but with a great variety in quality and in the scope of exactly what services are included. Quantity and quality depend on how provider paid (especially antenatal and postnatal care)
	Care during childbirth	
	Postpartum and postnatal care	
	Prevention of mother to child transmission (PMTCT)	
Violence	Health education on gender-based violence (GBV); screening for management of signs/symptoms of domestic violence and sexual assault	Financing of screening only likely in very comprehensive schemes or in situations where gender-based violence is a particular concern Mass health education campaigns likely to be funded from government's public health budget (or in the case of GBV, another ministry (e.g., women's affairs) or NGO)
Injury care	Availability of essential trauma care (including in relation to attempted suicide)	Some trauma care likely to be included, but there will often also be some direct payment, either as a fee or insurance co-payment. Risk that a trauma could lead to catastrophic payments
HIV	Needle and syringe programs; opiate substitution therapy	Many cases will not be part of an individual entitlement program. More likely to be part of a government-funded public health program
	Voluntary medical male circumcision	Whether or not this service is provided out of pooled funds depends on local culture and epidemiology
Vaccine	3 doses of tetanus toxoid or Td (diphtheria containing)	Immunization often fully covered by pooling arrangement (because of cost-effectiveness and population effect) but variation about which immunizations are included
	Rubella-containing vaccine	
	HPV vaccine	

The *details* of exactly what services are provided for adolescents out of pooled funds are important. The following example shows how the scope of contraceptive provision can vary from scheme to scheme, and the affect this has on adolescents.

Contraception for Adolescents in the USA

In the US, contraception for adolescents is generally paid for in one of three ways: insurance (usually the parents', which may be employer-based or privately bought); a government-funded program such as Medicaid; or self-payment. Laws about insurance and contraception differ from state to state. In 28 states, insurers must fund all federally approved contraceptives. One state specifically excludes minors (under 18) from contraceptive coverage. Twenty states allow insurers to refuse coverage based on moral or religious beliefs. A survey of 50 employment-based schemes in 2004 revealed that 81 % covered oral contraceptives; 40 % covered the cost of an IUD device, 42 % paid for IUD insertion and 35 % for removal of the device.

Cost is a major barrier to contraceptive use by adolescents (and other age groups) in the USA (Eisenberg et al. 2013). The high up-front costs of contraceptive—especially long-acting reversible contraceptives (LARCs)—deter uptake by clients

with no insurance coverage. The total bill for a patient to start a LARC method is generally more than USD $1000. Provision of no-cost contraception through government-funded schemes and changes in insurance packages has significantly increased the uptake of contraception in general, and of the effective LARCs in particular. This in turn has reduced the teenage birth rate and rates of abortion and repeat abortion. Government-funded schemes are particularly important for adolescents —women under age 20 accounted for 25 % of their family planning clients.

Several of the priority interventions for adolescents listed in Table 19.4 are to do with "**health-compromising behaviors**" such as smoking, sexually risky behavior, and violence. A study comparing the USA and Switzerland argues that there are more opportunities for preventive interactions in primary care for older adolescents (16–20 years) in a system with universal insurance coverage (Haller et al. 2008). This is because a higher proportion of this age group comes into contact with the primary healthcare provider in the system with universal coverage. Building on the opportunity of primary care consultations to develop preventive health services is an important feature of adolescent health care.

In addition to the *types* of service likely to be financed as part of a pooled funding arrangement, another important issue is how the services are organized: Are they acceptable to adolescents? Pooled funding schemes tend to be large institutions, which adhere to national laws and norms about issues such as sexual behavior, drug-taking, and parental rights to information about their children. This can mean that services are not provided in a way that is acceptable to adolescents, for example, by showing strong disapproval of under-age or premarital sexual activity.

Inclusion in a parent's insurance scheme can also pose problems to adolescents, as the parent may receive paperwork about a consultation which the adolescent would prefer remained confidential. For example in the USA, even when adolescents are legally allowed to receive some services without parental consent, itemized bills sent to parents can invalidate any attempts to maintain confidentiality (Rainey et al. 2000).

This section has looked at the questions: *What services tend to be included in pooled funding arrangements (tax-funded or insurance)? Do they meet the needs of all adolescents?*

Key points are as follows:

- Adolescent health needs cover a broad range of types of service and the health financing situation differs for different services. In the crucial areas of reproductive health and maternal care, pooled arrangements generally fund some services, though there is a great variety in the scope of exactly what is included. Some other interventions of importance to adolescents are much more specific (e.g., tobacco counseling for all primary care clients) and may not be seen as a priority, especially if a scheme is new or not wealthy enough to fund a comprehensive package of interventions.
- The nature of the way in which a service is financed also affects the extent to which it meets adolescents' needs. For example, confidentiality is important to adolescents for much of their health care. Anything that requires others (often parents) to fund this care breaches that confidentiality.

This chapter now moves on to bring the various aspects of financial protection together to consider the quality of services available: *Are they appropriate for adolescents?*

Services Which Are Appropriate for Adolescents

WHO (2009) has developed a definition of adolescent-appropriate health services. This recognizes the particular needs of adolescents, especially (but not only) in relation to their reproductive health needs. Adolescents are less likely to use a service if it makes them feel unwelcome or embarrassed, or if they have

doubts that important issues which they regard as private will be kept confidential.

To be considered appropriate for adolescents, a service should have the five characteristics: equity, accessibility, acceptability, appropriateness, and effectiveness. Health financing is significant to all five characteristics. Services are *inequitable* and *inaccessible* if some adolescents cannot use them because they are not covered by a pooled funding scheme and direct payments are unaffordable. The availability of *appropriate* services depends on public or private agencies spending pooled funds on services that meet the needs of adolescents. This may not happen if, for example, adolescents are not a strong lobby group and they are not seen as a priority in a cash-strapped system, or if there is not a strong commitment to providing services related to potentially sensitive issues such as premarital sex or drug abuse. Services funded through insurance or taxation may not be *acceptable* if they do not offer privacy or confidentiality; private health care may offer more privacy and confidentiality, but can be expensive and/or unregulated. Cheaper forms of private care are more likely to be provided by untrained, non-competent practitioners, leading to concerns about *effectiveness.*

Table 19.5 shows the five characteristics with one aspect of each as an example. As in Table 19.4, there is then a column about the main health financing considerations. The final column gives one example: Several of these examples are described in more detail in the paper.

Table 19.5 Adolescent-appropriate health services and health financing

Adolescent-appropriate characteristics, with one example	Health financing issues	Example
Equitable Policies and procedures are in place that do not restrict the provision of health services on any terms (e.g., age, sex, social status, culture background, ethnic origin, disability)	All health financing mechanisms discriminate in some ways to ration health care, but systems vary in the make-up and size of restricted groups	In the Netherlands, great efforts have been made to remove financial barriers to access for children. Basic health insurance is compulsory and children under the age of 18 have their premiums paid by government. Even so, 35,000 children were uninsured in 2008, though this is a tiny percentage of the approximately 3.8 million under 18 (see Table 19.2.)
Accessible Policies and procedures are in place that ensure that health services are free or affordable to adolescents	Accessibility can be improved by reducing or removing payments for adolescents. Adolescent rates of enrollment in insurance can be increased, for example, by targeting educational facilities and by changing laws about the age when a young person can no longer be included in a parent's insurance cover	Removing cost-sharing in Norway for 12–16-year-olds resulted in their increased utilization of primary care (see Box 2) Vietnam Social Security successfully encouraged schools to enroll adolescents in the insurance scheme
Acceptable Policies and procedures are in place that guarantee client confidentiality. (relates to registration, consultation, record-keeping, and disclosure of information to others)	Services financed from pooled funds are likely to follow national laws about, for example, a parent's right to know about their child's health care	An advantage of the voucher scheme in Nicaragua was that the services were confidential and available as a walk-in, with no appointment required In the USA, itemized bills sent to parents can invalidate any attempts to maintain confidentiality

(continued)

Table 19.5 (continued)

Adolescent-appropriate characteristics, with one example	Health financing issues	Example
Appropriate The required package of health care is provided to fulfill the needs of all adolescents, either at the point of health service delivery or through referral linkages	Purchasers from pooled funds—whether Ministry of Health, social security agency, or insurance organization—may well not prioritize services for adolescents: This depends on the perceived importance of adolescents as a client group	Provision of family planning advice and contraception immediately after childbirth is advantageous for adolescents. Many US insurance schemes do not cover all forms of contraceptives, and even ones that do sometimes do not include contraception as part of a lump-sum payment for inpatient delivery. In this case, adolescents have to make a separate visit for their contraception after discharge from the maternity ward, which is often after they resume sexual activity. The opportunity to provide an effective intervention (immediate postpartum contraception) is thus missed because of the nature of the financing mechanism (Eisenberg et al. 2013)
Effective Healthcare providers have the required competencies to work with adolescents and to provide them with the required health services	Untrained providers are likely to be cheaper and hence may be more attractive to uninsured adolescents	Kenyan adolescents buy incomplete doses of drugs from local shops; Tanzanian and Indian adolescents pay untrained providers to induce abortions. These ineffective services are used because they are cheaper for the adolescents than better regulated care

Conclusions

We conclude with a summary of the findings around the three questions this chapter has explored.

Which adolescents are covered by a pooling arrangement (insurance or tax-funded system)?

Maximizing the number of people covered by a pooling arrangement (insurance-based or tax-financed) is an important step toward achieving UHC. The challenges are in many ways the same for adolescents as for the general population, though adolescents fall between two groups which receive a lot of attention and policy focus (young children and the working population).

- As for all age groups, adolescents in high-income countries are more likely to be part of a pooled arrangement than adolescents in middle- and low-income states.
- Where insurance cover depends on a combination of employment status and income, *some* adolescents are covered, mainly as part of a family plan belonging to a parent. This generally covers children up to age 18, though there is some variation in this age limitation. In the USA, it has been extended to age 26.
- It is possible to increase coverage among adolescents by targeting groups to which they belong. Many adolescents attend school: Working with schools to generate demand and facilitate enrollment can be one efficient way to increase coverage among adolescents.
- Some governments pay insurance premiums for children. This may be all children or for particular groups (e.g., children below the poverty line in the USA).
- Older adolescents (particularly 19-year-olds) seem particularly vulnerable to be uninsured,

for a variety of reasons. They are less likely to be students; they are likely to be in low-income jobs; many insurance schemes for children end at age 18.
- Other categories, which are less likely to be insured, are migrants (legal and illegal) and adolescents from families with particular religious beliefs/philosophies of life.
- Insurance schemes targeted at children or adolescents do not necessarily avoid the inequalities of the wider society (in terms of wealth, ethnicity, gender, and education). Even when adolescents are eligible for health insurance, in practice many may not actually be enrolled, because of the cost, lack of information about eligibility and benefits, the belief that adolescents have few healthcare needs, or burdensome enrollment procedures.

In short, adolescents are less likely to benefit from a pooling arrangement if they are from a low-income household and/or country, not in school, or aged 19.

How Are Adolescents Affected by Direct Payments for Health Services?

Reducing or completely removing fees and insurance co-payments is another step toward UHC. Many adolescents have very limited access to cash and may be reluctant or embarrassed to ask their parents and others for money for health care, which may be of a sensitive nature.

- In many countries, particularly middle- and high-income ones, there are exemptions or reduced co-payments for children and adolescents.
- Direct payments do deter many adolescents from accessing services; removing or reducing payments can increase utilization. Exemptions from payments can be helpful, but are not just a matter of setting a policy; facilities need to be visited to monitor that the policy is actually being implemented. Healthcare vouchers given to adolescents can be another way of improving their access.
- Many adolescents access services without a parent's knowledge. The extent to which they access health care independently depends on the reason for seeking care: age, access to cash, gender, location, and culture. There is great variety in the extent to which adolescents have access to cash and in how they are prioritized for scarce family resources.

What services tend to be included in pooled funding arrangements? Do they meet the needs of all adolescents? Even if an adolescent is entitled to access services financed with pooled funds, the right kind of services may not be available. Adolescence is a time of physical change and sexual awakening: Adolescents will use services less if they feel that health workers are judgmental or will not maintain confidentiality. This is particularly true for services which have a relatively high proportion of adolescent clients: sexual and reproductive health, mental health, counseling, trauma, and services for addiction.

The health needs of adolescents cover a broad range of services: The health financing situation differs for different services. Some services which are particularly important for adolescents are generally mainstream to the health service as a whole (e.g., care during childbirth); some services can be culturally sensitive and may be regarded as undesirable in general, or specifically for adolescents (e.g., contraceptive provision); other services are very specific and are likely to be included only if they are recognized as important in a particular country (e.g., needle/syringe programs). In the crucial areas of reproductive health and maternal care, pooled arrangements generally fund some services, though there is a great variety in the scope of exactly what is included. Some other interventions of importance to adolescents are much more specific (e.g., alcohol brief interventions, tobacco cessation counseling). These services, however, may not be seen as a priority, especially if an insurance scheme is new or not

wealthy enough to fund a comprehensive package of interventions.

The way in which a service is financed also affects the extent to which it meets adolescents' needs. For example, confidentiality is important to adolescents for much of their health care. Anything that requires others (often parents) to fund this care breaches that confidentiality.

To attract adolescents, a service should have the five characteristics: *equity, accessibility, acceptability, appropriateness,* and *effectiveness*. Health financing is significant to all five characteristics. Services are defined as *inequitable* and *inaccessible* if some adolescents cannot use them because they are not covered by a pooled funding scheme or direct payments are unaffordable. The availability of *appropriate* services depends on public or private agencies spending pooled funds on services that meet the needs of adolescents. This may not happen if, for example, adolescents do not have a strong political lobby to represent their needs; or if they are not seen as a priority in a cash-strapped system; if (as is commonly the case) there is little awareness or information available about adolescents' health needs; or if there is not a strong commitment to providing services related to potentially sensitive issues such as premarital sex, substance abuse, or mental health. Services funded through insurance or taxation may not be *acceptable* if they are not confidential; private health providers may offer more privacy and confidentiality but can be expensive and/or unregulated. Cheaper forms of private care are more likely to be provided by untrained, non-competent practitioners, leading to concerns about *effectiveness*.

While there is relatively little literature specifically about health financing for adolescents, we can conclude that the challenge (making universal health coverage a reality for the world's one billion plus adolescents) is in some ways the same as for other age groups: Society's poor and marginalized are the hardest to reach. Adolescents, however, with their limited access to cash and the need for confidential health care, bring their own special challenges which need to be accommodated by pooled funding healthcare schemes, whether they be insurance-based or tax-financed.

Adolescence is a time of physical change and sexual awakening. Adolescents need health services but can encounter a range of barriers to access, some of them simply because they are between the two categories of "child" and "working adult." Unmet health needs in adolescents can have an impact on the rest of their lives: Improving the financing arrangements for adolescents' health care is not just the bureaucratic exercise it may appear: it is about improving the lives of millions of people.

References

Ahmedov, M., Azimov, R., Alimova, V., & Rechel, B. (2007). Uzbekistan: Health system review. *Health Systems in Transition, 9*(3), 1–210.

Anell, A., Glenngard, A. H., & Merkur, S. M. (2012). Sweden: Health system review. *Health systems in transition, 14*(5), 1–159.

Blümel, M. (2013). The German health care system. In S. Thomson, R. Osborn, D. Squires & M. Jun (Eds.), *International profiles of health care systems* (pp. 57–65). New York: The Commonwealth Fund.

Bryndová, L., Pavloková, K., Roubal, T., Rokosová, M., & Gaskins, M. (2009). Czech Republic: Health system review. *Health systems in transition, 11*(1), 1–122.

Camenzind, P. (2013). The Swiss health care system. In S. Thomson, R. Osborn, D. Squires & M. Jun (Eds.), *International profiles of health care systems* (pp. 119–127). New York: The Commonwealth Fund.

Eisenberg, D., McNicholas, C., & Peipert, J. F. (2013). Cost as a barrier to Long-Acting Reversible Contraceptive (LARC) use in adolescents. *Journal of Adolescent Health, 52*(4), S59–S63.

English, J. D., Kapphahn, M. D., Perkins, J. D., Wibbelsman, M. D., & Charles, J. (1998). Meeting the health care needs of adolescents in managed care: A background paper. *Journal of Adolescent Health, 22* (4), 278–292.

Ganatra, B., & Hirve, S. (2002). Induced abortions among adolescent women in rural Maharashtra, India. *Reproductive Health Matters, 10*(19), 76–85.

Geissler, P. W., Meinert, L., Prince, R., Nokes, C., Aagaard-Hansen, J., Jitta, J., et al. (2001). Self-treatment by Kenyan and Ugandan school children and the need for school-based education. *Health Policy and Planning, 16*(4), 362–371.

Geissler, P. W., Nokes, K., Prince, R. J., Achieng'Odhiambo, R., Aagaard-Hansen, J., & Ouma, J. H. (2000). Children and medicines: Self-treatment of common

illnesses among Luo schoolchildren in western Kenya. *Social Science and Medicine, 50*(12), 1771–1783.

Ha, N. T. H., Berman, P., & Larsen, U. (2002). Household utilization and expenditure on private and public health services in Vietnam. *Health Policy and Planning, 17*(1), 61–70.

Hakobyan, T., Nazaretyan, M., Makarova, T., Aristakesyan, M., Margaryants, H., & Nolte, E. (2006). Armenia: Health system review. *Health Systems in Transition, 8*(6), 1–180.

Haller, D. M., Michaud, P. A., Suris, J. C., Jeannin, A., & Narring, F. (2008). Opportunities for prevention in primary care in a country with universal insurance coverage. *Journal of Adolescent Health, 43*(5), 517–519.

Hampshire, K. R., Porter, G., Owusu, S. A., Tanle, A., & Abane, A. (2011). Out of the reach of children? Young people's health-seeking practices and agency in Africa's newly-emerging therapeutic landscapes. *Social Science and Medicine, 73*(5), 702–710.

Health Systems 20/20. (2012). Chapter 7: Health financing module. In: *Health systems assessment approach: A how-to manual*. Version 2.0. Bethesda, MD: Abt Associates Inc. Accessed from http://www.healthsystems2020.org/content/resource/detail/528/

Hossein, Z., & Gerard, A. (2013). Trends in cost sharing among selected high income countries 2000–2010. *Health Policy, 112*(1), 35–44.

Johnsen, J. R. (2006). *Health Systems in Transition: Norway*. Geneva: World health Organization.

Joint Learning Network for Universal Health Coverage. (n.d.a). Philippines: PhilHealth. Retrieved from http://programs.jointlearningnetwork.org/content/philhealth

Joint Learning Network for Universal Health Coverage. (n.d.b). India: Rajiv Aarogyasri. Retrieved from http://programs.jointlearningnetwork.org/content/rajiv-aarogyasri

Kaiser Foundation (2013). *The Uninsured: A Primer*. California

Katsaga, A., Kulzhanov, M., Karanikolos, M., & Rechel, B. (2012). Kazakhstan: Health systems review. *Health Systems in Transition, 9*(7), 1–158.

Kenney, G. M., Lynch, V., Haley, J., Huntress, M., Resnick, D., & Coyer, C. (2011). *Gains for children: Increased participation in Medicaid and CHIP in 2009*. Washington, DC: Urban Institute.

Lagarde, M., Haines, A., & Palmer, N. (2007). Conditional cash transfers for improving uptake of health interventions in low-and middle-income countries: A systematic review. *JAMA, 298*(16), 1900–1910.

Lawrence, R. S., Gootman, J. A., & Sim, L. J. (Eds.). (2009). *Adolescent health services: Missing opportunities*. Washington, DC: National Academies Press.

Li, Y., Wu, Q., Xu, L., Legge, D., Hao, Y., Gao, L., et al. (2012). Factors affecting catastrophic health expenditure and impoverishment from medical expenses in China: Policy implications of universal health insurance. *Bulletin of the World Health Organization, 90*(9), 664–671.

Lindahl, A. K. (2013). The Norwegian health care system. In S. Thomson, R. Osborn, D. Squires & M. Jun (Eds.), *International profiles of health care systems* (pp. 103–111). New York: The Commonwealth Fund.

Majerol, M., Newkirk, V., & Garfield, R. (2015). *The uninsured: A primer. Key facts about health insurance and the uninsured in America.* Menlo Park, CA: Kaiser Commission on Medicaid and the Uninsured. Retrieved from http://kff.org/uninsured/report/the-uninsured-a-primer/

Meng, Q., Yuan, B., Jia, L., Wang, J., Yu, B., Gao, J., et al. (2011). Expanding health insurance coverage in vulnerable groups: A systematic review of options. *Health Policy and Planning, 26*(2), 93–104.

Meuwissen, L. E., Gorter, A. C., & Knottnerus, A. J. (2006a). Impact of accessible sexual and reproductive health care on poor and underserved adolescents in Managua, Nicaragua: A quasi-experimental intervention study. *Journal of Adolescent Health, 38*(1), 56–e1.

Meuwissen, L. E., Gorter, A. C., Segura, Z., Kester, A. D., & Knottnerus, J. A. (2006b). Uncovering and responding to needs for sexual and reproductive health care among poor urban female adolescents in Nicaragua. *Tropical Medicine and International Health, 11*(12), 1858–1867.

Nguyen, H., & Knowles, J. (2010). Demand for voluntary health insurance in developing countries: The case of Vietnam's school-age children and adolescent student health insurance program. *Social Science and Medicine, 71*(12), 2074–2082.

O'Connell, T. (2012). *National health insurance in Asia and Africa: Advancing equitable social health protection to achieve universal health coverage*. New York: UNICEF/The Rockefeller Foundation.

Rainey, D. Y., Brandon, D. P., & Krowchuk, D. P. (2000). Confidential billing accounts for adolescents in private practice. *Journal of Adolescent Health, 26*(6), 389–391.

Rasch, V., & Silberschmidt, M. (2008). In K. I. Klepp, A. J. Flisher, & S. F. Kaaya (Eds.), *Promoting adolescent sexual and reproductive health in East and Southern Africa* (pp. 117–134). Cape Town: HSRC Press.

Sauerborn, R., Berman, P., & Nougtara, A. (1996). Age bias, but no gender bias, in the intrahousehold resource allocation for health care in rural Burna Faso. *Health Transition Review*, 131–145.

Schäfer, W., Kroneman, M., Boerma, W., van den Berg, M., Westert, G., Devillé, W. et al. (2010). The Netherlands: Health system review. *Health Systems in Transition*, *12*(1).

Thomson, S., Osborn, R., Squires, D., & Jun, M. (Eds.). (2013). *International profiles of health care systems*. New York: The Commonwealth Fund. Retrieved from http://www.commonwealthfund.org/publications/fund-reports/ 2013/nov/international-profiles-of-health-care-systems

Tomini, S., Groot, W., & Pavlova, M. (2012). Informal payments and intra-household allocation of resources for health care in Albania. *BMC Health Services Research, 12*(1), 17.

Westercamp, N., & Bailey, R. C. (2007). Acceptability of male circumcision for prevention of HIV/AIDS in

Sub-Saharan Africa: A review. *AIDS and Behavior, 11* (3), 341–355.

WHO. (2009). *Quality assessment guidebook: A guide to assessing health services for adolescent clients*. Geneva: World Health Organization.

WHO. (2010). *Health systems financing: The path to universal coverage. World health report*. Geneva: World Health Organization.

Witter, S. (2010). *Mapping user fees for health care in high-mortality countries: Evidence from a recent survey*. London: HLSP Institute.

Yardim, M. S., Cilingiroglu, N., & Yardim, N. (2010). Catastrophic health expenditure and impoverishment in Turkey. *Health Policy, 94*(1), 26–33.

Yip, W., & Berman, P. (2001). Targeted health insurance in a low income country and its impact on access and equity in access: Egypt's school health insurance. *Health Economics, 10*(3), 207–220.

Zeratsion, H. T. (2013). *The effect of exemption from co-payment on adolescent utilisation of primary health care: The case of Norway*. University of Oslo: Master's Thesis.

Alice in Wonderland: Adolescents and Digital Technologies

20

Pierre-André Michaud and Caroline Free

> Around the developing world, digital technology, mobile communications and social media are connecting young people as never before – not only to one another, but to the world of information and ideas – and inspiring them to find innovative ways to improve their own lives.
>
> Anthony Lake, Executive Director (UNICEF 2012).

Introduction: Adolescents and Digital Technologies

There is no doubt that the information and communication technologies (ICTs) have had a considerable impact on the everyday life of young people—as well as for adults—and will continue to do so in the future. The purpose of this chapter is to review the various uses that young people make of ICTs, the potential positive and negative consequences of these uses, and how to address them. In a second part, the chapter will highlight how ICTs can be used within the health care of adolescents, as well as in the area of prevention and health promotion. Three general comments should be kept in mind while targeting ICTs.

P.-A. Michaud
Faculty of Biology and Medicine, Lausanne University, Lausanne, Switzerland
e-mail: Pierre-Andre.Michaud@chuv.ch

C. Free (✉)
London School of Hygiene & Tropical Medicine, London, UK
e-mail: Caroline.Free@lshtm.ac.uk

First, as stated above by the executive director of the United Nations Children's Fund (UNICEF), digital technologies has a profound effect on the lives of young people in low- and middle-income countries (LMIC). For instance, according to a recent report from UNICEF (2012), one out of two 15–24-year-old boys and a third of 15–24-year-old girls in Palestine used the Internet in the previous 12 months. Two-thirds of Brazilians of the same age had also used the Internet in the previous 12 months. Even though the rates of Internet use are much higher in industrialized counties, wireless technology will narrow the technological gap that has long existing between low- and high-income countries. It is indeed much easier, cheaper, and more effective to install Internet antennas than a big network of old-style wires. Likewise, more and more adolescents from LMIC have thus access to social media, worldwide news, and information, which will greatly affect their education system, as well as make "The Global Village" a reality (McLuhan and Powers 1989).

Second, the pace of the technological progress and transformation becomes faster and faster, and it is extremely difficult to predict where the technology will be in just a few years. Young people tend to quickly adopt the latest version of various media. The designers of Internet programs and tools have an immediate impact on the use of Internet by young people. This rapid development can be observed in the fluctuation of stocks values of online social networking service such as Facebook, WhatsApp, Twitter,

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_20

and Instagram. Thus, parts of this chapter may/will be outdated in a few years.

Third, adults, the so-called digital migrants, tend often to exaggerate the risks linked with the use of ICTs by adolescents, denying the numerous positive aspects of Internet which will also be described in this chapter. Professionals who work with adolescents, teachers, educators, social workers, lawyers, health professionals, and even parents should have a balanced view of what the profits and pitfalls of ICTs are in counseling the younger generation. In other words, it is both naïve and impossible to dream of a world without Internet, and the older generation should strive to follow-up the evolution of such technologies to be able to assist the younger in using them optimally.

Subsequently, ICTs constitute a good illustration of what has been rightly envisioned by Margaret Mead as a post-transitional society. That is, a society in which part of the knowledge is not only transmitted by older to younger individuals, but in which the more adaptable and flexible younger generation can teach the older generation. This provides a unique opportunity to give the new generation a venue for participating in the shaping of the future of the information society (Prensky 2004).

The Use of Internet Around the World

Outside industrialized countries, we have little valid data on the use of Internet and similar tools by the population. A recent document, however, issues by the International Telecommunication Union (ITU), especially Chap. 4, shed some light on the use if ICTs by young people worldwide. It should be noted that the numbers date back to 2010 or 2012 and may have changed since then. Nevertheless, in 2013, there were 6.8 billion mobile phone subscriptions, which is almost as many subscriptions as there are people in the world (7.1 billion) (International Telecommunication Union 2013). In many high-income countries, the number of mobile phone subscriptions outstrips the population. Worldwide, the number of mobile phone subscriptions is 89 per 100 inhabitants. Access to the Web is lower than mobile phone ownership with just under 40 % of people having access to the Internet worldwide. People between the ages of 16–24, however, are almost twice as likely as other age groups to access the Web (International Telecommunication Union).

Based on the percentage of the world population, which uses ICTs, as a group the saturation among adolescents is extremely high. In one study, The Pew Internet Project's research on teens found that 94 % of adolescents 13–17 years old in the USA go online daily or more often (Lenhart 2015). There is not alas, good data for younger using ICTs, but it can be assumed that the Internet saturation is fairly similar among 10–12-year-old individuals.

There are different definitions of "digital natives." Prensky (2004), however, provided the following definition, "the generation of young people who are all native speakers of the digital language of computers, video games, and the Internet." In other words, they are the first generation to have grown up with this new technology, having lived their entire lives surrounded by and using tools and toys of the digital age. This means that, among those who currently use new technologies, only a minority can be considered to have lived with them during infancy and childhood; it follows that less than a third of the world's young people today are real digital natives.

The absolute number of digital natives can be found in large countries such as India and China, although the proportion within the population is not that high. The countries with the highest proportion of digital natives, according to the ITU report, are by order of rate: Iceland, New Zealand, Korea, Malaysia, Lithuania, and the USA with rates between 13 and 14 % of the total population. Not surprisingly, African countries such as Congo, Niger, Eritrea, or Central African Republic exhibit among the lowest percentages (0.2 and 0.3 %) (International Telecommunication Union 2013). Obviously, the proportion of digital natives is closely related to the socioeconomic level of a given country, even if there are

some variations within rich countries. One strong factor which influences the proportion of digital natives is the access to Internet, which is virtually ubiquitous in rich country but restricted to urban areas in others. The same applies to accessing tools such as computers, mobile phones, and video games. The ratio of young people using Internet compared to the overall users also depends on the proportion of young people in a given country (Prensky 2004). Indeed, in countries with high rates of individuals below 24 years of age, usually low-income countries such as Egypt, the proportion of digital natives among Internet users is higher.

Finally, education is an important correlate with Internet use. The more the enrollments in the school system, the more the digital natives will be. It can be easily understood that, as one can refer to health literacy for people who gain expertise in how to deal with health problems and disorders, "Internet literacy" (Livingstone et al. 2005). It is also a kind of expertise that can be promoted within the school environment. According to the ITU report, while primary school enrollment is a critical factor for increasing a country's rates of digital natives, it is ultimately by enhancing the level of secondary and tertiary school enrollment that one improves the degree of digital nativism.

ICTs, the Adolescent Brain, and Cognitive Development

The extent to which the exposure to Internet and ICTs impacts the development of young people is still opened to debate. The media often refers to the younger generation as a "y" generation, which masters multitasking but lacks an adequate attention span. The reality is that we probably still lack good evidence for this assumption. In a fairly recent paper, Giedd (2012) reviewed the recent neurobiological aspects of the adolescent development, and Giedd stressed the fact that the brain, during this period of life, is still highly adaptable and retains full capacities for plasticity. According to Giedd, the greatest benefit of the digital revolution lays not so much in a direct effect of Internet use on the adolescent brain, but rather to a higher and quicker access to information. He emphasizes, however, the fact that many youngsters nowadays lack the capacity to critically analyze the quality of the available content of the Internet. He also stresses the fact that multitasking has a "cost," which means that in performing two tasks at the same time (working for the school and chatting with friends) diminishes the memory retention. The extent to which, with proper training, young people may master the capacity to switch from one task to another is still not known.

According to Mills (2014), it is still not known whether Internet use creates a generation with fundamentally different cognitive skills. Indeed, some recent work suggests that the use of Internet-linked social networks have a limited effect on situations that require analytical reasoning (Rahwan et al. 2014). In other words, "being part of highly connected networks can help individuals solve problems by facilitating the propagation of correct information", but that these networks do not propagate the cognitive strategies needed to obtain correct information on one's own (Rahwan et al. 2014).

ICTs: A Resource for the Development of Adolescents

As mentioned before, Internet and ICTs constitute a tremendous resource for young people and has a potential to improve their literacy, their capacity to integrate social networks, and their capacity to develop a vision of their future in our changing world. It is indeed striking how the medical literature tends to focus on the risks linked with Internet use and tends to ignore its positive aspects (Bailin et al. 2014).

Many younger adolescents and children have access to Internet games, which are enjoyable and stimulate thinking and concentration. Nitendo® and other similar resources provide many programs that invite younger adolescents to explore new worlds, construct hospitals, cities, and so on; and thus, encourage them to develop interest in various topics and subject matter. In a

book dedicated to the use of Internet by children and adolescents, Tisseron and associates (2012) stress the positive aspects of games which enhance curiosity and thinking on various visions of the world. Even online games, whose use is potentially addictive, may at the same time improve the capacity to interact with other players in a constructive way and create a teamwork atmosphere that has the potential to impact on how youngsters interact positively in the real life. Although attention deficit hyperactivity disorder (ADHD) may represent a risk factor for Internet addiction, the use of computer games can also potentially improve some of the symptoms or attention problems which these patients face in their everyday life (Wentz et al. 2012).

Internet also constitutes an outstanding resource in terms of information and immediate access to any information through search engines such as Google® or dictionaries such as Wikipedia®, as well as video portal such as YouTube® allowing young people to improve their knowledge in a quick and effective way, provided, of course, that they are well supported in how to differentiate valid and less valid resources (which indeed, represent a real challenge for educators and teachers). In a recent Swiss poll, more than 40 % of adolescents used the Internet to search for information on a daily basis (Willemse et al. 2014).

The use of Internet in schools and universities clearly constitute a challenge for the future, as it may well be that textbooks, dictionaries, and other similar tools will become outdated at least in some areas. Internet-based e-learning tools such as the massive open online courses (MOOCs) are but an example of such recent developments. It is beyond the scope of this chapter to review the advantages of e-learning tools, but they clearly represent part of the future of education and may, to some extent, improve the health literacy of young people living in remote areas of their country with limited means of transportation.

The use of Internet exchanges and networking is another important evolution in ICTs. The emergence and widespread use of tablets and cell phones has created a new environment for the social life of young people. In a recent comprehensive review, Hamm et al. (2014) recognize that it is still difficult to disentangle the positive and potentially harmful effect of media networking. Adults, however, have to keep in mind that whatever they think of these devices, young people will use them more and more. In the already-cited Swiss poll (Willemse et al. 2014), nearly 100 % of the 12–19-year-old participants (N = 1086) had access to a cell phone and a computer. Virtually all of them used their devices daily, to access to Internet, hear music, or call their friends. The average time spent on the Internet was around 2 h a day (3 h a day during the weekend). Three quarters of those adolescents used social media tools to communicate with their peers on a daily basis. Interestingly, younger adolescents (12–14 years old) used social media even more than their older counterparts, with no difference between girls and boys.

Contrary to a wide spread belief, young people who use the Internet to connect with their friends also tend to have more real-life contacts with them. In other words, the risk of isolation for adolescents who chat a lot with their peers online is low (Belanger et al. 2011; Michaud and Belanger 2010). It has also been suggested that participation in exchanges on the Internet, such as blogs, and forums improves one's capacity to develop his or her identity (Boyd 2007). Also, for many youngsters, posting videos and selfies on the Web via YouTube®, Instagram® and Facebook® can be a very rewarding activity in which they demonstrate their creativity, their sensibility, and their sense of humor, improving at the same time their self-confidence.

The use of Internet to access to health information is not new (Michaud and Colom 2003) and represents probably a very effective way to improve health literacy; some of these sites are very much used, such as the "Go Ask Alice" site, managed by collaborators of Columbia University, USA (http://www.goaskalice.columbia.edu/), the French site "Globule" (http://globules.com/2013/) the Swiss site "Ciao" (www.ciao.ch), or the Web site "NetDoctor" in the UK (http://www.netdoctor.co.uk/teenagehealth/).

In summary, as stated by O'Keeffe and colleagues (2011), there are several positive aspects of Internet use, by young people, which should be kept in mind:

- Enhancement of individual and collective creativity;
- Growth of ideas from the creation of blogs, podcasts, videos, and gaming sites;
- Expansion of one's online connections through shared interests to include others from more diverse backgrounds;
- Fostering of one's individual identity and unique social skills.

ICTs: A Risk for the Heath and Development of Adolescents

As stated earlier, the number of publications pertaining to the risks linked with Internet use is impressive (O'Keeffe et al. 2011). They pertain mainly to somatic burden, mental health problems, unplanned and harmful sexual experiences, and exposure to violence and racism, including online solicitation.

The potential negative effects of Internet overuse on physical health, such as sleep problems and back pain, which have been described in several publications (Belanger et al. 2011; Hakala et al. 2006; Suris et al. 2014). The most controversial consequence of excessive use of ICTs is the one of overweight and obesity: indeed, some food companies reach young people to increase their consumptions of food high in energy ("junk food") through Facebook pages (Freeman et al. 2014). Several studies suggest a relation between time spent on the Internet and BMI (Lajunen et al. 2007; Yen et al. 2010), but it may also well be that obese adolescents, because of their weight, tend to use Internet more than nonobese youngsters because physical exercise for them is more difficult.

One potentially detrimental effect of ICTs is on mental health. There are evidences of a link between Internet overuse and depression (Belanger et al. 2011; Jelenchick et al. 2013). Even so, a firm causal link is still difficult to establish. It is not unusual for depressed adolescents with low self-esteem turning to online activities as a way to escape their distress. Interestingly, it has been suggested that adolescents who have no or very few Internet activities may as well be depressed in a higher proportion than those engaging in "usual" Internet exchanges. In some instances, the access to a special Web site may increase mental health problems, in providing young people with suggestions as how to self-harm and commit suicide. Seemingly, other Web sites offer advices to adolescent suffering from anorexia on how to lose weight.

The most damaging aspect of the use of social media, however, is the one of deliberate postages via Internet blogs and social networking Web sites of messages, images, and videos aiming at harming or harassing other people. Cyberbullying has been the subject of numerous publications over the last decennia (Moreno 2014; Moreno et al. 2011; Sticca and Perren 2013). In high-income countries, where data are available, cyberbullying affects between 20 and 40 % of adolescents. It has severe short-term and long-term impacts on the development and mental health of victims. It is suggested that many individuals who are bullied via Internet are also bullied during their day-to-day life. Cyberbullying is another approach to the spread of mockeries and disrespectful messages that can have a major impact within a small real-life school community (Sticca and Perren 2013). School professionals as well as parents should be alerted as how to react to such situations and adolescents should be warned about the negative consequences of such behavior, as they tend to underestimate the impact of what often is looked at as jokes or comic pictures and videos (Borowsky et al. 2013; Gini and Pozzoli 2009; Hong et al. 2014; Kowalski and Limber 2013).

Still another negative consequence of ICTs overuse is the risk of developing a dependence on computers and computer games, a situation often referred to as "Internet addiction" (Lam 2014; Van Rooij et al. 2010). According to the American Society of Addiction Medicine, addiction is "characterized by inability to consistently abstain, impairment in behavioral control, craving, and diminished recognition of

significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response." Although a fair amount of older adolescents and young adults may use ICTs in a way which impairs their social life and education, not all of them are really addicted in the real meaning of the word: In particular, during early and middle adolescence, individuals can engage in such behavior over a limited period of time and then suddenly change their mind and quit. Also, in many instances, as far as adolescents are concerned, Internet addiction is more a symptom of a dysfunctional family or of personal psychological problems than a disease in itself. The frequent involvement in the "massively multiplayer online role-playing games" (MMORPGs) clearly constitutes a risk factor for addiction, as the success accomplished during such games is often proportional to the time spent, and also because the team-based approach of such sessions requires some loyalty to partners.

In the area of sexual life, three issues deserve comment: online pornography, sexting, and grooming. Pornography can be defined as the representation in any media (books, magazines, photographs, films, etc.) of scenes of erotic sexual behavior designed to arouse sexual interest. It goes from Top Shelf images to depiction of sexual intercourse and even images of violent behavior and abuse. Pornography has for a long time attracted the interest of a fairly large proportion of adolescents—especially boys—at some stage of their psychosexual development, and for most of them this does not pose a psychological challenge (Livingstone et al. 2005; Luder et al. 2011). Indeed, according to the recent Swiss poll already cited (Willemse et al. 2014), two out of five 12–19-year-old adolescents have received and visualized pornographic images or videos, a percentage similar to the one cited by other similar surveys (Bailin et al. 2014; Van Ouytsel et al. 2014). As expected, the rate is higher among boys than among girls, and for some of them, the exposure to pornographic images was not voluntary. There are, however, studies, which suggest that adolescents who explicitly search for pornographic content may be at higher risk of deviant sexual behavior such as sexting or unprotected intercourse (Doornwaard et al. 2014; Van Ouytsel et al. 2014).

Sexting is defined as the postage of sexually explicit messages (mainly images and videos) through mobile phones. It includes a large range of situations, from adolescents' own account of sexual experiences, the exchange of messages between partners, the postage of particular sexual expectations, or the installation on the net of images and videos without the consent of the exposed individual or even with the explicit aim to psychologically harm the person. Sexting involves probably no less than 10 % of adolescents (Livingstone et al. 2005; Mitchell et al. 2012; Willemse et al. 2014). The psychological consequences of sexting for those who are unwillingly involved can be devastating and are actually similar to those of adolescent being bullied. It is, however, difficult to control such situations, which frequently the young authors of such postage do not necessarily foresee its consequences, as they ignore the extent to which such content circulates quickly and widely on the net.

Grooming is defined as befriending and establishing an emotional connection with a child, and sometimes the family, to lower the child's inhibitions for child sexual abuse. As far as Internet use is concerned, grooming is a process in which so-called cyberpredators, usually adults (frequently using fake identities and pretending to be younger), identify vulnerable adolescents through Internet. They manipulate their victims into various sexually explicit acts (denuding, masturbation, etc.) or ask to meet clandestinely (Pujazon-Zazik et al. 2012; Smith et al. 2014; Wolak and Finkelhor 2013). In the Swiss poll, 25 % of girls and 11 % of boys reported that they had been contacted online by a person who asked for sexual undesirable gestures or dating. The victims who often naively accept such invitation find themselves sexually abused or raped. Risk factors for such situations include low self-esteem and need for affection, lack of parental control, and sexual disinhibition (Webster et al. 2012). Parents and adults caring for young people need to recognize that these online

behaviors, pornography, sexting, online dating, and grooming are intertwined and can result in calamity.

Education, Prevention, and Policies: What Can Be Done?

During early adolescence, parents should be advised to monitor their child's use of Internet, with some flexible rules such as when and for how much time he/she could use any screen or device. The French Society of Pediatrics has adopted and widely disseminated Tisseron's 3-6-9-12 rule (http://www.sergetisseron.com/3-6-9-12/) to provide parents with some simple advice and rough guidelines for child and adolescent use of ICTs. A child psychiatrist, Serge Tisseron, suggests children under the age of three do not benefit from frequent exposure to ICTs. Video games should not be introduced to children less than six years of age. At that age, there is a risk that video games can absorb too much of the child's attention to the detriment of other activities. Children under nine years of age should not use the Internet unsupervised. Adolescent Internet use should be supervised until they are 12 years old. Even then parents should use parental controls available on the computer, search engines, Web sites, and on other ICT platforms.

Indeed, for parents, it makes sense to actually learn from their children about the many and quickly evolving tools available in the world of Internet. If they feel that the way their child is using the Web is problematic, they should not hesitate to ask for an evaluation by a trained physician or psychologist. Several companies offer filter devices which are supposed to limit the access of young people to violent or sexual Web-based content. Even if they are relatively effective, they constitute by no means real protection, as young people have access to such sites in other setting than in their home, and some of them are skilled enough to bypass such tools. It is thus rather more effective for parents to get interested and involved in how their younger adolescents use the Internet and to gradually allow them more freedom of access as the adolescent demonstrates their Internet competency.

Given these phenomena, primary care professionals have a role to play. There are no single accepted methods to evaluate Internet use by adolescents (Greydanus and Greydanus 2012). An assessment should take into account the developmental stage of the child or adolescent, as well as the social context in which the child and adolescent use ICTs.

Indeed, the amount of time spent on the Internet is certainly not the only criteria to evaluate the use of the Web by adolescents. Rather, one should focus on the profile of utilization, as well as the motivation of young people while spending time on their mobile phone or computer. Tisseron et al. (2012) propose an approach, which is mainly based on the relationship established by the adolescent with ICTs. He distinguishes several motives that may increasingly put the young person at risk (e.g., addiction, bullying, or grooming):

- The ones who have pleasure in experimenting with new tools, explore the world through forums and Google Search.
- The ones who search for social exchanges and who are as well involved in real-life peer events.
- The ones who play to win and to satisfy their need for strong sensation ("sensation-seeking").

While the first two profiles do not put children and adolescent Internet users at risk, the third one is obviously linked with a higher risk to become involved in overuse. The lack of social connection, an underlying psychopathology, and the absence of parental control are further risk factors, which the health professional should take into account in investigating the lifestyles of the young patient. The assessment of the use of ICTs should systematically be included in the assessment of adolescents' health needs and lifestyles, while at the same time respecting the adolescent need for privacy and confidentiality.

We have very limited evidence of what type of preventive initiative work on a larger scale, especially in the school setting (Worthen 2007).

The experience suggests that young people should be formally educated on how to use the Internet and how to avoid risky situations from an early age. Undeniably, the use of ICTs is now part of the life of most young people, and they should be educated like they are in other areas such as orthography and mathematics.

E-Health and M-Health for Adolescents and Young People

E-health is a relatively recent term in healthcare practice supported by information and communication technology (ICT), while M-health refers to the use of mobile ICTs in health care and public health. Increasingly E- and M-health overlap; for example, Web-based applications are available on smartphones, as well as on desktop computers and laptops.

It has been suggested that E- and M-health have huge potential to improve health through increased access to health-related information, improved ability to monitor diseases, timely and more actionable public health information, improved access to health care, and expanded access to education and training for healthcare workers. Among adolescents and young people, interventions have been used to provide information and support healthy behaviors regarding alcohol and drugs use, and sexual behavior. It has successfully been used to support self-management of diseases such as asthma or diabetes by patients in the community (Free et al. 2013).

The features of E- and M-health interventions that may particularly appeal to young people include the ability to receive interventions confidentially and with anonymity, 24-h availability of information and support, and ease of access. Interventions can be personalized according to user characteristics or needs, and it can be interactive (with content pushed to users or pulled by users according to what is most relevant to them). Many E- and M-health interventions have aimed to raise awareness of health issues and thus only provided health-related information. There is the potential, however, for interventions to be designed to support healthy behavior by including a range of behavior change techniques (Free et al. 2011). Mobile phone-based delivery allows participants to reflect on content and share messages with others (L'Engle 2015). In qualitative interviews with recipients of SafeTxt (a UK safer sex intervention delivered by text message to young people at high risk of STI) recipients reported that they valued the ability to re-read messages, assimilate content at their own pace, and reflect on content in their own time. They also reported being able to easily share messages with friends and younger siblings when they wished to do so, thus enhancing the educational reach of the intervention. Importantly, sharing messages with a partner enabled some women to negotiate condom use (French et al. 2014).

Rapidly evolving technologies and fluctuations in the use of specific functions or services such as Facebook pose a potential challenge for those designing adolescent health programs, but there is relative stability in the potential formats for communication. These include short written messages (SMS), audio, video, graphics, and animation.

The relative stability of different formats for communication has important implications for intervention design. While specific delivery systems or platforms such as Facebook may become outdated relatively quickly, intervention content, which has been found to be effective, can be delivered via the most popular current technology. For instance, young people continue to communicate with each other using SMS, which flash upon their phones and can be viewed instantly. Since the 1980s, the technology behind the delivery of SMS has evolved from text messaging and now includes instant messaging or private or public social media messaging. As adolescents use messages delivered by different technologies in a similar way, an intervention delivered by text messaging and SMS that was shown to be effective, would be easily adapted for delivery by instant message, or whatever technology delivering SMS evolves into in the future.

Where high reach is achieved by effective interventions delivered by (mobile) ICT, there is

the potential for important health benefits for adolescents. A number of existing E- and M-health interventions for adolescents have shown considerable success. M4RH (mobile for reproductive health) was developed to raise awareness of reproductive health issues (contraception and sexual health) (L'Engle 2015). It aimed to provide accurate information addressing misconceptions about contraception and pregnancy. The intervention has been made available in Tanzania, Kenya, and Rwanda with some programs specifically adapted for adolescents. By 2012, over 70,000 people had accessed the program. Evaluation of the program demonstrated that the intervention increased correct knowledge regarding contraception (L'Engle 2015). In India a "safety cricket" game available on mobile phones, reached 10.3 million game sessions in 15 months. The "safety cricket" game targets sexual attitudes and behaviors by drawing analogies between the game of cricket and real life. They use analogies such as no helmet/no cricket, and no condoms/no sex; a risky shot in cricket can bowl you out, while risky sex can bowl you out in real life. An evaluation of this type messaging suggested there were improvements in knowledge and behavior (Quraishi and Quraishi 2013). In the USA, Youth Tech and Health (YTH) (http://yth.org/) have developed two M-health projects that use text messages to target alcohol use and sexual health. They also developed a smartphone app called "circle of 6" aimed at reducing gender-based violence among young people. The intervention prompts adolescents to preprogram their phones with the phone numbers of six people they could rely on in an uncomfortable situation; or before the situation escalates to sexual assault of gender-based violence. The intervention also provides access to telephone help lines at the touch of a button. The app has been downloaded 80,000 times (www.circleof6app.com).

There is also considerable Internet- and social media-based health promotion activity, little of which is documented in the scientific literature. Internet-based support groups for young people with specific diseases have been popular, including those for young diabetics and those with cystic fibrosis. Internet-based support groups for young people with specific diseases can result in moderating an adolescent's behavior and accepting input from trained individuals. This type of intervention has the potential for impacting unhealthy behaviors and changing it to be normative within groups. There is, for example, the potential for unhealthy eating habits to become normative in a group of anorexics resulting in negative effects on health. There is also considerable health promotion activity on social media for adolescents. Gold and colleagues (2011) conducted a systematic examination of sexual health promotion on two social networking sites (Facebook and Myspace) and Twitter. They identified 179 sexual health promotion activities and groups. The majority was instigated by not-for-profit organizations and targeted young people with and provided sexual health information. The health promotion activities and information was not evaluated.

Evidence from randomized controlled trials regarding interventions to date suggests interventions can result in modest increases in knowledge and small benefits in behavior. Systematic reviews of randomized controlled trials show that E-health interventions targeting sexual health can increase knowledge (pooled SMD 0.72, 95 % CI 0.27 to 1.18), and an increase in safer sexual behaviors (pooled OR 1.75, 95 % CI 1.18–2.59) (Bailey et al. 2010). M-health interventions targeting sexual health have increase STI testing in some trials (Lim et al. 2012). Interventions targeting diabetes self-management in young people have had modest benefits on some self-management processes, but have not as yet demonstrated clinically important benefits in objective measures of diabetes control (Franklin et al. 2006). Trials are required to evaluate the effects of providing support for asthma self-management on clinical outcomes in 16–24-year-olds (Mosnaim et al. 2008). In other areas such as smoking cessation, M-health smoking cessation interventions delivered via text message are effective (10.7 % txt2stop smoking cessation support versus 4.9 % control, relative risk [RR] 2.20, 95 % CI 1.80–2.68; $p < 0.0001$), but few participants have been aged

16–24. As yet few M-health interventions targeting alcohol reduction in adolescents have been evaluated by randomized controlled trial (Wetzel et al. 2007).

Health and health behavioral benefits from interventions to date may be small due to limitations in the design of interventions. Existing interventions have often been developed without any evidence (Eldredge et al. 2011). Many interventions, which aim to influence behavior, have not been developed using a systematic approach. The framers of these interventions have not taken into account either existing evidence regarding the factors influencing behavior or behavior change theory; thus, many interventions incorporate few behavioral change techniques (Abraham and Michie 2008; Eldredge et al. 2011).

For example, the effective txt2stop and STOMP (both are smoking cessation applications) employed 18 different behavioral change techniques. Nonetheless, in a systematic review of interventions delivered by mobile ICTs designed to support behavioral change, the median number of behavior change techniques employed in behavior change interventions was six (Free et al. 2013).

Young people play a key role in developing interventions that are acceptable and relevant to them. This is essential for engaging adolescents with interventions and a prerequisite for achieving high levels of utilization and benefits in knowledge, positive health behaviors, and better health. The development of a sexual health intervention in the UK illustrates the important role that young people have in generating content of interventions. Intervention messages were written and adapted based on young peoples' preferences expressed in focus groups. Young people had clear views about the circumstances in which they would and would not want to receive messages regarding sexual health, the type of content they would be happy to receive by text message, and the number and timing of messages wanted. These types of messages approved by participants have a nonjudgmental and credible tone. They tend to be short messages written in a positive style and provide practical information regarding what needed to be done, why it needs to be done and how to do it. Young people wanted messages that were easy to understand, avoided slang, and avoided exclamation marks (which were experienced as patronizing). They wanted no more than four messages a day and wanted the message frequency to decline after the first two weeks. While effective face-to-face interventions have included content on gender roles, sexual pleasure, and relationships, these topics were considered too personal and too intrusive when delivered via short messages. They were removed from the intervention (Free et al. 2014; Shain et al. 2004). In a qualitative study with young people, the recipients of the intervention reported that the tone, language, content, and frequency of messages were appropriate. Messages reportedly increased knowledge and confidence in how to use condoms and reduced stigma, hence, the knowledge enabling them to tell a partner about STIs. Sharing messages with their partner enabled participants to negotiate condom use (French et al. 2014).

Ultimately, however, mobile ICT interventions will be limited. The effect of interventions on health outcomes or health behaviors was due to limitations in the capacity of (mobile) ICTs to address important determinants of health behavior and health outcomes. ICTs have increased access to information, but while knowledge may be necessary, it is often insufficient to alter behavior. Nevertheless, the correlations between knowledge and behavior are weak because a wide range of factors influences health behavior. These factors include knowledge, attitudes, behavioral skills, and cognitive skills such as planning behaviors, social influences, and environmental factors.

Conclusion

Interventions delivered by ICTs, which have been shown to be effective, have addressed knowledge, some skills, attitudes, and some aspects of social influences. These interventions provide examples of positive health behavior outcomes, and examples of how other

adolescents have achieved these behavioral goals (Free et al. 2011). Conversely, it is beyond the scope of such interventions to address important environmental influences on behavior (such as building environments that promote physical activity). Such interventions do not have the capacity to address important determinants of health outcomes relating to service provision and the availability of resources such as medicines.

In sum, because of its wide reach and low cost, mobile ICT interventions intended to improve adolescent health potentially have an important role in promoting adolescent health. Such interventions need to be a part of the broader health improvement strategies and programs if we are to achieve a major positive impact on adolescent health.

References

Abraham, C., & Michie, S. (2008). A taxonomy of behavior change techniques used in interventions. *Health Psychology, 27*(3), 379–387. doi:2008-08834-010 [pii] 10.1037/0278-6133.27.3.379

Bailey, J. V., Murray, E., Rait, G., Mercer, C. H., Morris, R. W., Peacock, R., … & Nazareth, I. (2010). Interactive computer based interventions for sexual health promotion. *Cochrane Database System Review, 9*.

Bailin, A., Milanaik, R., & Adesman, A. (2014). Health implications of new age technologies for adolescents: A review of the research. *Current Opinion Pediatrics, 26*(5), 605–619. doi:10.1097/MOP.0000000000000140

Borowsky, I. W., Taliaferro, L. A., & McMorris, B. J. (2013). Suicidal thinking and behavior among youth involved in verbal and social bullying: Risk and protective factors. *Journal of Adolescent Health, 53*(1), S4–S12. doi:10.1016/j.jadohealth.2012.10.280

Boyd, D. (2007). Why youth (heart) social network sites: The role of networked publics in teenage social life. *MacArthur foundation series on digital learning–Youth, identity, and digital media volume*, 119–142.

Bélanger, R. E., Akre, C., Berchtold, A., & Michaud, P. A. (2011). A U-shaped association between intensity of internet use and adolescent health. *Pediatrics, 127*(2), e330–e335. doi:10.1542/peds.2010-1235

Doornwaard, S. M., Bickham, D. S., Rich, M., Vanwesenbeeck, I., van den Eijnden, R. J., & Ter Bogt, T. F. (2014). Sex-related online behaviors and adolescents' body and sexual self-perceptions. *Pediatrics, 134*(6), 1103–1110. doi:10.1542/peds.2014-0592

Eldredge, L. K. B., Parcel, G. S., Kok, G., & Gottlieb, N. H. (2011). *Planning health promotion programs: An intervention mapping approach* (3rd ed.). Hoboken, NJ: Wiley.

Franklin, V. L., Waller, A., Pagliari, C., & Greene, S. A. (2006). A randomized controlled trial of sweet talk, a text-messaging system to support young people with diabetes. *Diabetic Medicine, 23*(12), 1332–1338. doi:10.1111/j.1464-5491.2006.01989.x

Free, C., Knight, R., Robertson, S., Whittaker, R., Edwards, P., Zhou, W., et al. (2011). Smoking cessation support delivered via mobile phone text messaging (txt2stop): A single-blind, randomised trial. *Lancet, 378*(9785), 49–55.

Free, C., McCarthy, O., French, R., Wellings, K, Bailey, J. & Baraitser, P. (2014). *Text messaging to increase safer sex behaviours: The development of a theory and evidence based intervention*. Paper presented at the United Kingdom Society of Behavioural Medicine, Nottingham.

Free, C., Phillips, G., Galli, L., Watson, L., Felix, L., Edwards, P., et al. (2013). The effectiveness of mobile-health technology-based health behaviour change or disease management interventions for health care consumers: A systematic review. *PLOS Medicine, 10*(1), e1001362.

Freeman, B., Kelly, B., Baur, L., Chapman, K., Chapman, S., Gill, T., et al. (2014). Digital junk: Food and beverage marketing on Facebook. *American Journal of Public Health, 104*(12), e56–e64. doi:10.2105/AJPH.2014.302167

French, R., McCarthy, O., Baraitser, P., Wellings, K, Bailey, J. & Free, C. (2014). *Young people's views and experiences of a mobile phone texting intervention to promote safer sex behaviour*. Presentation for the 10th UKSBM Annual Scientific Meeting East Midlands Conference Centre, Nottingham, 2014. Retrieved from http://www.uksbm.org.uk/wp-content/uploads/2015/04/Young-peoples-views-and-experiences-of-a-mobile-phone-texting-intervention-to-promote-safer-sex-behaviour.pdf

Giedd, J. N. (2012). The digital revolution and adolescent brain evolution. *Journal of Adolescent Health, 51*(2), 101–105. doi:10.1016/j.jadohealth.2012.06.002

Gini, G., & Pozzoli, T. (2009). Association between bullying and psychosomatic problems: A meta-analysis. *Pediatrics, 123*(3), 1059–1065. doi:10.1542/peds.2008-1215 123/3/1059 [pii]

Gold, J., Pedrana, A. E., Sacks-Davis, R., Hellard, M., Chang, S., Howard, S., et al. (2011). A systematic examination of the use of online social networking sites for sexual health promotion. *BMC Public Health, 11*, 583. doi:10.1186/1471-2458-11-583

Greydanus, D. E., & Greydanus, M. M. (2012). Internet use, misuse, and addiction in adolescents: Current issues and challenges. *International Journal of Adolescent Medicine and Health, 24*(4), 283–289. doi:10.1515/ijamh.2012.041

Hakala, P. T., Rimpelä, A. H., Saarni, L. A., & Salminen, J. J. (2006). Frequent computer-related activities increase the risk of neck-shoulder and low back pain in adolescents. *European Journal of Public Health, 16*(5), 536–541. doi:10.1093/eurpub/ckl025

Hamm, M. P., Shulhan, J., Williams, G., Milne, A., Scott, S. D., & Hartling, L. (2014). A systematic review of the use and effectiveness of social media in child health. *BMC Pediatrics, 14*(1), 138. doi:10.1186/1471-2431-14-138

Hong, J. S., Kral, M. J., & Sterzing, P. R. (2014). Pathways from bullying perpetration, victimization, and bully victimization to suicidality among school-aged youth: A review of the potential mediators and a call for further investigation. *Trauma Violence & Abuse., 16*(4), 379–390. doi:10.1177/1524838014537904

International Telecommunication Union. (2013). *Measuring the information society*. Geneva: International Telecommunication Union. Retrieved from https://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2013/MIS2013_without_Annex_4.pdf

Jelenchick, L. A., Eickhoff, J. C., & Moreno, M. A. (2013). "Facebook depression?" social networking site use and depression in older adolescents. *Journal of Adolescent Health, 52*(1), 128–130. doi:10.1016/j.jadohealth.2012.05.008

Kowalski, R. M., & Limber, S. P. (2013). Psychological, physical, and academic correlates of cyberbullying and traditional bullying. *Journal of Adolescent Health, 53*(1), S13–S20. doi:10.1016/j.jadohealth.2012.09.018

Lajunen, H. R., Keski-Rahkonen, A., Pulkkinen, L., Rose, R. J., Rissanen, A., & Kaprio, J. (2007). Are computer and cell phone use associated with body mass index and overweight? A population study among twin adolescents. *BMC Public Health, 7*(1), 24. doi:10.1186/1471-2458-7-24

Lam, L. T. (2014). Risk factors of internet addiction and the health effect of internet addiction on adolescents: A systematic review of longitudinal and prospective studies. *Current Psychiatry Reports, 16*(11), 1–9. doi:10.1007/s11920-014-0508-2

Lenhart, A., & Page, D. (2015). *Teens, social media & technology overview 2015*. Washington, D.C.: The Pew Internet Project's research on teens. Retrieved from http://www.pewInternet.org/2015/04/09/teens-social-media-technology-2015/

Lim, M. S., Hocking, J. S., Aitken, C. K., Fairley, C. K., Jordan, L., Lewis, J. A., et al. (2012). Impact of text and email messaging on the sexual health of young people: A randomised controlled trial. *Journal of Epidemiology and Community Health, 66*(1), 69–74. doi:10.1136/jech.2009.100396

Livingstone, S., Bober, M.,& Helsper, E. J. (2005). *Internet literacy among children and young people: Findings from the UK children go online project.* Retrieved from https://www.researchgate.net/publication/30520689_Internet_literacy_among_children_and_young_people_Findings_from_the_UK_Children_Go_Online_project

Luder, M. T., Pittet, I., Berchtold, A., Akre, C., Michaud, P. A., & Suris, J. C. (2011). Associations between online pornography and sexual behavior among adolescents: Myth or reality? *Archives of Sexual Behavior, 40*(5), 1027–1035. doi:10.1007/s10508-010-9714-0

L'Engle K. (2015). Mobile for reproductive Health (M4RH). Retrieved from http://m4rh.fhi360.org/

McLuhan M. & Powers B. R. (1989). The global village: Transformations in world life and media in the 21st century. Oxford University Press.

Michaud, P. A., & Bélanger, R. (2010). Adolescents, internet and new technologies: A new wonderland? *Revue Medicale Suisse, 6*(253), 1230–1232.

Michaud, P. A., & Colom, P. (2003). Implementation and evaluation of an internet health site for adolescents in Switzerland. *Journal of Adolescent Health, 33*(4), 287–290.

Mills, K. L. (2014). Effects of internet use on the adolescent brain: Despite popular claims, experimental evidence remains scarce. *Trends in Cognitive Sciences, 18*(8), 385–387. doi:10.1016/j.tics.2014.04.011

Mitchell, K. J., Finkelhor, D., Jones, L. M., & Wolak, J. (2012). Prevalence and characteristics of youth sexting: A national study. *Pediatrics, 129*(1), 13–20. doi:10.1542/peds.2011-1730

Moreno, M. A. (2014). Cyberbullying. *JAMA Pediatric, 168*(5), 500. doi:10.1001/jamapediatrics.2013.3343

Moreno, M. A., Jelenchick, L., Cox, E., Young, H., & Christakis, D. A. (2011). Problematic internet use among US youth: A systematic review. *Archives of Pediatrics and Adolescent Medicine, 165*(9), 797–805. doi:10.1001/archpediatrics.2011.58

Mosnaim, G. S., Cohen, M. S., Rhoads, C. H., Rittner, S. S., & Powell, L. H. (2008). Use of MP3 players to increase asthma knowledge in inner-city African-American adolescents. *International Journal of Behavioral Medicine, 15*(4), 341–346. doi:10.1080/10705500802365656

Van Ouytsel, J., Ponnet, K., & Walrave, M. (2014). The associations between adolescents' consumption of pornography and music videos and their sexting behavior. *Cyberpsychology, Behavior, and Social Networking, 17*(12), 772–778. doi:10.1089/cyber.2014.0365

O'Keeffe, G. S., & Clarke-Pearson, K. (2011). The impact of social media on children, adolescents, and families. *Pediatrics, 127*(4), 800–804. doi:10.1542/peds.2011-0054

Prensky, M. (2004). The emerging online life of the digital native: What they do differently because of technology and how they do it. Retrieved from http://www.bu.edu/ssw/files/pdf/Prensky-The_Emerging_Online_Life_of_the_Digital_Native-033.pdf

Pujazon-Zazik, M. A., Manasse, S. M., & Orrell-Valente, J. K. (2012). Adolescents' self-presentation on a teen

dating web site: A risk-content analysis. *The Journal of Adolescent Health, 50*(5), 517–520. doi:10.1016/j.jadohealth.2011.11.015

Quraishi, S., & Quraishi, H. (2013). Freedom from HIV/AIDS: Mobile phone games for health communication and behaviors. In J. Donner & P. Mechael (Eds.), *mHealth in practice: Mobile technology for health promotion in the developing world*. London: Bloomsbury Publishing.

Rahwan, I., Krasnoshtan, D., Shariff, A., & Bonnefon, J. F. (2014). Analytical reasoning task reveals limits of social learning in networks. *Journal of the Royal Society, Interface, 11*(93), 20131211. doi:10.1098/rsif.2013.1211

Van Rooij, A. J., Schoenmakers, T. M., van de Eijnden, R. J., & van de Mheen, D. (2010). Compulsive internet use: The role of online gaming and other internet applications. *Journal of Adolescent Health, 47*(1), 51–57. doi:10.1016/j.jadohealth.2009.12.021

Shain, R. N., Piper, J. M., Holden, A. E., Champion, J. D., Perdue, S. T., Korte, J. E., & Guerra, F. A. (2004). Prevention of gonorrhea and Chlamydia through behavioral intervention: Results of a two-year controlled randomized trial in minority women. *Sexually Transmitted Diseases, 31*(7), 401–408. doi:00007435-200407000-00002 [pii]

Smith, P. K., Thompson, F., & Davidson, J. (2014). Cyber safety for adolescent girls: Bullying, harassment, sexting, pornography, and solicitation. *Current Opinion in Obstetrics and Gynecology, 26*(5), 360–365. doi:10.1097/GCO.0000000000000106

Sticca, F., & Perren, S. (2013). Is cyberbullying worse than traditional bullying? Examining the differential roles of medium, publicity, and anonymity for the perceived severity of bullying. *Journal of Youth and Adolescence, 42*(5), 739–750. doi:10.1007/s10964-012-9867-3

Suris, J. C., Akre, C., Piguet, C., Ambresin, A. E., Zimmermann, G., & Berchtold, A. (2014). Is internet use unhealthy? A cross-sectional study of adolescent internet overuse. *Swiss Med Wkly, 144*, w14061. doi:10.4414/smw.2014.14061

Tisseron, S., Missonnier, S., & Stora, M. (2012). *L'enfant au risque du virtuel*. Paris: Dunod.

UNICEF. (2012). Progress for children: A report card on adolescents. New York: Author. Retrieved from http://www.unicef.org/media/files/PFC2012_A_report_card_on_adolescents.pdf

Webster, W., Davidson, J., Bifulco, A., Gottschalk, P., Caretti, V., Pham, T, … & Milazzo, V. (2012). European online gooming project. European Commission safer Internet plus programme, Brussels.

Weitzel, J. A., Bernhardt, J. M., Usdan, S., Mays, D., & Glanz, K. (2007). Using wireless handheld computers and tailored text messaging to reduce negative consequences of drinking alcohol. *Journal of Studies on Alcohol and Drugs, 68*(4), 534–537.

Wentz, E., Nyden, A., & Krevers, B. (2012). Development of an internet-based support and coaching model for adolescents and young adults with ADHD and autism spectrum disorders: A pilot study. *European Child and Adolescent Psychiatry, 21*(11), 611–622. doi:10.1007/s00787-012-0297-2

Willemse, I., Waller, G., Genner, S., Suter, L., Oppliger, S., Huber, A. L., et al. (2014). *JAMES* — Jeunes, activés, médias — enquête. Zurich Suisse: Haute école des science appliquées de Zurich. Retrieved from https://www.zhaw.ch/storage/psychologie/upload/forschung/medienpsychologie/james/2014/Rapport_JAMES_2014.pdf

Wolak, J., & Finkelhor, D. (2013). Are crimes by online predators different from crimes by sex offenders who know youth in-person? *Journal of Adolescent Health, 53*(6), 736–741. doi:10.1016/j.jadohealth.2013.06.010

Worthen, M. R. (2007). Education policy implications from the expert panel on electronic media and youth violence. *Journal of Adolescent Health, 41*(6), S61–S63. doi:10.1016/j.jadohealth.2007.09.009

Yen, C. F., Hsiao, R. C., Ko, C. H., Yen, J. Y., Huang, C. F., Liu, S. C., et al. (2010). The relationships between body mass index and television viewing, internet use and cellular phone use: The moderating effects of socio-demographic characteristics and exercise. *International Journal of Eating Disorders, 43*(6), 565–571. doi:10.1002/eat.20683

Medical and Social Support to Adolescents in the Russian Federation

21

Aleksandr Kulikov, Karina Vartanova and Pavel Krotin

The Priority Health and Development Needs of Young People

Today, three main tendencies are noted: (1) a drastic deterioration of health in this age-group, (2) an increased interest of youth in health matters, and (3) decreased availability of medical services for teenagers (Levina and Kulikov 2006).

Social importance of adolescents is determined by the fact that they represent the future labor, defense, and reproductive and intellectual potential of society. The Russian Federation faces a demographic crisis, with an average population decrease of 700,000 people per year. The number of Russian children and adolescents from 0 to 19 years of age decreased from 36.5 million in 2002 to 22.9 million in 2013 (Federal State Statistics Service 2014).

In 2005–2010, mortality rate among Russian adolescents aged 15–19 years was in the range 108–120 per 100,000 population in this age. This figure is 3–5 times higher than that in most countries in the European region (Albitsky et al. 2010). In 2012, the mortality rate (total deaths per 100,000 average relevant population) among 15–19-year-olds was in Slovenia—25.2; the Czech Republic—35.8; Lithuania—59.0; and Russian Federation—81.2 (TransMonEE 2014).

Analysis of adolescent mortality reveals that 75 % of all deaths are preventable, for they are caused by accidents (34 %), suicide (30 %), chronic diseases (20 %), substance misuse/poisoning (6 %), alcohol poisoning (5 %), and unknown causes (5 %). The major groups of diseases leading to the high mortality rate in this age-group are determined by adolescent risky behavior (Ivanova et al. 2011; Albitsky et al. 2010; UNICEF and Rosstat 2010).

Morbidity

Negative tendencies in the dynamics of adolescent's health status have been observed in Russia. Based on the data of the Research Center of Children Health of the Russian Academy of Medical Sciences, no more than 3–10 % of children and teenagers are considered healthy. General morbidity incidence increased by 26.6 % from 2000 to 2010 among children up to 14 years of age and by 97.8 % among adolescents 15–17 years of

Professor Pavel Krotin deceased 20 March 2016 at the age of 69. Professor Krotin was a physician emeritus of the Russian Federation, head of the St-Petersburg's multidisciplinary Consultative and Diagnostic Centre Juventa, and dedicated more than 20 years of his life to the establishment of a new system of medical-social and reproductive health care for adolescents in the Russian Federation—youth-friendly health clinics.

A. Kulikov (✉)
North-Western State Medical University, St. Petersburg, Russia
e-mail: al.kulikov@mail.ru

K. Vartanova
Independent Consultant, Moscow, Russia

P. Krotin
Juventa City Consultative and Diagnostic Centre, St. Petersburg, Russia

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_21

age. The number of pediatric malignancies, hematology and immunity illnesses, and digestive, musculoskeletal, and urogenital system disorders increased twofold. There is evidence indicating that the level of physical development of children in Russia is deteriorating. During the past 10 years, the number of boys and girls with normal body weight has decreased by 16.9 and 13.9 %, respectively.

In recent years, problems from being overweight and obese have been gradually increasing, especially among boys and young men (i.e., 10–11 % early-stage obesity). The reasons for this are physical inactivity and an unbalanced diet. At the same time, mostly among girls, there is a high frequency of girls who are underweight (20 %). The basis of this phenomenon is more dissatisfaction with her body and deliberate restriction of caloric intake (Baranov et al. 2010).

Youth mental health remains a serious concern for Russia. There are around 200,000 teenagers officially registered in psychoneurological clinics (Federal State Statistics Service 2009). The prevalence rate for depression among young people approaches 19 %, and the level of suicide among teenagers in Russia is one of the highest in Europe. In 2012, suicide death rate among 15–17-year-olds (total deaths per 100,000 average relevant population) was in Armenia—1.3; Hungary—2.4; the Czech Republic—4.5; Moldova—10.4; Russian Federation—11.4; and Lithuania—12.8 (TransMonEE 2014).

In the period of 1993–2010, incidence of mental disorders among adolescents increased by 91.5 %, and at the same time, there was a decrease in mental disorders among children by 3.2 % and among adult population by 6.4 % (Sabgayda and Okunev 2012).

Protection of young people's reproductive health is also crucial. While the government has identified young people's reproductive health as a priority, healthcare and education systems are not yet properly equipped to address their specific needs. This is important because the quality of children's and adolescent's reproductive health has a direct influence on national demographic processes.

More than 30 % of boys and girls demonstrate puberty delay. Frequency of menstrual function disorders among girls between 15 and 17 increased from 2001 to 2008. Prevalence of inflammatory diseases of female pelvic organs (N70-N77, ICD 10) among girls increased by 46.2 % during this period (Baranov et al. 2010).

More than 50 % of adolescents have diseases that can limit their reproductive functions in the future. About 20 % of girls have gynecological diseases, and 75–80 % have somatic diseases, which limit fertility such as renal failure and endocrine, nutritional, and metabolic diseases of the liver (MHRF 2001; Kulikov 2007). The situation is not any better regarding the reproductive health of male teenagers. The prevalence of andrological diseases in school students is 12.6 %, and 2.2 % of school-aged boys require surgical treatment for phimosis, varicocele, and hydrocele (Mirskiy et al. 2003).

The level of abortions, among adolescents in the 15–19-year-old age-group, in Russia is about 11.5 per 1000 teenagers (2013), a rate that is one of the highest in the world. Despite a decrease in the absolute number of abortions in the 15–19-year-old age-group over the past 5 years, this age-group accounted for 3 of every 10 abortions in Russia (MHRF 2014).

Young people are also at a great risk of acquiring STIs. According to the Ministry of Health, more than 52,000 patients under 17 years of age were registered in 2003 as having STIs. In 2012, 1293 cases of syphilis and 1420 cases of gonorrhea were registered in this age-group (MHRF 2013). Prevalence of some STIs, such as chlamydia infection, is still very high in Russia. Female chlamydial pelvic inflammatory disease was found in every third sexually active girl aged 16–18 (Tikhomirov and Sarsaniya 2005).

Rate of HIV infection among Russian adolescents improved in recent years (Simbirtseva 2010). In 2000, 24.7 % of all HIV cases identified were among the age-group of 15–20-year-old young people. Due to the decrease in the number of infected people, in 2013 this age-group represented only 1.4 % of all HIV cases (Federal Scientific and Methodological

Center for Prevention and Control of AIDS 2014). Today, adolescents with HIV infection do not exceed 2–3 %, although in 2000 it was 25 %. A high level of HIV prevalence is still found among people over 20 years of age. The number of children born to HIV-infected mothers is growing steadily.

Health-Related Behaviors

Early sexual activity of adolescents and its consequences has become one of the most important social issues in Russia. About one half of all school children 16–17 years of age have engaged in sexual activity. Early sexual activity was considered inappropriate by only 5–12 % of the boys. Young people are often not physically or psychologically prepared for sexual activity. They do not have enough knowledge about sexually transmitted infections (STIs), abortion, or the potential negative outcomes of early sexual activity (Kulikov et al. 2010).

According to the World Health Organization (WHO), the level of sexual activity of girls at the age of 15 in Russia is lower than the average level of sexual activity for the same age girls in Europe (18 % vs. 23 %), although the boys in Russia are more sexually active than their European counterpart (37 % in Russia vs. 29 % in Europe and North America). It is important to note that in 2005, the number of sexually active Russian girls was 24 % but dropped down to 18 % in 2009, and the number of sexually active boys dropped from 44 % in 2005 to 37 % in 2009 (World Health Organization 2012) (see Fig. 21.1).

Risky behavior among Russian adolescents also declined in recent years. Some 12 % of 15-year-old adolescents report daily smoking, while 15–19 % report weekly smoking that corresponds to the average cigarette use among European adolescent (see Fig. 21.2).

The percentage of 15-year-olds drinking beer at least once a week was 8 %. The percentage drinking stronger alcohol (4 %) is significantly less than the average European adolescent (WHO 2012). At the same time, the number of 11-year-olds who have been drunk at least twice reached 6 % (HBSC average is 2 %) (WHO 2012).

The number of psychoactive substance users in Russia among those 10–14-year-olds is 217.1 per 100,000 of population of corresponding age. There has been a sharp increase in the number of users who are 15–17-year-olds (8.9 times higher in urban and 10.3 times higher in rural areas). Among all users of psychoactive substances, the number of males is 4.9 times higher than females (Mikhaylova et al. 2014).

A survey to explore values and attitudes in adolescents with high-risk behavior was carried out in 2003 in St. Petersburg and included 147 boys. The first sample (mean age 17.5 years) included boys who did not have a sexual experience, denied smoking, using alcohol, using drugs, or toxic substances. The second group (mean age 19.1 years) included persons who had sex before the age of majority and consumed alcohol more than 1–2 times a week. Half of these young people also smoke and use drugs. The survey found that youth risk-taking behavior often is complex, when the same teenager has 2–3 different damaging health behaviors. The greatest life values, for teenagers who participate in risk-taking behaviors, are freedom and independence (76.9 %). At the same time, those who do not belong to the risk-taking category, most valued family (68.8 %).

Even in the group with socially approved behavior, about a third do not see anything wrong with early sexual activity. As can be seen, teens that maintain a healthy lifestyle, in fact, are as interested in risky behavior as the risk-taking adolescents (Kulikov and Boyeva 2003).

In fact, high-risk behavior is considered by many to be a normal part of adolescence. To eradicate risky behavior completely is more or less impossible. Prevention is required, however, to address the special target groups on the basis of their medical-social characteristics. Thus,

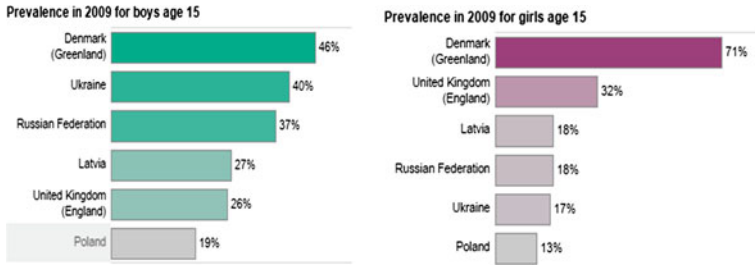


Fig. 21.1 Proportion of boys and girls age 15 who have ever had sex. *Source* WHO (2012). Health Behavior in School-aged Children (HSBC) Study

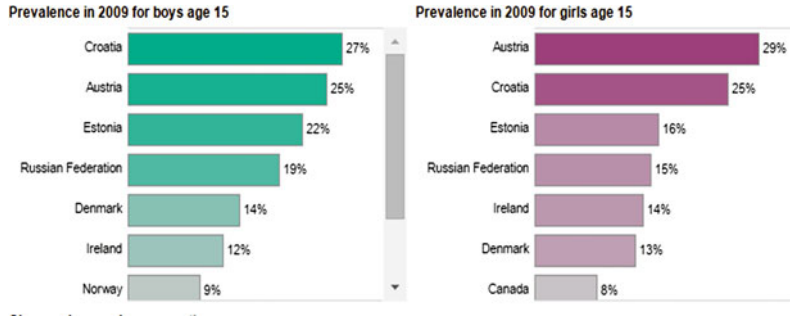


Fig. 21.2 Proportion of boys and girls age 15 who report smoking cigarettes weekly. *Source* WHO (2012). Health Behavior in School-aged Children (HSBC) Study

prevention programming should differentiate in accordance with those characteristics.

National Programs Aimed at Health and Social Well-Being of Adolescents

In general, the current Russian Federation legislation is favorable to meeting adolescents' and young people's health needs and enabling delivery of various services and interventions. It guarantees that comprehensive assistance is provided to the adolescents and young people of Russia to protect their health, including the aspects of reproductive and mental health needs. In addition, the state guarantees that adolescents and young people will receive, on a level equal to that of older adults, free, accessible, voluntary, and quality support in family planning, contraception, and the diagnosis and treatment of STIs (including HIV infection).

The most important regulatory documents in relation to adolescent health and youth-friendly health services are summarized below.

> **The Russian Federation Law no. 5487−1**, on Protecting Citizens' Health, dated 22 July 1993, Article 61. Confidentiality and medical secrets.

The general rule is that the contents of a child's medical record are a medical secret; the information therein may be transmitted to no one without the patient's consent (i.e., the consent of a child of 15 years and over, or the consent of the parents or legal representatives of a child under the age of 15 years).

> **The Russian Federation Law no. 5487−1**, on Protecting Citizens' Health, dated 22 July 1993, Articles 32–34. Consent to medical intervention.

Minors of 15 years and over have the right to give voluntary informed consent to, or to refuse, medical intervention, including the right to demand that the doctors provide information on

the state of their health. The same articles guarantee the right of adolescents of 15 years and over to abortion services without parental or legal representatives' consent.

Order of Russian Federation Ministry of Health no. 154, dated 5 May 1999, On Improving Medical Assistance to Adolescent Children.

In the Russian Federation, government healthcare agencies develop and manage medical and social services for children and adolescents. In recognition of the need to change the system of health care for young people, and of the need to take special measures to protect the reproductive health of adolescents, the Ministry of Health of the Russian Federation issued this special decree in 1999. This served as an important entry point in developing a system of medical and social support services for adolescents that aimed to bridge the gap between adolescents' health needs and the Russian Federation's existing healthcare services.

Russian experts and politicians have been guided by the European strategy for child and adolescent health and development. The strategy went from resolution to action in 2005–2008 (WHO 2008). As a result, the Strategy of Adolescent Health and Development in Russia (2010) was a harmonization with European and Russian approaches to theory and practice of adolescent health. This document was developed by the Federal State Institution "Scientific Centre of Children Health" under the Russian Academy of Medical Sciences and supported by the Ministry of Health and the Ministry of Education and Science of Russia.

Box 1: The Strategy of Adolescent Health and Development in Russia

This strategy is based on the following provisions:

- The current healthcare system is not tailored to meet the current realities of the Russian teenagers: increased adolescent sexuality and related problems—risk behavior, HIV/AIDS, STIs, reproductive health deterioration, unwanted pregnancies among minors, as well as increased level of adolescents' physical and mental developmental disorders.
- There are substantial differences among the Russian Federation regions in adolescents' health status and access to health services.
- Poor and marginalized groups, families of migrants, and internally displaced persons are particularly at risk, thus experiencing health problems and contributing to social instability.

The aim of this strategy is to orient legislative and executive authorities of the Russian Federation so that they can develop their own policies and programs. It identifies the main challenges in the area of adolescent health and development and, most importantly, provides a guide to action based on evidence and experience gained in recent years. It is alleged that investing in the healthy development of young people today will, by definition, contribute to economic prosperity tomorrow.

An important stage in the development of medical care for adolescents is the:

Presidential Executive Order of 01.06.2012 N 761. On the National Strategy for Action on behalf of Children from 2012 to 2017.

This document emphasizes that adolescents aged 10–18 years are not always considered as a state priority. The difficulties they face in this challenging age sometimes lead to the most tragic consequences. Russian adolescent suicide prevalence is one of the highest in the world, and the infant mortality rate is significantly higher than that in other European countries. There is a strong need to pay special attention to teenage alcoholism, including "beer drinking" (the consumption of an excessive amount of beer), drug and substance abuse, non-medical use of narcotic drugs, and psychotropic and other toxic substances.

Box 2: Actions to be Implemented

- In accordance with the Strategy of Adolescent Health and Development in Russia, the following actions have to be implemented in the near future:
- Further development of adolescent health care, youth- and adolescent-friendly health clinics, and healthy lifestyle promotion;
- Support AFHC already established and successfully functioning in the regions of Russian Federation;
- Create and develop existing financial support mechanisms, including the fund to support children in difficult situations, non-governmental foundations, and other relevant organizations active in the field of children's health.

Box 3: Expected Results

- Reducing the number of children and adolescents using tobacco and alcohol, drugs, and psychotropic and other toxic substances;
- Reducing the number of children and adolescents with HIV infection, viral hepatitis B and C, and tuberculosis, including those infected in healthcare facilities;
- Reducing the number of teenage suicides;
- Creating a system of ongoing monitoring and evaluation of children's participation in making decisions affecting their interests.

The national strategy is implemented in conjunction with the *Concept of long-term socio-economic development of the Russian Federation for the period until 2020*, Concept of Demographic Policy of the Russian Federation until 2025, and priority national projects. Coordinating body is formed under the president of the Russian Federation Coordinating Council. Achieving the objectives of the National Strategy strongly requires establishing of consolidated budget for children and adolescents.

The government of the Russian Federation on November 29, 2014—N 2403-p approved State Youth Policy of the Russian Federation up to 2025. Fundamentals of State Youth Policy are aimed at the integration of young people into the national socioeconomic and sociocultural life. The policy was designed to create the favorable conditions for realization and effective mechanisms to support civic education and patriotism. It promotes the development of youth initiatives and supports talented youth. It supports the formation of values of a healthy lifestyle and the family institution. Lastly, the policy supports developing a culture of interethnic communication and respect for people of other nations.

Currently, the Ministry of Education and Science of Russia is developing an action plan for the framework implementation, involving all authorities and public institutions. The main purpose of the *State Youth Policy* is to improve the socioeconomic situation of young people of the Russian Federation and to increase their involvement in social and economic life of the country. Operational mechanism of *State Youth Policy* implementation envisages financial inputs from the federal, regional, and municipal budgets, as well as attracting funds from non-budgetary sources.

Health System Context and Health Services Available for Young People in Russian Federation: Organization of Health Care

Primary Care Services

Until 1999, children were treated at children's outpatient polyclinics until the age of 15. Then, they were moved on to adolescent departments of adult clinics. One of the first decisions made by the Ministry of Health, as part of the reform of the provision of medical services for young people, was to keep children at children's

polyclinics until the age of 18. These children's polyclinics provide free services for the children and adolescents living in the catchment area, provided they have valid compulsory medical insurance. Children's polyclinic doctors (i.e., neuropathologists, oculists, ear, nose, and throat specialists, urologists, surgeons, children's and adolescents' gynecologists, cardiologists, and endocrinologists) diagnose and treat acute diseases and monitor the health of children with chronic pathologies. Polyclinics also perform laboratory analyses for children, including for HIV infection.

The transfer of 15–18-year-olds to the pediatric network essentially did not alter the situation in relation to adolescent reproductive health. Pediatricians in local children's polyclinics provide health care for adolescents, but their counseling approaches tend to be tailored toward the needs of young children. With an average of 12–15 min for each patient, doctors are not able to address the adolescents' specific counseling needs.

School Health Services

School medicine, as part of the primary health care, is supposed to provide (in close cooperation with children's polyclinics) a range of preventive services for children and adolescents of school age. In reality, however, the overwhelming majority of school medical units has a deficit of medical professionals and, as a rule, is staffed by paramedical personnel who deal mainly with vaccination and monitoring the quality of school food. The need to restore effective school health service in Russia is no longer in doubts (Kuchma 2012). School may and must become the main health-saving environment.

Specialists, at the Russian Society of School and University of Medicine and Health, conducted research aimed at developing the system of preventive and recreation activities in schools. They state that the suggested system requires insignificant financial investments. Certain academic and practical training about learning environments is required of medical personnel and educators related to the matters of preventive measures, recreation, and compliance with sanitary requirements. A special program for school health personnel training (two-week duration) for the level of postgraduate education was developed by the Russian Society of School and University of Medicine and Health in 2012.

Development of a new system of school medicine was approved by, Order of the Ministry of Health of Russia, No. 822n dated November 5, 2013—On Approval of Procedure of Healthcare Delivery to the Underage Including the Period of Training and Education at Educational Establishments, has become a logical end of this process. The system of primary medical assistance to children anticipates establishment of school medical units.

Medical unit includes a room for the school doctor and a treatment room located on the premises of the educational organization. Normative staffing level is as follows: one pediatrician per 1000 students, one specialist in hygiene for children and adolescents per 2500 students, and one nurse per 100–500 students.

Box 4: Medical and Disease Prevention Services for School Children

The following scope of assistance is provided:

- Control over sanitary requirements to school: learning environment, physical exercises, and catering;
- First medical assistance to school children;
- Organizing and carrying out work on immunization;
- Organizing and carrying out annual screenings and periodic medical examinations of school children;
- Medical and psychological adjustment of students;
- Analysis of health of school children;
- Disease prevention of the underage and promotion of healthy lifestyle;

- Bullying prevention; and
- Extension of the out-of-school activities including prevention programs, physical exercise programs, psychological and social adaptation of school children programs, and developing a mutual understanding between teachers and school children.

Medical and Social Care Adolescent Health Units

Experience shows that the most effective interactions between medical personnel and adolescents are achieved in specifically designed units for adolescents. In the Russian Federation, activities related to developing medical and social care for children and adolescents are the responsibility of the government healthcare agencies in accordance with Decree No. 154 issued by the Ministry of Health of Russia in 1999.

According to the Ministry of Health order, every children's polyclinic is supposed to establish a medical and social care adolescent health unit for children and adolescents. This unit should have implemented sociomedical activities taking into consideration significant peculiarities of adolescents and aimed at preservation and promotion of adolescents' health, their social and legal protection and support, preventive measures, and reduction of disease incidence and healthy lifestyle promotion.

Box 5: Primary Objectives of Units
The stated primary objectives of the medical and social care unit are as follows:

- Provide medical and social support (home visits) for families; identify adolescents with social risk factors, as well as adolescents in need of medical attention and social protection and support;
- Rendering of medical and psychological assistance;
- Activities for preservation and promotion of reproductive health of girls and boys;
- Sanitary (including sexual) education and support of activities for youth's preparation for future family life;
- Healthy lifestyle promotion;
- Individual or mediated social and legal assistance to children, adolescents, and families in compliance with the applicable legislation.

Staffing of Adolescent Medical and Social Care Units

Adequate staffing for an adolescent medical and social care unit includes more than medical personnel. These units function more effectively when a psychologist, pediatric physician, adolescent physician, and a social worker also provide services. To meet the objectives in the area of reproductive health, obstetrics, gynecologists, and urologist services need to be available. And, services provided by a legal advisor also need to be available. Unfortunately, for a majority of children's polyclinics, the Ministry's decree has remained a vain wish. The responsibility to organize primary care including its financing is with the local health authorities that may not recognize the importance of having a dedicated adolescent health unit within primary care or may have difficulties financing a unit. At the same time, youth in need of medical services often faces difficulties in obtaining them from ordinary healthcare establishments.

Adolescents who have had long-term relationships with their local pediatricians are often embarrassed to discuss difficult issues such as contraception or sexually transmitted infections (STIs) and may also worry about breaches of confidentiality.

Specialized Services

Adolescents can access specialized reproductive and sexual health services in a number of state health institutions: dispensaries (e.g., dermatovenereological and narcological), maternity clinics (reproductive health, pregnancy, and childbirth services), family planning and reproduction centers, and AIDS and infectious disease prevention centers. Despite their offer of free testing and diagnostic and treatment services, these health institutions are not attractive to the majority of adolescents and young people because of judgmental providers and lack of confidential services.

Socially vulnerable categories of young people (drug users, commercial sex workers, and unsupervised and street children) have the same rights as other groups of the population. In reality, however, they have very limited access to health services, with the exception of those provided by NGOs.

In general, the healthcare system, as it is today, is not equipped to address the specific needs of adolescents and young people in the area of reproductive and sexual health, mental disorders, or risky behavior. Available health services are mainly disease-oriented, and there are no comprehensive primary care-level services that address both prevention and treatment. The inability of health services to meet the adolescent health needs often results in adolescents failing to seek necessary treatment or counseling, because they are unwilling to expose themselves to criticism or stigma.

Youth-Friendly Clinics

Acknowledging the failures of mainstream services to meet the needs of adolescents, the so-called youth-friendly clinics (YFC), was established. They were first established over 15 years ago in St. Petersburg and Novosibirsk, and subsequently, many counseling centers for young people were created in other regions (MHRF 2001). These services can be provided at "adolescent- and youth-friendly clinics" (Vartanova et al. 2010).

Models of youth-friendly clinics range from small rural service centers to large adolescent health centers. The Yuventa Center, based in St. Petersburg, is the largest youth-friendly facility in Russia. It employees the services of 160 specialists who provide sociomedical assistance and preventive services to adolescents. Youth-friendly health services may be provided by a stationary clinic, a mobile clinic, or a combination of both. Mobile clinics are still not common, but they appear to be an effective model for serving large rural territories.

The institutions that provide medical and social services to adolescents can have different legal and organizational forms. Youth-friendly health services can be a subdivision of municipal health care, a social protection institution, or they can be provided by independent organizations. A youth clinic can be housed in a larger clinic or provide services as a stand-alone clinic. It is preferable that a youth-friendly health service is housed in a separate building, or at least has an independent, separate entrance from those used by adult clients. The separation of services is an effort to make sure that adolescents feel comfortable when seeking medical services.

Most youth-friendly health clinics are subdivisions within municipal health care or social protection institutions such as family planning and reproductive health centers, AIDS centers, maternity consulting centers, maternity hospitals, children's polyclinics, dermatology and venereology dispensaries, narcological dispensaries, centers for social support to children and families, social rehabilitation centers, and psychological support centers.

There are several official status designations listed in the Ministry of Health state register of health institutions, which are used by

youth-friendly health services, including "adolescent reproductive healthcare center," "department of medical and social services for adolescents," and "consultative and diagnostic center." In most cases, however, the youth clinic is an integral part of the host institution and does not require any special status.

YFC Principles of Operation

YFC provides services that, for various reasons, cannot be provided at other medical facilities. YFC is a program providing comprehensive medical-psychological-social services to solve health-related issues typical of the adolescent period of development. The services are voluntary, accessible, friendly, and trustworthy. The YFC idea is to provide help to adolescents and youth through understanding of their specific problems and jointly seeking ways to change behavior to maintain health (Krotin et al. 2006).

YFC differs from other healthcare organizations in the following way:

(1) YFC offers a wider range of services, and the patient receives comprehensive services (not only medical, but also psychological and social);
(2) Preventive measures are dominant in YFC operations;
(3) YFC operates on principles of voluntariness, accessibility, friendliness, and trust.

YFC Objective

Maintain the health and secure favorable conditions for socialization of adolescents.

YFC Tasks

Treatment and rehabilitation;
Prevention of diseases, problems, and their recurrences;
Provision of information and counseling; and
Creation of a psychologically conducive environment for each adolescent is constructed in order to facilitate the treatment and resolve health, social, and psychological problems.

Implementation of YFC Principles

I. **Accessibility**—adolescents should have real opportunities to obtain services: simple registration procedures, guaranteed free-of-charge or affordably priced medical services, comprehensive services, availability of all required information, and availability of assistance at the time of the visit.
II. **Friendliness**—the service providers' "highly friendly attitude" should be based on an understanding and acceptance of specific features of adolescents. Service providers must show respect and tolerance, maintain the adolescent's ***confidentiality,*** and encourage adolescents to express their ideas. The staff understands and accepts their lifestyle.
III. **Trust**—develops from friendly approach of service providers, strict adherence to confidentiality principles, and respect of young people's personality.
IV. **Voluntariness**—motivation of a young person to independently seek healthcare services, not only to cure an illness, but for preventive reasons. And, it includes an expression of a willingness to follow the recommendations of the YFC specialists.

YFC provides the right to choose a specialist or service (such as different methods of examination, contraception, cure, prevention, and other).

The patients need to make their own conscious informed decisions based on the information about advantages and disadvantages of each method. To implement this principle, it is important that adolescents communicate with the specialist to help them make a conscious choice. Participation, of young people in YFC operations, is voluntary.

YFC is not an alternative and should not replace the existing services, such as children's walk-in clinics. The services will contribute to each other in reaching the common goal of securing the health of the younger generation.

YFCs, as adolescent medical-social service units, can be an integral part of children's medical and preventive facilities.

Over 150 facilities providing youth-friendly services, created with the support of UNICEF, are successfully operating in the Russian Federation within the system of health care, social protection, and education government institutions. They provide reproductive, sexual, and mental health services to approximately 1.5 million young people.

A typical youth-friendly clinic is designed to serve 20,000 adolescents. Such a facility uses the services of 8–10 professionals, including a gynecologist, an andrologist, a psychologist, a social worker, a lawyer, and an obstetrician. This medical facility provides a wide range of medical and sociopsychological services related to various health problems associated with adolescence.

Given the limited financial resources of municipal health institutions, this model has proven popular, as it does not require any additional investments in staff and facilities and can be implemented simply through making necessary structural adjustments within an institution.

Evaluation of Efficiency of Medical and Social Assistance Provided at Youth-Friendly Clinics in the Russian Federation

The majority of established clinics have demonstrated their social effectiveness by showing positive changes in attitudes of the youth regarding their health. Programs have also developed effective approaches for working with young people. These programs take advantage of the established clinics to render complex, medical, psychological, and social assistance at one establishment. Another important component was a team-based method of working with the adolescents, which improved outcomes. Among other positive results is an increased recognition by decision-makers and medical specialists regarding the need to work with adolescents; increased cross-sectorial interaction; and increased responsibility among the young people themselves for their health and their level of increased adolescent participation in clinics activities.

According to the data from St. Petersburg, a city with an established full-scale network of youth clinics, the overall number of visits is about 420,000 patients per year. The number of adolescents living in St. Petersburg is about 250,000.

Over the 10-year period (2004–2013), the number of voluntary requests for information on healthy lifestyles from healthy adolescents increased sixfold and exceeded 11,000 visits per year. The annual number of calls to the "hotline" increased to 6000. The number of consultations on contraception increased from 1200 to 13,000.

Over the 10 years, the number of abortions among underage girls in St. Petersburg decreased fourfold from 1092 to 265. The number of underage patients suffering from sexually transmitted diseases decreased sixfold. In 2006, the number of registered adolescents 15–17 years with syphilis was 40, and in 2012, there were 7 cases, and cases of gonorrhea dropped from 52 cases to 7 cases.

Visits to youth-friendly clinics caused by mental health problems and difficulties with social integration, experienced by adolescents, remain frequent. The nature of the visits to YFHCs in 2007 in St. Petersburg among teenagers 10–17 years was as follows: gynecological at 75.4 %, andrological at 14.4 %, and psychological at 10.2 %.

Over the last five years, the situation with HIV/AIDS infection epidemic has been stabilizing in St. Petersburg, especially among teenagers. According to the Center for Prevention and Control of AIDS in St. Petersburg, incidence of HIV among 15–17-year-olds dropped from 27.6 per 100,000 relevant population in 2007, to 12 per 100,000 relevant population in 2011. Additionally, adolescents' awareness of the negative impact of risky behaviors has improved considerably (Simbirtseva 2010). We understand clearly that this is not only the result of YFHS, but also a result of a whole number of components, including some major alterations in social terms. However, we believe that we have made a

considerable contribution to the improvement of the HIV epidemic situation.

Youth-Oriented Information Web site

In recent years, the consulting and prevention assistance to adolescents has been provided through a special youth information portal www.teen-info.ru, which is supported by specialists of the consultation and diagnostic center Yuventa (St. Petersburg). Every day, about 240 people visit the Web site. Up to 60 people are constantly on the site and communicate in the chat room. Web site serves as an important youth-oriented information-sharing mechanism facilitating the implementation of prevention activities by youth-friendly clinics. In addition to information materials designed directly by young people, adolescents can gain access to online counseling with experts on any problems of concern to them.

The Web site provides detailed information on the youth clinic. One may schedule an appointment and choose the doctor in advance. It ensures availability and enhances confidence in the medical and the prevention treatment facility. Communication with peers accomplishes its information function. The Web site also seeks adolescent's opinion on the quality of the center's work. The Web site also helps motivate adolescents to visit the youth center and to apply for a consultation not only from a peer, but also from a specialist.

The 10-year experience of youth clinics' operation in Russia is summarized in the collected volume: Youth-Friendly Health Services in the Russian Federation: the Initiative, Experience, Result, Cooperation, Focus on the Future (Korsunskiy et al. 2010), which was presented at the meeting of WHO Regional Office for Europe in 2009 (Vartanova et al. 2010).

Quality Management

In 2007, the Russian Training and Methodological Center of YFHS (with UNICEF support) was founded in St. Petersburg. Its major objectives included the following: methodological assistance in arrangement and support of newly established YFHS both in Russia and in the Commonwealth of Independent States (CIS) countries; certification and accreditation of YFHS; efficiency monitoring of YFHS; and arrangement and participation in training of YFHS specialists.

The comprehensive analysis of the youth-friendly health services' model has been well documented. Based on this model, guidelines were developed that were designed to meet the practical needs of the service provider. The guidelines provide data on existing best practices in the Russian Federation and abroad. In addition, methodological documents on youth-friendly health services have been developed. These guidelines on youth-friendly health services (published in 2006) are designed for health service providers and managers who provide medical and social services for adolescents and young people. The guidelines feature the history of health services for adolescents in Russia and worldwide. The guidelines include international criteria, characteristics, and standards of youth-friendly health and social service facilities. The guidelines also include criteria, principles of operations, and prerequisites for the creation of similar services in Russia. The youth-friendly health services' quality and coverage measurement package was published in 2008. These guidelines are devoted to a comprehensive analysis of YFHS programs. They also provide standards of care and training for health administrators, obstetricians, as well as professionals involved in providing prevention interventions, health care, and social services for adolescents. It also includes an action plan for health program administrators, who wish to apply for certification as a youth-friendly clinic. The guidance contains international standards and criteria of adolescent healthcare provisions and principles of youth-friendly health services' functioning in the Russian Federation.

To ensure sustainability and promote further development of youth-friendly health services in the Russian Federation regions, the Ministry of Health with UNICEF support has initiated a

process aimed at improving the quality of existing services provided for adolescents and young people through youth-friendly health services' accreditation. A clinic has to demonstrate its compliance with the basic principles and criteria of youth-friendly health services through self-assessment, expert assessment, learning by experience, and other methods. Service programs can use the process and its evaluation instruments to review and assess its current status. Based on the evaluations, necessary improvements and adjustments can be made, which will lead to increased quality of youth-friendly health services and make them more attractive to adolescents and young people.

Facts and data, which were obtained in the course of the self-evaluation process (carried out at 23 youth-friendly clinics in St. Petersburg), have been analyzed. Additionally, data were collected during the accreditation of 20 youth-friendly clinics in different Russian regions (Kulikov and Vartanova 2011). The fidelity assessment (based on the principles of youth clinics) was conducted by specially trained experts who were familiar with the problems of providing adolescent medicine and knowledgeable about YFHS. External experts collected information about the activities and the implementation of the principles of youth clinics. Were services voluntary, accessible, friendly, and trustworthy? Information was gathered from the self-evaluation data of the youth clinics, the clinic's "action plan," and the clinic's application for status as a youth-friendly clinic. Data were also collected from questionnaires and interviews with administers, staff, and visitors to the clinic and from direct observation of the work of the youth clinic.

Based on these data from each clinic, a composite score was calculated for each clinic. The scores represent the degree to which each clinic meets specific parameters and indicators. Each indicator corresponds to one or more questions on the questionnaire. Each indicator is measured on a scale from 1 to 5.

Table 21.1 below presents the outcome scores based on the evaluation of the activity of youth clinics in St. Petersburg. The range is 1–5 with 5 being the highest score (Table 21.2).

Table 21.1 Typical health care for adolescents compared to YFC

Typical medical facility for adolescents	YFC
1. Help is provided mostly to sick people	1. Help is provided to sick and healthy people
2. Treatment	2. Dealing with problems, prevention, and cure
3. Narrow specialization in service provision (medical treatment)	3. Comprehensive services (medical, psychological, social, and legal)
4. "Traditional" problems, first and foremost, cure of somatic diseases	4. "Non-traditional," specific problems of the growing age, with which people do not refer to a normal clinic
5. Directive model—decision is made by the specialist	5. Cooperative model—patient participates in decision making

The creation of sustainable, highly popular, and efficient youth-friendly services within the current system of government healthcare institutions is a fairly realistic goal. The model has proven to be cost-effective and flexible. On the whole, the youth-friendly health services existing today meet clients' expectations. Expert evaluations showed that all clinics implemented a care delivery system that meets the primary needs of teenagers. At these clinics, service providers were *welcoming and friendly*, and needed *services were accessible*. The weak link is still the implementation of the principle of *trust*.

Adolescents are involved in YFHS as volunteers. They want to promote a healthy lifestyle. These teenagers also can make proposals for improvement of the YFHS. They also participate in evaluations of the YFHS.

The concept of youth-friendly health services is more than the health and medical needs common in adolescents. It is more than the medical assistance provided to adolescents and young people. Youth-friendly health services include a whole range of social, psychological, legal,

Table 21.2 Operating efficiency of youth clinics (by score)

Indicator	Assessment			
	Visitors	Staff members	Administrative authorities	Experts
Simplicity of accessing the facility	4.6	4.8	4.8	5.0
Ease of obtaining necessary information	4.7	4.9	5.0	5.0
Possibility of having same-day appointment	4.0	4.5	4.8	4.5
Convenient hours of operation	4.3	4.6	4.7	5.0
Friendly attitude and respect for adolescents	4.6	4.8	4.8	5.0
Personnel's skills to render assistance and support	4.7	4.4	5.0	5.0
Qualification of the YFHS personnel	4.9	4.6	5.0	5.0
Youth involvement in the planning, work, and evaluation of YFHS	3.9	4.1	4.7	4.5

referral, rehabilitation, and other services that young people may need at various periods of their lives, especially when they happen to find themselves in difficult circumstances.

Building Capacity of Healthcare Providers

To further build capacity of service providers, working in the area of adolescent health, the adolescent health Web site for service providers —*adolesmed.szgmu.ru*—was developed and launched in 2008. This is the first Russian Federation methodological Web resource that focuses on issues around adolescent health, including a special section on youth-friendly services. Web site resources include information on an inventory of international and Russian Federation training, "best practice" examples, a user-friendly methodological package for practitioners based on the WHO methodology, and tools for measuring the quality and extent of youth-friendly health services.

Box 6: On-going YFHS Evaluations

The Russian Training and Methodological Center and the Yuventa Center in St. Petersburg carry out monitoring of youth clinics' activities, including surveys of clinic visitors. These ongoing evaluations facilitate the continuous improvement of prevention services provided to adolescents and to evaluate youth-friendly clinics' activities on the whole. To train teams of specialists capable of dealing with YFHS problems, the training and methodological center was established within the Northwestern State Medical University in St. Petersburg and named after I. I. Mechnikov. This training and methodological center is a Russian-based unit of EuTEACH—European Training in Effective Adolescent Care and Health Program (EuTEACH 2015). The center uses new training technologies for CIS (Commonwealth of Independent States) specialists such as simultaneous training of all experts working at a youth clinic as a team of like-minded colleagues. The clinic's efficiency depends largely on its success in selecting and training the staff. Deep professional knowledge does not guarantee successful work with adolescents. YFC professional must know physiology and pathology of adolescents, social pediatrics, and youth sociology; meet personal requirements; and be willing to work with adolescents.

A two-stage training option looks to be the most promising. During the first stage, every specialist receives thorough training

in his/her area of specialization, preferably with the focus on adolescents' age-specific needs. During the second stage, all YFHS professionals (doctors, paramedical personnel, psychologists, sociologists, and preferably lawyers) study together. The objective is to provide targeted comprehensive training, which increases the awareness of issues related to adolescent health care, ability to work with adolescents, and ability to work in a team.

Maintaining Consistency of Initiatives on Medical and Social Services for Adolescents: Unresolved Problems

A clear definition of adolescence as a transition period is needed to better understand and meet the healthcare needs of young people. In present-day Russia, persons between 10 and 18 are formally recognized as adolescents, provided that their regulatory documents indicate "children at the age of adolescence." Application of the term "children at the age of adolescence" in the Russian healthcare system is rather problematic as it actually denies objective existence of adolescents as a clearly defined population. Adolescents are a population with their own specific biologic, medical, and social peculiarities. Adolescence—a period of development when there is an increase in socialization skills, and the formation of individual morals and ethics emerge.

Legal Status During Adolescence

To realize the promised benefits from youth-friendly clinics, it is necessary to formalize in legislation the concept of adolescents as a specific medical and social population group. The fact that in present-day Russia, there is no clear definition of the transition period between childhood and adulthood denies the fact that adolescents have their specific rights, as well as duties and responsibility, including responsibility for their health and social well-being. Lacking legislation, the current legal definition promotes legalized "immaturity" of young people.

Without a clear definition and differentiation of the rights and responsibility of the child and adolescent, further development of adolescent health care may reach a standstill. If the adolescent is considered to be a child, then the resulting assumption is that there is no need to develop youth clinics (i.e., YFHS). In Russia, pediatric health care at a primary level is supposed to ensure universal health coverage to all children. It is implied that any adolescent may apply to the children's polyclinic without any difficulties and receive services free of charge. But the children's polyclinic has no capacities to solve all problems related to adolescent's transition into adulthood, which include formation of his/her reproductive function.

The lack of recognition of the special status of adolescents will hinder the development of new and modern approaches to health care for adolescents (i.e., an approach based on the involvement of adolescents in the strengthening of their own health).

Inadequate cross-sectorial interaction of medical and social services for adolescents and schools in preventive activities needs to improve. Russian schools are noted for their conservatism. Currently, there is a lack of adequate inclusion of healthy lifestyle promotion in education programs. YFHS's personnel are only allowed to conduct primary prevention programs during out-of-school activities, with parents' authorization. Training of volunteer teams from school students with a focus on prevention activities may become an acceptable alternative program to meet the prevention goals. Volunteer student teams trained by YFHS staff using standardized curricula and programing would increase consistency and provide measureable outcome data.

Training of specialists in the area of adolescent medicine needs to improve. In the Russian

Federation, there are 47 medical universities and institutions with a capacity of around 25,000 graduates each year. Although some aspects of adolescent health are covered in pediatric courses, there is no special "adolescent medicine" training course. Opportunities to access postgraduate education in adolescent medicine are also very limited.

There is only one adolescent medicine department in the Russian Federation, based at the Northwestern State Medical University in St. Petersburg. It is named after Ilya Ilyich Mechnikov (in 1908, he and Paul Ehrlich were awarded the Nobel Prize for physiology or medicine for his pioneering work to develop the field of immunity.) This department offers two special courses: "medical and social services for adolescents" (72 academic hours) and "adolescent reproductive health and sexuality" (72 academic hours). Consequently, the majority of the 55,000 pediatricians in the Russian Federation, as well as other medical specialists dealing with adolescents and young people, have extremely limited postgraduate training opportunities in adolescent health (Krotin et al. 2006).

In addition, an effort to improve the adolescent health content in preservice training is needed. WHO recommends that every graduate of a medical school/college should have core competencies in adolescent health and development (WHO 2015). Core competencies include knowledge and skills in basic concepts of adolescent health and development, effective communication skills, and the ability to apply policy and meet quality standards and competencies to effectively manage adolescent clients in specific clinical situations (WHO 2015). As noted above, adolescent health training is not readily available in professional education. Therefore, improving the structure, content, and quality of the adolescent health curricula is very important. Making competency-based education in adolescent healthcare mandatory in preservice curricula and postgraduate education is one of the key actions needed to develop an adolescent health-competent workforce (WHO 2014).

Sustainability Mechanisms for Adolescent Medical and Social Services

Financial Support of Medical and Social Services for Adolescents. The Russian Federation medical system is mostly free and is available to anyone who has the so-called Mandatory Medical Insurance (MMI). The system of MMI covers most of the state medical institutions. Any citizen of the Russian Federation can receive MMI in the district of his/her permanent residence.

In Russia, units for sociomedical assistance to adolescents at children's polyclinics (and at almost all YFHS clinics) are structural units of the state healthcare establishments. This provides the YFHS clinics with a stable system of financing. Change in the economic situation, however, may affect the activity of YFHS to the extent it affects other healthcare establishments.

Belonging to a YFHS in a state healthcare system provides certain advantages: Funds covered by out-of-state budgets and MMI funds are the primary source of financing. Confidence in state-run YFHS clinics and confidence in the quality of services rendered by staff are, in part, based on the state-guaranteed benefits to YFHS employees (i.e., retiring pension, vacation leave, sick pay, and maternity leave).

YFHS may raise extra-budgetary resources from grants, charity funds, and fee-based services. Herewith, new opportunities for extending the sphere of services are available. There are opportunities to get involved in project activities and use new technologies and approaches, and extension of social guarantees for the personnel.

The caveat is funding. The lack of or shortage of financing from MMI alone can reduce the scope of services available to adolescents. For instance, free HIV and STI testing is availabile only within budget financing and is mainly provided by specialized institutions that are not considered attractive by young people. Consequently, the concern is that this arrangement reduces or delays testing.

Vulnerable Adolescents

Among adolescents as a group, there are subgroups of adolescents and young people who are at-risk because of social vulnerability (e.g., commercial sex workers, homeless children and adolescents, and drug users). These are categories of the adolescent population that normally do not visit health institutions. Many of these vulnerable adolescents remain beyond the reach of health services. This is not helped by a MMI policy that makes it difficult to observe the principle of anonymity in dealing with patients who want to be tested for STIs and HIV. Confidentiality is extremely important to adolescents. Testing services can be provided free of charge to patients who present their passport, have an insurance policy, and testify that they are a resident or studying in the district covered by the given institution. In the absence of these documents, services can only be provided on a payment basis. The same factors also reduce the coverage and scope of assistance provided to children from socially disadvantaged populations. These children and adolescents often lack the necessary documents or money and are not covered by district treatment and prevention institutions.

YFHS's Priorities. An analysis of services provided by youth clinics in different regions of Russia shows that the goals of YFHS are at different levels of development. Experience has demonstrated that if the principles of YFHS are followed, adolescents increase their utilization of an YFHS clinic. Adolescents look for health clinics where the staff are friendly, where the staff respect adolescents, and where staff are aware of the health social needs of young people. A priority is to increase fidelity with the YFHS model among youth clinics throughout Russian Federation.

For some, it is remarkable that the clinic's location, its design, and working hours of specialists are not so important for adolescents. Thus, for a youth clinics to succeed, one component is specifically selected and trained personnel that can work with adolescents. Staff who respect the adolescent client are more important than the building or location (Kulikov and Vartanova 2011). The vast majority of Russian adolescents value their health. If required, many adolescents are ready and willing to pay a reasonable fee for additional services, which are not covered by the Program of State Guarantees for Provision of Free Medical Assistance.

Constant Stimulus is Essential for Youth Clinic Development. Results from youth clinics' accreditation documents show that after a few years, some of the YFHS clinics stopped or reduce their focus on adolescent-friendly health principles. The initial enthusiasm and initial interest in the new ideas tend to fade aftertime. Work becomes a routine. Often aftertime, there is little desire to implement new technologies, extend the range of services, or analyze developmental prospects. A weak team component can substantially limit YFHS's effectiveness (Kulikov and Vartanova 2011).

A good youth clinic has to continue to develop. The clinic's stability depends on the presence of a dynamic leader, informal communication with employees, professional growth opportunities, personnel's participation in scientific work and research, and continuous training of the personnel. Client satisfaction may be achieved by initial orientation and ongoing training of personnel. Clinic personnel, even the most qualified, are ready to advance their knowledge and skills.

Establishment of a professional association for YFHS personnel may be a significant source of support for youth clinics. For example, the Association of Youth Services in St. Petersburg unites employees from more than 20 YFHS clinics. The association is aimed at stimulating development of the existing clinics, support, and follow-up of newly established youth services. Members share best practices and cooperate with similar organizations in Russia and abroad, advance training of specialists working with youth clinics, and work on the quality of the

services for youth. The achievements, prospects, and research are discussed at annual conferences of the association.

Ways Forward

Youth-friendly health services are very popular with adolescents. The need to continue to develop promising model for delivering medical and social assistance to the young generation is noted in the Presidential Executive Order No. 761 dated June 1, 2012—National Strategy for Action on Behalf of Children in the years 2012–2017.

Today, the need for YFHS' programs and services has become obvious. The objective to improve the sexual health of adolescents was very successful in the early stages of development. However, at first, the level of abortions and sexually transmitted infections significantly decreased; then, the decline cases of STIs stopped declining and stabilized. This lack of continued progress coincided with the decline of the initial enthusiasm for YFHS clinics, which resulted in less focus on YFHS principles such as adolescent friendly.

Given the current levels of YFHS clinic operation, further improvements of adolescent sexual health will be low-yielding and cost-demanding. Effective primary prevention covering all adolescents is required in order to continue to reduce the number of abortions and cases of STIs. It is more rational to solve this task in educational establishments, such as schools, where youth clinics staff work with educators to promote healthy lifestyles, and provide information and programming about adolescent health.

The reproductive health of adolescents by itself requires more attention. Incidence of gynecological and andrological diseases is still extremely high. There continues to be a high risk for sexual and reproductive health disorders and severe chronic diseases. Moreover, too many adolescents who need medical and social services are not applying to YFHS clinics. Maximum rapport and cooperation of pediatric service and YFHS is required to stabilize the reproductive potential.

Youth clinics that are in-demand, for example, because of adolescent-friendly reproductive health care, not only protect the reproductive health of adolescents but also can attend to all aspects of adolescent medicine. Social services, social and legal support, and programs, for example, promoting responsible parenthood promotion are just some of the services that could be provided at in-demand YFHS centers. This service will improve the general health of adolescents and young people.

A good practice is developing youth clinics that have elements of a youth club in their setups. Today, YFHSs need to be considered by adolescents to be a youth-friendly establishment. If it is, it could be a core for adolescents' socialization.

Reasserting YFHS Principles

Accreditation studies of youth centers showed that kindness is one of the most significant criteria for adolescents, when providing medical care and social services to adolescents. That is why it is important that all personnel working with adolescents receive training about YFHS's philosophy, principles, and goals. In addition to clinical staff, it should be the goal to train all support staff from the record keeper to the unit head.

Today, "confidence" is the YFHS's activity principle that should be treated as a three-party process. It means confidence in the doctor by the adolescent, confidence in the adolescent by the doctor, and confidence of parents in the youth clinics. Operation of youth clinics must be transparent. Parents entrust health of their children to medical personnel and they must be sure that no harm will come to their children.

In the operation of YFHS, it is important to pay a special attention to developing relations with parents' associations and school administrations. It will facilitate transferring a part of prevention work directly into educational establishments. It seems important to develop relations with communities of believers, representatives of

the Russian Orthodox Church, and other religious organizations. In spite of difference of opinions on some problems, a constructive dialogue may and must be developed.

Young Adolescents

These days, not only adolescents between the age of 15 and 18 require attention, but the younger adolescents also need special attention. A particularly alarming situation is observed among adolescents in the group of 10–14-year-olds, according to health behavior in school-aged children (HBSC) study (WHO 2012). While Russian 15-year-old adolescents smoke less and drink less alcohol compared to West European and American peers, Russian 11-year-old adolescents smoke more and drink more alcohol compared to West European and American 11-year-old adolescents. At the same time, in this age-group, there is nobody who is involved in the prevention of risk behavior. Parents do not pay as much attention to them as they pay to their younger-aged children. And, these young adolescents are not yet integrated into the peers' environment. Actually, these adolescents are left to their own devices, which as it turns out are television and the Internet.

The level of psychosocial maladjustment of 11-year-old school children is extremely alarming. Russian adolescents have an extremely low level of satisfaction with life. They are very unsatisfied with school, the training process, and classmates. They have difficulties making friends. They are exposed to violence at school, much more often than young adolescents in other countries. When asked, they also mention serious problems communicating with parents.

It is obvious that school, in particular, must become a main source for the distribution of health services. School activities will also need to include preventive programs, physical exercise, and programs for the psychological and social adaptation of school children. Developing an understanding between teachers and children about a healthy lifestyle will be a good counterbalance to aimless pastimes that are sometimes dangerous to the adolescent's health.

An organization of effective volunteer services at school is necessary to promote a healthy lifestyle among young adolescents. Involvement of young adolescents in modern health protection strategies is indispensable. Youth participation is essential in programs that promote adolescents' health protection, schools promoting health, as well as partnership of youth and adults promoting a healthy lifestyle that is essential (Korsunskiy et al. 2010).

Maximum integration of YFHS and the children's polyclinic into the basic medical and social care departments may be a possible solution that will attract younger adolescents (10–14-year-olds). This change is possible because of the Order of the Ministry of Health of Russia, No. 822n dated November 5, 2013, Procedure of Healthcare Delivery to the Underage including the Period of Training and Education at Educational Establishments and transition of the healthcare system.

Better Financial Protection

A study by WHO found that very often older adolescents do not benefit from financing policies targeted to improve healthcare coverage for children. Adolescents between 18 and 19 years of age are particularly vulnerable (WHO 2014). Similarly, in the Russian Federation, youth over 18 years of age may be also considered as deprived of full-scale access to medical and social services. Youth over 18 years of age may apply at YFHS, if they pay for services. Medical establishments for adults do not provide preventive services for this population group. This is why recognition of adolescents as a special medical and social population group is deemed to be an urgent situation. As a result, children's polyclinics shall be renamed as polyclinics for children and adolescents.

It also seems reasonable to extend adolescent services to include people who are between

18 and 24 years of age. In such a case, establishment of separate medical and social services for youth (for adolescents and youth from the age of 10 to 24) on the basis of cross-sectorial cooperation should be considered (Kulikov 2014).

The priority for developing medical and social assistance should include a number of basic components. Development of a standard training system and curricular for the personnel who work in these units is essential. Mandatory certification of YFHS programs and staff is needed to help insure competence. Establish the all-Russian standard model of YFHS in the medical and social service departments of children's polyclinics. Search for methods to involve youth in the activities of YFHS programs. Continue to incorporate new forms of preventive activities, taking into account the influence of different forms of risk behavior (i.e., smoking, alcohol, drugs, sexual activity, and deviant behavior).

To ensure that adolescents feel comfortable coming to these institutions for help, it is very important to take young people's views into account when setting up YFHS programs. And, it is especially important to collect regular feedback from the clinic's adolescent clients, so as to improve services and activity, and to be sure that the services provided meet adolescents' needs and wants.

Today, YFHS activities comprise elements of a youth club. Furthermore, young people who volunteer work with the staff on these programs, which boost the clinic's appeal to other young people. Each YFHS program should have a room for adolescent socialization and communication, and a hall, which is equipped with video equipment and information materials for prevention of events and trainings. The goals of such clubs include the creation of conditions for personality development and formation of positive approaches to life.

Conclusion

The experience of developing youth-friendly health services in the Russian Federation has proven that adolescents and young people in all regions of the country need medical, social, and psychological services that address the issues specific to their age. Timely provision of these services from qualified professionals is a major factor contributing to the protection of their health. There is a clear and confirmed demand for youth-friendly health services in the Russian Federation and they should be further developed.

The Ministry of Health of the Russian Federation has recognized the value of youth-friendly approaches in delivering age-appropriate services. Furthermore, the ministry has endorsed the guidelines developed for youth-friendly health services. In general, the Russian Federation is incorporating youth-friendly health services into the system of state health care, ensuring their sustainability.

The YFHS model has proven to be cost-effective and flexible. It can easily be integrated into existing medical service infrastructures. Participating medical services are able to become self-financing, either from their inception, or shortly after. Even though no special cost-effectiveness studies have been conducted local health authorities' feedback on investments (needed to launch youth-friendly health services) suggests that the model is efficient and does not require massive financial investments, which increases the attractiveness of YFHS to administrations.

The concept of youth-friendly health services, as it has been formulated and implemented by the Ministry of Health (and partners in cooperation with UNICEF), includes the provision of medical assistance and the provision of the whole range of social, psychological, legal, and referral rehabilitation and other services that young people may need at various periods of their lives, especially when they happen to find themselves in difficult circumstances.

At present, YFHS is expanding the scope of its function by including and widening the social component. For example, YFHS promotes responsible parenthood. They provide young motherhood support. They are working with educational institutions to provide prevention programs that involve young people in their own health protection. In fact, these new forms of

medical and social support contribute both to improvements in health and social well-being and to full-fledged socialization of young people.

There is a strong need to recognize the special medical and social needs of adolescents. Based on these realities, it also becomes important to widen the age parameters for this group. As well, expanding YFHS services by including adolescents of 10–14 years of age and young adults would improve the health and well-being in these groups.

Close cooperation between pediatric, medical, and social services, and incorporation of YFHS principles into routine activities of children polyclinics, is extremely important for improving young people's health care. The priorities should include the establishment of a close working relationship between YFHS and school systems. It is also necessary to initiate a curriculum that addresses the issues of adolescent medicine for medical students and for postgraduate training of all pediatricians. The immediate objectives include more intensive involvement of adolescents in the activities of youth-friendly services and the need to promote healthy lifestyles.

References

Albitsky, V., Ivanova, A., Ilyin, A., & Terletskaya, N. (2010). *Adolescent mortality in the Russian Federation*. Moscow: UNICEF (in Russian).

Baranov, A. A., Kuchma, V. R., Namazova-Baranova, L. S., Sukharev, L. M., Ilyin, A. G., Rapoport, I. K., et al. (2010). The strategy of "adolescent health and development of Russia" (harmonization of European and Russian approaches to the theory and practice of protecting and promoting the health of adolescents). Publisher Scientific Center of Children's Health (in Russian).

EuTEACH (European Training in Effective Adolescent Care and Health). (2015). Retrieved from http://www.unil.ch/euteach/home.html

Federal Scientific and Methodological Center for Prevention and Control of AIDS (2014). Retrieved from http://www.hivrussia.ru/doc/docs.shtml (in Russian).

Federal State Statistics Service, Rosstat. (2014, May 22). Retrieved from http://www.gks.ru/

Ivanova, E., Sabgayda, T., Semenov, V., Antonov, O., Nikitin, S., Evdokushkina, G., & Chernobavsky, M. (2011). *Adolescent mortality due to suicide.* Moscow: UNICEF (in Russian).

Korsunskiy, A. A., Krotin, P. N., Kulikov, A. M., Kuchma, V. R., Namazova–Baranova, L. S., Yakovleva, I. N., et al. (2010). *Youth-friendly health services in the Russian Federation: The initiative, experience, result, cooperation, focus on the future.* Moscow: UNICEF (in Russian). http://libed.ru/knigi-nauka/1137781-1-glava-problemi-sostoyaniya-zdorovya-podrostkov-rossiyskoy-federacii-kliniki-druzhestvennie-podrostkam-molodezhi-r.php

Korsunskiy, A. A., Kulikov, A. M., Yakovleva, I. N., & Vartanova, K. S. (2010). Use of new sociomedical technologies for childrens health care in the Russian Federation. *Rossiyskiy Vestnik Perinatologii Pediatrii*, *55*(5), 98–101 (in Russian).

Krotin, P. N., Kulikov, A. M., & Kozhuhovskaya, T Yu. (2006). *Youth-friendly clinics*. Moscow, UNICEF: Guidelines for doctors and health care administrators.

Kuchma, V. R. (2012). School medicine. Is it necessary today? Medical maintenance of children in educational institutions—the basis of disease prevention and health care for children and adolescents. *School Health,* (1), 3–8 (in Russian).

Kulikov, A. M. (2007). Teenagers in today Russia: Health and medico-social characteristics. *Journal of Obstetrics and gynecological diseases, LVI, S1*, 105–108.

Kulikov, A. M. (2014). Youth-friendly health services—new form of medical and social care for adolescents. *Questions School and University Medicine And Health*, (2), 14–17 (in Russian).

Kulikov, A. M., & Boyeva, V. I. (2003) Social characterization of young people with different grade of risky behavior. *Region: Politics, Economics, Sociology*, (1), 139–140 (in Russian).

Kulikov, A. M., Medvedev, V. P., & Krotin, P. N. (2010). The modern medico-social technology in adolescents and youth health care. *Bulletin Northwestern State Medical University. I.I Mechnikov*, *2*(2), 106–115 (in Russian).

Kulikov, A. M., & Vartanova, K. A. (2011). Evaluation of efficiency of socio-medical care provided at youth-friendly clinics in the Russian Federation. In *16th Congress of the European Union School and University of Medicine and Health EUSUHM-2011*, 124.

Levina, L. I., & Kulikov, A. M. (Ed). (2006). *Adolescent medicine: The guideline* (2nd ed.). St. Petersburg: Peter (in Russian).

MHRF. (2001). *On the experience of YUVENTA counseling and diagnostic center in St. Petersburg in organizing activities aimed at protecting the reproductive health of girls under 18 (reference letter).* Moscow: Ministry of Health of Russian Federation (in Russian).

MHRF. (2013). *Socially significant diseases of the population of Russia in 2012.* Moscow: Ministry of Health of the Russian Federation (in Russian).

MHRF. (2014). *Key indicators of maternal and child health, child welfare service activities and obstetrics in the Russian Federation.* Moscow: Ministry the of Health of Russian Federation (in Russian).

Mikhaylova, J. V., Abramov, A. Y., Tsybulskaya, I. S., Shikina, I. B., Khaliullin, N. I., & Nizamova, E. R. (2014). Increased drug addiction among children, adolescents and the young in Russia. *E-Journal Social aspects of health,* (2). Retrieved from http://vestnik.mednet.ru/content/view/572/30/lang,ru/ (in Russian).

Mirskiy, V. E., Mihaylichenko, V. V., & Zayezjalkin, V. V. (2003). *Children's and adolescent andrology*. Saint-Pe-tersburg: Peter (in Russian).

Sabgayda, T. P., & Okunev, O. B. (2012). Trends of incidence and prevalence for the main classes of diseases among Russian child, adolescent and adult population during the post-soviet period. *E-Journal Social aspects of health, 23* (1). Retrieved from http://vestnik.mednet.ru/content/view/383/30/lang,ru/ (in Russian).

Simbirtseva, L. P. (Ed). (2010). *Stop HIV/AIDS and talk about sexual health*. St. Petersburg: Ostrovityanin Publishing House (in Russian).

Tikhomirov, A., & Sarsaniya, S. (2005). *Modern approaches to the treatment of inflammatory diseases of the female genital organs: The guideline*. Moscow.

TransMonEE. (2014). Database, UNICEF Regional Office for CEE/CIS (released in June 2014) http://www.transmonee.org/. Accessed April 22, 2015.

UNICEF & Rosstat. (2010). *Youth in Russia*. IPC Statistics of Russia (in Russian).

Vartanova, K., Kulikov, A., & Krotin, P. (2010). Russian Federation: youth-friendly health services. In V. Baltag & A. Mathieson (Eds.), *Youth-friendly health policies and services in the European Region. Sharing experiences* (pp. 125–144). World Health Organization. http://www.euro.who.int/__data/assets/pdf_file/0017/123128/E94322.pdf

WHO. (2012). Social determinants of health and well-being among young people: Health Behaviour in School-Aged Children (HBSC) study: international report from the 2009/2010 survey/edited by Candace Currie, et al. (Health Policy for Children and Adolescents; No. 6).

WHO. (2014). Health for the world's adolescents: A second chance in the second decade. Summary. Geneva: World Health Organization. (http://www.who.int/maternal_child_adolescent/topics/adolescence/second-decade/en/. Accessed February 02, 2015).

WHO. (2015). Core competencies in adolescent health and development for primary care providers including a tool to assess the adolescent health and development component in pre-service education. Geneva: World Health Organization. http://apps.who.int/iris/bitstream/10665/148354/1/9789241508315_eng.pdf?ua=1. Accessed February 02, 2015.

Policy Impact of the United Nations Convention on the Rights of the Child on Street Youth and Juvenile Delinquency in Chile

22

Claudia Reyes-Quilodrán, Liliana Guerra-Aburto, Guillermo E. Sanhueza, Hilary Jones and Jorge Delva

Introduction

Chile, a democratic country, bases its legal system on the Civil Law, inspired by Napoleonic Law, in turn informed by Roman Law. On the other hand, the US legal system is based on the Common Law. The Civil Law is a codified legal system that establishes a unitary, orderly, and systematic set of rules and legal principles. The Civil Law commands, for instance, that crimes or civil rights must be explicitly written in order for the judge to decide cases based on these codified provisions. This legal system implies that to implement a public policy, this policy should be based on a codified law, and any legal transformation is required by law (Frase 1990). Many of the laws passed in Chile in the last 15 years have transformed the policies aimed at the well-being of children and adolescents. Therefore, we posit that to understand Chile's approach to the development of public policies that impact children and adolescents, it is necessary to understand the impact of different legal instruments in the Chilean society, such as the United Nations Convention on the Rights of the Child (UNCRC), as well as various laws that have been influenced by the UNCRC.

The purpose of this chapter is to describe and discuss the deep impact that Chile's signing of the United Nations Convention on the Rights of the Child (UNCRC) in 1990 had on the country's policies involving social services for children and adolescents, and for those who come into contact with the juvenile justice system. Despite these progressive policy changes, youth continue to experience a number of problems. In this chapter, we focus on two of these problems by describing the extent to which youth homelessness and juvenile delinquency impact Chilean youth and the larger society.

C. Reyes-Quilodrán · L. Guerra-Aburto
School of Social Work, Pontificia Universidad Católica de Chile, Santiago, Chile
e-mail: claudiar@uc.cl

L. Guerra-Aburto
e-mail: ldguerra@uc.cl

G.E. Sanhueza
School of Social Work, Universidad San Sebastián, Santiago, Chile
e-mail: guillermo.sanhueza@uss.cl

H. Jones
Catholic Community Services of Western Washington, Seattle, USA
e-mail: hillarybjones@hotmail.com

J. Delva (✉)
School of Social Work, University of Michigan, Ann Arbor, USA
e-mail: jdelva@umich.edu

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_22

Chile Signs the United Nations Convention on the Rights of the Child: Policy and Service Delivery Implications

In 1990, Chile signed the United Nations Convention on the Rights of the Child (UNCRC), which sought to profoundly modify the way societies treat and view children socially, culturally, legally, and economically (UNICEF 2004). In Chile, signing the UNCRC had particularly important legal implications for children. Prior to signing the UNCRC, Chilean laws affecting children were based on the premise that these existed to defend and protect minors. There was not, however, a way for the law to distinguish between, for example, a child who needed protection from abuse versus a youth that broke the law. In both cases, the law would allow for deprivation or restriction of freedom and did not have a time limit on the sentence, and despite their differences, cases were seen by the same courts. Furthermore, the child did not have the ability to exercise his/her rights, because the child had no rights.

The Judge for children and adolescents practiced in Minors Courts, played a parental role, and was the person who decided what was best for the child. In fact, children and adolescents were understood as "objects of rights" versus "subjects with rights" (Oyarzún et al. 2008). That is, under an "objects of rights" perspective, workers in the social services and judicial systems saw the need to interpret the children's needs and opinions by an adult who then determined what needed to be done with the child. This perspective placed children's voices in a passive and irrelevant position in legal proceedings. At the time, children in the legal system were referred to as "minors in irregular situations" whereby the authorities needed to look after the well-being of the child. With the signing of the UNCRC, this concept was criticized and authorities were called upon to envision children in terms of "subjects of rights." Under the "subjects of rights" perspective, children are to be considered people, not objects, and may therefore exercise rights, and perhaps more importantly, society must ensure that their rights are maintained. As a result of these discussions, suggestions were made to create Family Courts with the expectation that the children would not only have rights but also that the law would look after the family as a whole as opposed to disparate individuals with compartmentalized problems.

Family Courts, however, were not created until 2006. This means that up until only a decade ago, matters such as divorce, family violence, adoption, abuse, and parental visitation, for example, were seen by different courts, such as Civil Courts and Minors Courts. This meant that children and their families experiencing some or all of these problems had to present themselves to different judges and regularly had to tell their stories and relieve the pain of their experiences. Furthermore, different judges handling the different problems could, and actually would, make decisions that were contradictory further tearing families apart. Finally, in 2006, Law No. 19.968 (Biblioteca del Congreso Nacional de Chile [BCN] 2016a) was passed, which created Family Courts. The purpose of Family Courts was to ensure that all of the children's matters would be attended by considering the family as a whole. In addition, under this new legal approach, the term "minor" was no longer used. Instead, the individual became to be referred to as "child" or "adolescent," language that is more consistent with the UNCRC framework.

Legal changes did not stop in 2006. In 2007, Chile implemented Law No. 20.084 (BCN 2016b), which created a new legal system and programs for youth whose rights have been violated versus those who break the law. Family Courts continued their responsibility on civil matters that affected families including attending infants, children, and adolescents whose rights have been violated. On the other hand, youth between 14 and 17 years of age who broke the law would be seen by the Criminal Courts (*Juzgados de Garantía*, in Spanish) in a room specifically set aside for juveniles. The new law transferred the responsibility of 14- to 17-year-old youth who broke the law to the criminal juvenile system and

recognized the youth as "subjects of rights" where the punishment is "based on the principles of equality and protection, the different legal and social situations of the adolescent's life and as a person in the process of development becoming worthy of greater legal protection of their rights" (Berríos 2011, p. 164). Prior to Law No. 20.084, older adolescents were treated as adults and therefore in a more punitive manner. That is to say, adolescents who committed a crime would be sent to Minors Court (later on called Family Court) at which time the judge would decide on the youth based on an analysis conducted by a psychologist regarding the extent to which the youth had acted with discernment or his/her ability to use good judgment. The concept of discernment was applied exclusively to adolescents between the ages of 16 and 17, where the rest of the children who were under the age of 16 were considered unfit to plead (or punish); that is, they were not responsible before the law.

If it was determined that an adolescent had acted with discernment, the adolescent would be processed through the adult criminal justice system and the case would be sent to the Adult Criminal Court. In cases where it was determined that the adolescent had acted without discernment, the adolescents was sent to a juvenile detention center or probation program. One of the serious deficiencies of this system is that juveniles could not count on having a public defender, so the case would fall into the hands of the Family Judge who would determine the sentence. Moreover, detention centers and probation programs did not have clear and uniform guidelines regarding the type of intervention for the juvenile. This lack of uniform guidelines resulted in considerable variation between adolescents with similar cases. Therefore, new legal reforms came to provide solutions to these problems.

Social Services for Children and Adolescents After UNCRC

Chile has approximately 16,634,603 habitants (INE 2012) where 26 % are children between 0 and 17 years of age. Only about 2.2 % of the children are in the child welfare and juvenile justice programs. The National Service of Minors (SENAME or Servicio Nacional de Menores, in Spanish) is a state agency that was created in 1979, under the Ministry of Justice, and is in charge of financing and supervising the child welfare and juvenile offenders' programs. Its mission is to "contribute to the promotion, protection, and restitution of children and adolescents whose rights have been violated, as well as accountability and social reinsertion of adolescents who violated the law through programs directly implemented or through service agency collaborators" (SENAME 2016). SENAME's mission involves three areas: (1) Area of Protection of Rights (Law No. 16.618) (BCN 2016c) is in charge of advocacy, protection, and restitution of children and adolescents whose rights have been violated; (2) Area of Adoptions (Law No. 19.620) (BCN 2016d) is responsible for matters involving adoptions; (3) Area of Juvenile Justice (Law No. 20.084) (BCN 2016b) is responsible for the accountability and social reintegration for juvenile offenders. Each department seeks to enforce the laws that are related to their particular area of responsibility.

SENAME serves over 93,000 children and adolescents of which approximately 15 % corresponds to law violators and the remaining 85 % corresponds to those whose rights were violated (SENAME 2014). SENAME funds, through grants, private nonprofit organizations to provide services to these youth. SENAME itself has 19 detention centers, 17 semi-closed centers, and 6 centers of specialized reparation. In other words, the state of Chile has outsourced and left in the hands of private companies the care and supervision of children and adolescents—whose rights have been violated. This includes precautionary measures with adolescents who have violated the law and are under probation or community services.

Today, SENAME's structure defines two main approaches to attend to the childhood and adolescent social demands based on the two groups: Children whose rights have been violated (e.g., child abuses, youth homeless) and adolescent who have broken the law. SENAME has the

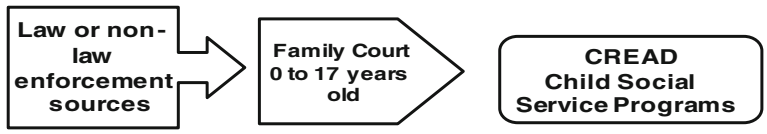


Fig. 22.1 Case flow diagram of child social services Law 16,618

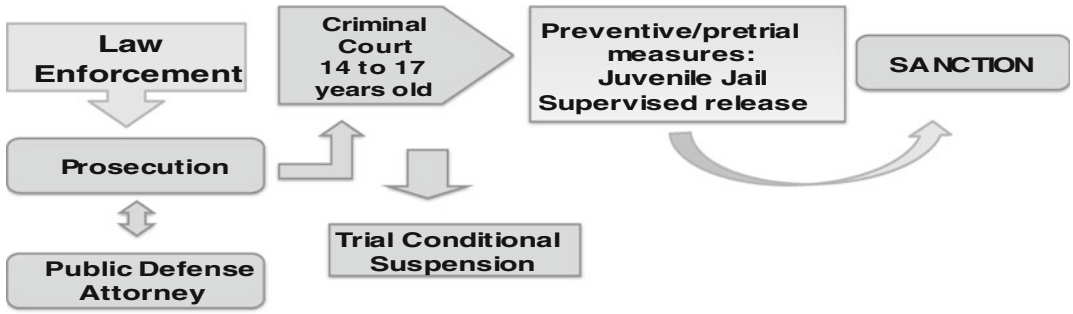


Fig. 22.2 Case flow diagram of juvenile justice system Law 20,084

direct administration of CREAD; however, most of the child protection programs are only supervised by SENAME, because these programs are run by nonprofit agencies. Different laws and different courts cover these two groups of children and adolescents. Figure 22.1 displays the current flow of a child or adolescent through the social service system in Chile.

In the last 10 years, Chile has faced deep changes in the legal system and the ways by which the state understands children and adolescents' needs. Nevertheless, these transformations have not been sufficient to prevent children and adolescents from experiencing significant problems. Figure 22.2 shows the corresponding flow through criminal judicial system of a child or adolescent who breaks the law. Youth homelessness and juvenile crime are two such problems that we discuss next.

Youth Homelessness in Chile

According to UNICEF, in 2006 there were 40 million homeless youth in Latin America (UNICEF 2006). In Chile, in 2004, the SENAME published a study that estimated there were 1039 homeless youth in the country (SENAME 2004); the majority are found in the Metropolitan Region (where the capital, Santiago, is located). In a 2013 study conducted by the Metropolitan Observatory for Street Children and Youngsters in Santiago, Chile, approximately 785 youth were identified to be living on the streets, 303 in the capital, Santiago (Águila 2011; Pino 2013; Valenzuela Vergara et al. 2013). The first step in acknowledging and identifying these street youth is to have a standard definition of what the term "street youth" signifies. In 1983, a group of Inter-NGOs in Switzerland classified the most commonly used definition of "street youth" (Dryjanska 2014). Their definition states that a street child or youth is "any girl or boy who has not reached adulthood, for whom the street (in the broadest sense of the word, including unoccupied dwellings, wasteland) has become her or his habitual abode and/or sources of livelihood and who is inadequately protected, supervised, or directed by responsible adults" (Valenzuela Vergara et al. 2013). While this definition serves a broad purpose for defining street youth, many have contested this definition for its lack of acknowledgment on the child's ability to choose his or her own path of life. Furthermore, standard definitions have distinctly separated "children on the street" from "children of the street." "Children on the street" refers to those who earn their living on the

street, through begging or various forms of work, but return to their families at night; on the other hand, "children of the street" are those homeless children who both earn their living on the street and sleep in the streets, while not relying on their family for any form of assistance (UNICEF 2007).

In Chile, nearly half of all street youth maintain daily contact with their families but still sleep on the streets. While these children remain in contact with their family members, the family typically does not offer the youth much protection or assistance. Interestingly, street youth will often return to the family home when important events arise, such as a baptism or graduation (Pino 2013; Valenzuela Vergara et al. 2013). Because of this phenomenon, the Metropolitan Observatory for Street Children and Youngsters in Santiago, Chile, which oversees outreach to these youth throughout the country, has agreed to use the definition that states, "a child or adolescent who lives on the street as one who spends the night on the street at least four times per month" (Valenzuela Vergara et al. 2013).

The outward appearance of street youth does not fit the stereotypical image of a homeless youth (Pino 2013). They are hard to distinguish from other children because they try to wear nice clothing in order to escape discrimination (Águila 2011). Nor do these children often sleep in one specific area of the streets. For example, 51 % of the youth surveyed slept in more than one place over the last month, including friends' homes and abandoned houses, or stores on the sides of highways (Águila 2011). Roughly 74 % spent at least one night in their own home in the past month, while only 26 of the 303 children spent more than 15 days of the past month sleeping on the street (Pino 2013; Valenzuela Vergara et al. 2013).

Half of street youth left their homes due to experiencing abuse with 14 % experiencing sexual abuse within the home (Pino 2013; Valenzuela Vergara et al. 2013). Other reasons include emotional and economic deprivation, absence of a caregiver, discrimination in the family, occurrence of a traumatic family incident, or a process of identification with peer drug users (Valenzuela Vergara et al. 2013). Specifically, many of the children leave their homes as a form of escape from what they experience on a daily basis.

Most homeless youth are 14–17 years of age and male (66 %). About 35.5 % of this population comes from single parent households (majority consisting of a single mother) and 18.5 % from two parent households. Roughly 64 % have 1–3 siblings and 35 % 4 or more siblings. Interestingly, 81 % of these siblings are not homeless (SENAME 2004). Homeless youth have much less education than non-homeless youth. This is of great concern given that with less education there exists a higher probability that the young person will commit theft, be vulnerable to commercial sexual exploitation, and will engage in begging to survive (Ossa 2005). In this population, school dropouts occur mostly between 12 and 14 years of age, with a higher percentage in 5th and 6th grades. Only 36.5 % of homeless youth are connected to the educational system (Ministry of Justice 2014). The consumption of drugs is also a common occurrence in this population. More than 50 % of homeless youth who were provided services by specialized programs consumed marijuana and alcohol; 20 % pasta base (an unprocessed form of cocaine), and 12 % consume solvents, inhalants, and/or cocaine (Ministry of Justice 2014).

If we compare the numbers of registered homeless youth in Chile to those of other Latin American countries, the incidence of homeless youth in Chile is small. Nevertheless, the smaller magnitude of the problem does not reduce its complexity or the pain that these youth experience (Méndez 2010). The situation of homeless youth involves various dimensions so that any attempts to create a common profile would only result in confusion (Lucchini 1996; Méndez 2010). Studies on the subject tend to associate the homeless situation with normal living standards that are progressively deteriorating both in families and in the communities that children live in. Additionally, the existence of social protection systems, which have not developed at the required speed in order to deal with the social contact, and an uncertain economy makes very difficult for the children and their families (Alexandrescu 2002). Moreover, they are

vulnerable to all forms of exploitation and bad treatment. For these adolescents and their families, it is a situation of social exclusion. Consequently, fundamental services such as education and health care are currently not equipped to serve and support these families and adolescents. Thus, these adolescents cannot be easily protected, which threatens their capacity to fully participate as members of society. The exclusion of these children can come from their families, the school, the community, the government, civil society, the media, and the private sector (UNICEF 2006). The characterization of this population suggests that homeless youth tend to have low self-confidence and are impulsive and distrustful. They are, however, adolescents who quickly develop the skills to survive on the streets (Méndez 2010).

Often times, the resentment that develops from this level of deprivation and inequality aggravates feelings of violence, which results in aggressive behavior. These adolescents show a tendency of being emotionally unstable and, on occasion, depressed. Frequently they utilize their fantasy, boosted by the use of drugs and alcohol, as a way of avoiding reality; nonetheless, and despite the harm to their physical and psychological health, they have a high capacity to recover from their problems. Nevertheless to better understand their situation, descriptions of these children and adolescents must be read having the contextual elements in which the children have developed in their previous stages, and the limited opportunities they have had to resolve crisis in their young lives (Guerra 2010).

The problem of these homeless youth is a result of social marginalization (Mansilla 1989). Homeless youth have made the streets their primary habitat, having cut or significantly reduced ties with their family. In some cases, their families have abandoned these children. In other cases, they are subjects of a process of self-expulsion, which is to say, they have decided to leave their homes because they have been pushed or forced out because of specific circumstances (Ordóñez 1995). It has been found that in these children's homes, there is a lack of basic living necessities (e.g., food, water, shelter, clothing). If the family cannot provide the necessary support to maintain the family, it is conceivable to imagine that the child would perceive life in the street as being better than home. For these children, their family of origin represents a "no place," a space in which the internal dynamics, structure, and conformations make live unbearable for the adolescent and a place where they no longer wish to be (SENAME 2004; Ordoñez 1995). Not all children, however, with similar stories decide to leave their homes; making the decision of self-expulsion depends on the individual characteristics of each child and how they perceive their situation (Méndez 2010).

The family system of the homeless child is often characterized by high levels of conflict; sexual, physical and emotional abuse, economic insecurity, substance abuse by parents, separation, and lack of communication. In general, homeless children's families present characteristics of life situations that are complex and fitting a definition of "multiple problem families." The social context in which they are immersed are characterized by psychosocial risk factors and chronic sociocultural deprivation, which reinforces the cycle of marginalization. The crisis that these families are in is mainly marked by situations of economic and cultural poverty.

It should be noted that a child does not go out into the street overnight. The steps taken when moving from the house to the street suppose a process where there is a combination of diverse characteristics: (a) family difficulties; (b) the spatial/social movement of the family or residential changes; (c) characteristics of the urban space which means the distance between the home and the place where the child spends the day and the efficiency and cost of public transportation; (d) street pressures (meaning the dangers and possibilities of survival in the presence of other children); (e) the initiative of the child and the balance of their experience in the street; and finally (f) the relationship with the street and the image the child has of the street, which is not the same in every society, cultures, and social layers. For the homeless youth, this is a component of their everyday life (Guerra 2010; Lucchini 1996; Guerra et al. 2011).

Because poverty, history of abuse, and school failure are associated with drug use, it is important to adequately diagnose the level of drug consumption by homeless youth given the drug's effects on the central nervous system. For instance, the chronic use of inhalants, which continues into adulthood, causes medical and psychiatric damage. The consumption of drugs is a product of situations of social stress, emotional and contextual, and encouraged by peer pressure. The circumstances form a group of reference, which is really strong for homeless youth, especially in the setting where the family bonds are absent and the need for mutual defense and protection is high. Use inhalation in a group of peers strengthens their bonds and confirms their sense of belonging. Although the consumption of drugs forms part of the practices utilized by the homeless children, according to Lucchini (1996), "it would be foolish to underestimate the playful dimensions and the challenge to adults who have the collective consumption," meaning the consumption of drugs as a practice is also used to affirm their collective identity and as the means of social integration into the group (Forselledo 2001).

Lastly, it is important to emphasize that this group is generally vulnerable to sexually transmitted diseases, a product of the consumption of drugs and unprotected sexual activity used as a mechanism for survival (Ossa 2005; Rew and Horner 2003). Commercial sex is a way to obtain refuge, food, drugs, and money. The possibility that the youth have participated in sexual activities increases when they have been victims of physical and sexual abuse, when they have been a part of criminal acts, and present with suicide attempts. Investigation suggests that the majority of homeless youth have been victims/survivors of sexual violence in multiple occasions while being in the streets, showing up more frequently with women (Kudrati et al. 2008).

Specialized Programs for Homeless Youth

The state's answer to this societal problem has been to create specialized programs for the protection of homeless youth as established by Article 4 of Law No. 20.032 (BCN 2016e). These programs are directed to design interventions to repair the harm these youth have experienced. In the case of homeless youth, it is SENAME that is responsible for generating policies that affect them. Presently, homeless youth are cared through seven specialized programs, six of which are located in the Metropolitan Region and one in the Region of los Lagos, south of Chile. The rest of the attention to homeless youth is provided by non-governmental organizations.

Programs aimed at homeless youth focus on the implementation of family prevention techniques within the homes of high-risk youth to finding those youth already on the streets more stable living situations. Since its institution in 2007, the Metropolitan Observatory for Street Children and Youngsters has organized and unified multiple organizations throughout Chile to focus on improving the living conditions of the country's street youth. Some of these organizations include the state agencies and nonprofit private organizations (Pino 2013; SENAME 2014). Under the direction of the Metropolitan Observatory for Street Youth, these organizations have combined to provide a unified effort toward decreasing the prevalence of street youth throughout Chile. Their focus is not only on helping youth already living on the street, but also on providing families with tools to prevent youth from seeking refuge on the street.

In the public governmental sector, the two entities involved with the Observatory include the National Minors Service (SENAME) and the Ministry for Social Development (Valenzuela Vergara et al. 2013; SENAME 2014). Both

organizations keep the well-being of the disadvantaged at the forefront of their work in the Chilean society. Within SENAME, the Rights Protection Offices work with the idea to cultivate a culture within Chilean society that recognizes and respects the rights of childhood (SENAME 2014). Similarly, the Ministry of Social Development includes a mission statement that desires to contribute to the design and application of policies and programs regarding social development, especially those designated to eradicate poverty and offer social protection to vulnerable people and groups, while promoting their social mobility and integration ("Nuestra Misión"). Each of the entities involved with the Metropolitan Observatory for Street Children seeks to protect those most vulnerable in the society to a high standard, and for this, they are well suited for developing and maintaining an effective intervention to lower the rates and stop the growth of the street youth population throughout Chile.

Within the non-governmental organizations (NGOs), the following organizations have joined the movement with the Metropolitan Observatory for Street Children: Hogar de Cristo Foundation, Don Bosco Foundation, SERPAJ, and the Asociación Chilena Pro Naciones Unidas (ACHNU) (Valenzuela Vergara et al. 2013). Each of these organizations has a common theme of dedicating their work to the development and advocacy of vulnerable and impoverished populations in Chile (Nonprofit Enterprise and Self-sustainability Team, NESsT 2000; Salesian Missions 2013; SERPAJ Chile 2015). For instance, Hogar de Cristo maintains the mission statement of providing assistance to the marginal poor, including abandoned children and youth (Nonprofit Enterprise and Self-sustainability Team, NESsT 2000). Specifically for their programs for abandoned children and youth, Hogar de Cristo contracts with the national government, SENAME, to offset the cost of its programs provided for 1385 children. Hogar de Cristo gives the homeless and abandoned children served through their programs shelter, food, clothing, and education (Nonprofit Enterprise and Self-sustainability Team, NESsT 2000). The NGO SERPAJ promotes the promotion and defense of peace and human rights through using the methodology of Active Nonviolence for the Resolution of Conflicts, as well as guaranteeing the dignity, justice, and liberty of people, especially those who are marginalized and impoverished (SERPAJ CHILE 2015). For those children who have experienced the devastating impacts of trauma, Don Bosco Foundation provides counseling, meals, housing, and schooling (Salesian Missions 2013).

Many of the organizations listed above work directly with street youth, specifically NGOs that provide services to street youth on a daily basis. For example, Hogar de Cristo, located in Santiago, offers numerous programs for vulnerable adults and children, and they offer specific programs for those children at risk of living on streets (Hogar de Cristo 2011; Nonprofit Enterprise and Self-sustainability Team, NESsT 2000). They especially focus on the prevention of violence and abuse against children. Of the various programs they offer, many ate intended to stabilizing the life of a child living on the streets including a foster care program, a community-based prevention program that includes sports, arts, and the whole family, as well as a crisis intervention program. Lastly, as a direct outreach to the street youth themselves, Hogar de Cristo seeks to end their stay on the streets by promoting their rights and developing their protective factors. Hogar de Cristo looks to provide a child with a stable home life, preferably in their family and community of origin in order to give them a more healthy development within the same networks in which they grew up.

Similar to Hogar de Cristo, the Don Bosco Foundation of Chile seeks to help families recover from traumatic situations they have encountered, while many of the programs have the goal of keeping street youth unified with their families (Salesian Missions 2013). The Don Bosco Foundation is a nonprofit organization that stems from the Salesian Congregation of Chile (Flores et al. 2009). The Foundation works directly with high-risk youth and families dealing with high vulnerability or social exclusion. Many of the children in the programs offered by the organization have issues with drugs or parental

instability and violence and have most likely spent some time living on the streets (Flores et al. 2009).

The Don Bosco Foundation offers eleven different programs intended to help stabilize and maintain the family structure. Among these programs are family counseling opportunities, regular meals, housing, and schooling for the children so the families have a foundation on which to rebuild their lives after the traumatic event (Salesian Missions 2013). Many of the families involved in the programs are of high risk who may have the possibility of losing their children to life on the streets (Flores et al. 2009). The Foundation also distributes between 1000 and 2000 meals per month in the school system for youth most in need. For the street youth specifically, the organization runs three houses throughout the metropolitan area that house and feed approximately 120 children and youth every month. The Don Bosco Foundation has a strong presence in the metropolitan community and is well recognized for its work with disadvantaged, high-risk families and street youth.

As the final example of a direct practice organization working with street youth in Santiago, Chile, the ACHNU or the Chilean Association for the United Nations provides a strong network of programs that reach out to street youth in the area. This organization hopes that in addition to providing services for the street youth, they can help reconceptualize the meaning of the term "street youth" (Asociación Chilena Pro Naciones Unidas 2014). By changing the term from "niños de situación de la calle" (children in street situation) to "niños callejeros" (street children), the organization feels they are better able to embody the difficulties faced by the children and their families on a daily basis without the negative connotation of the previous term. The goal of the organization is to protect, promote, and defend the rights of youth in Santiago according to the standards set by the United Nations.

As for programs offered by ACHNU, it offers a wide variety of programs for at-risk youth and youth living on the streets aimed at protecting the rights of youth by intervening on unhealthy family dysfunction that may be causing the youth to flee to the streets (Asociación Chilena Pro Naciones Unidas 2014). ACHNU offers family development programs that teach parenting skills as well as looks to rebuild the familial bond between parent and youth. Furthermore, for children and youth who no longer have a network of people to return to after life on the streets, the organization attempts to help them build a network within the local community so they can eventually achieve an independent lifestyle of autonomy. Within the community, ACHNU works to strengthen and build up the local resources and programs that affect street youth. These help to strengthen the protective factors surrounding a youth's success in society (Asociación Chilena Pro Naciones Unidas 2014). Lastly, in November of 2014, ACHNU partnered with Nokia to implement a program titled "Conéctate" ("Connect Yourself" in English) (Nokia 2014). The Conéctate program works with young people who have limited resources to help them "find employment and reach their potential" (Nokia 2014). With this program, in addition to those directly aimed at improving the situations of the street youth, ACHNU has the capacity to reach a large number of street youth in the Santiago area, while also helping to develop the local resources and organizations to give them hope for a better future.

Youth Violence and Delinquency in Latin America and Chile as Public Health Problem

According to the 2013 United Nations against Drug and Crime (UNODC) report, violence lead the causes of death among persons between 15 and 44 years of age in Latin America, committing close to 157,000 murders a year, occupying a sad first place as the most violent region on the planet. The majority of these deaths occurred in cities and was the result of interpersonal violence (not of armed conflicts or guerrilla warfare). When examining the 2013 homicide rates (most recently available data for most countries in Latin America) (amount/number of homicides per every 100,000 residents), the country with the

largest rate was Honduras with 84 deaths for every 100,000 residents, followed by Guatemala and Venezuela (each 40/100,000), Belize (45/100,000; 2012 data), and El Salvador (39.8/100,000). In contrast, Chile reported 3.6 deaths for every 100,000 residents (United Nations Office on Drugs and Crime 2015 [UNODC]).

According to the Pan-American Health Organization, a "normal" crime rate varies between 0 and 5 homicides for every 100,000 residents; a "sensitive" rate would be between 5 and 8 homicides for every 100,000; and an "epidemic" rate would exceed 8 (Kliksberg 2007). From this perspective, the situation in Latin America is critical and indicates an epidemic problem of homicides and regional crime. Even though intra-regional variations exist, when the levels of violence, crime, and rates of homicide are reported, it is possible to confirm that the violence and crime are important health problems in Latin America. According to the Regional Human Development Report 2013–2014 (PNUD 2013), Chile is listed as the country with the lowest homicide rates in the region and low levels of victimization by theft. A discussion of the between-country differences that may explain these differing rates of violence in general, and homicides in particular, is beyond the scope of this chapter.

Social Violence and Social Exclusion and Its Impact on the Chilean Youth

Although the magnitude of crime and violence can be estimated by the "rate of homicides," this indicator fails to show how violence has been established in the region and how it is a part of the everyday life in large urban Latin American landscapes. The urban growth process and modernizations performed by governments in Latin America during the 1980s and 1990s, of which Chile did not escape, primarily impacted youth and adolescents (Imbusch et al. 2011), through underemployment, lack of social network, mistrust, and illegal drug trade (Auyero et al. 2014). Although those who were adolescents during those years have grown and become adults, the impact of that time has resulted in a generation of marginalized neighborhoods and a legacy of deteriorating living conditions.

Now, Chile is one of the countries in Latin America where the problem of violence and crime are of a lower magnitude: according to UNODC, Chile is found within the countries of the region with the lowest homicide rates (3.1 per 100,000) (UNODC 2013). As well, when juvenile delinquency is measured in numbers or arrest for minors versus the total number of detentions, it does not have disproportionate quantities; according to data from the District Attorney's Office, there were 13,914 detention or juvenile offender, which represent less than 10 % of total detentions in the country. Statistics from 2014 show that 49,131 juvenile offenders were entered in the Attorney General's Office, fined under Law 20.084, which reflects a decrease of 5 % when compared to rates of 2013 which were 51,273 (Defensoría Penal Pública 2013, 2014).

When Chile addressed juvenile delinquency prevention, they have done so by prioritizing universal prevention strategies (Blanco and Varela 2011), which have resulted in being less progressive since less than 1 % of the youth population under 18 years of age has been in conflict with the law. On the contrary, studies in developing countries and in Chile have demonstrated that juvenile offenders usually come from families that have experimented socioeconomic struggles and that live in precarious urban areas with high-risk factors (Farrington 1997) and thus strategies focused on prevention could be more effective in preventing juvenile delinquency.

As previously mentioned, the ratification of the UNCRC forced the Chilean authorities to revise the laws concerning infancy, childhood, and adolescence to reflect a model where the penal code for youth emphasizes minimum intervention and maximum social well-being. This aspect implies that once the youth is arrested, the public prosecutor presents charges in the Criminal Court in a specialized room for juvenile offenders. According to the law, this room should have a judge, public prosecutor, and defense attorney

specialized in juvenile crime. Unfortunately, the caseload has prevented this principle from being fully implemented and most of the time the juveniles face regular judges from the Adult Criminal Court (Santibáñez and Alarcón 2009). This shortcoming turns more complex when the youth characteristics are examined, because these adolescents are affected by several psychosocial problems. Most juvenile offenders have been expulsed from school, present with 3–4 years of school delay, and consume drugs and/or alcohol (Reyes 2014; Instituto de Sociología 2007; Mettifogo and Sepulveda 2005). The most painful aspect is that 7 out of 10 children, who are in juvenile prison, have been victims of child abuse (Reyes 2014). Moreover, the actual juvenile criminal system, like the adult system, focuses on the seriousness of the crime and prior records to apply sanctions, regardless of the psychosocial needs of the adolescents. Judges from Criminal Courts do not have a psychosocial team that provides them with advice about the adequate sentence for the youth as the judges from Family Courts have. Sadly, the criminal juvenile justice system does not consider the youth psychosocial needs in the sentence.

The same law indicates where the juveniles must serve their punishment ordered by the Criminal Court, which can be juvenile detention centers, centers semi-closed, and probation programs. The most severe sentence cannot exceed 10-year prison term. In probation modality, there are regular probation programs, special probation programs, community service, and alternative release. SENAME is responsible for the direct management/administration for only the closed and semi-closed centers in the country. Youth who must serve their sentence in a probation program of an ambulatory nature must do so under programs run by private nonprofit organizations. These instances are monitored and funded by SENAME.

When reviewing the technical guidelines issued by SENAME, its suggested interventions lack specificity based on the characteristics of the juvenile delinquent population. For example, there is no differentiation between a youth who perpetuates sexual abuse from a youth who gets arrested shoplifting. Neither do the guidelines explain the difference between intervening with a youth with severe psychiatric disorders from one who does not present with mental health problems of such magnitude. The intervention for a youth who has committed a homicide does not seem to vary much from those for juveniles who commit other crimes. Attention to sex and gender issues is also practically nonexisting even though the circumstances under which male and female adolescents commit crimes differ (Larrain et al. 2006; Reyes 2014). The lack of specialized knowledge implies the adoption of a model of intervention without the technical or scientific knowledge that supports it. This means that during the time the law has been implemented it has relied significantly less on technical expertise and more on political wills and as such lacks a long-term vision.

Discussion

SENAME's division into each legal body has influenced how in administrative terms issues that affect childhood and infancy are addressed which has been through a compartmentalized vision about the social problems that affect families. Although children are visualized in a familial context, the intervention focuses on the children and adolescents and not the whole family. A clear example can be seen in the case of family violence where programs focus on the partners and not on the child abuse that exists within the family dynamic. In this context, the adults are on one side, mainly the women, who might receive psychosocial support, whereas the children may or may not receive attention from specialized programs offered by the SENAME. This occurs because for children to receive services, an order from Family Court is needed. Furthermore, while the victims may receive services from these programs, programs tailored to perpetrators are practically nonexistent. And while experts on family violence state that domestic violence is a relationship problem that affects each and every family member, public policy responds by offering care that is split

among family members rather than comprehensive holistic care for the whole family.

SENAME's compartmentalization has resulted in lack of communication among its entities with a corresponding gap in knowledge and in interventions to prevent at-risk youth from engaging in risky behaviors. The absence of dialogue within the same service is even worse when it comes to communicating with other governmental entities.

Unfortunately, the country has undertaken a palliative approach toward addressing problems children experience. Families are clearly alone in the educational process and upbringing of their children, and feel strongly criticized by public authorities when they seek help. This is not the best approach to take when the complexity of juvenile delinquency and youth homeless require that agents/workers from different entities, the public and private systems, collaborate to successfully reduce violence and help families with the social reintegration of the adolescent.

Only in 2014 did SENAME obtain funding to provide specialized training to vocational personnel yet there still is a lack of appropriate infrastructure that would allow the adequate implementation of programs as required by law. Sadly, 4 of each 10 juveniles that completed their sentence in closed centers, semi-closed centers, and probation programs received a new penalty by the justice department within the 12 months of their graduation (Espinoza et al. 2012).

Conclusion

The UNCRC produced profound legislative changes in Chile, which overtime has contributed to deep changes in public policy for children and adolescents. However, as we show in this chapter, despite these changes, many social problems affecting Chilean children and their families remain to be properly addressed. In the Chilean culture, it is expected that families are able to solve their own problems resulting in circumstances where the most vulnerable social groups are overstressed with the demands of caring for their children while also facing considerable economic challenges. Today, Law No. 20.084 (juvenile offenders) and Law No. 16.618 (child rights protection) are under review. We expect legal modifications will include the biopsychosocial approaches to understand the complexity of the youth behavior to guide their social reintegration.

References

Águila, F. (2011, October 4). Encuesta revela que 12.423 chilenos viven en situación de calle. [Survey reveals that 12,423 Chileans live on the streets.] Retrieved from http://www.emol.com/noticias/nacional/2011/10/04/506446/encuesta-revela-que-12423-personas-viven-en-las-calles-del-pais.html

Alexandrescu, G. (2002). *Romania. Working street children in Bucharest: A rapid assessment*. *International Labour Organization*. Geneva: International Programme on the elimination of child labour.

Asociación Chilena Pro Naciones Unidas. (2014). Asociación Chilena Pro Naciones. [Chilean Association pro United Nations.] Retrieved from http://www.achnu.cl/la-institucion/

Auyero, J., De Lara, A. B., & Berti, M. F. (2014). Violence and the state at the urban margins. *Journal of Contemporary Ethnography, 43*(1), 94–116.

Berríos, G. (2011). La ley de Responsabilidad Penal del Adolescente como Sistema de Justicia: Análisis y Propuestas [Law on Adolscents' Penal Responsibility as a justice system: analysis and propositions]. *Revista Política Criminal, 6*, 163–191. Retrieved from http://www.politicacriminal.cl/Vol_06/n_11/Vol6N11A6.pdf

Biblioteca del Congreso Nacional de Chile [BCN]. (2016a). Ley 19.968 que Crea los Tribunales de Familia [Law 19.968 that created Family Courts]. Retrieved from http://bcn.cl/1lzdm

Biblioteca del Congreso Nacional de Chile [BCN]. (2016b). Ley 20.084 de Responsabilidad Penal Adolescente [Law 20.084 on Adolescents' Penal Responsibility]. Retrieved from http://bcn.cl/1m0pj

Biblioteca del Congreso Nacional de Chile [BCN]. (2016c). Ley 16.618 de Menores. [Law 16.618 about minors]. Retrieved from http://bcn.cl/1m140

Biblioteca del Congreso Nacional de Chile [BCN]. (2016d). Ley sobre Adopción de Menores [Law on Adoption of Minors]. Retrieved from http://bcn.cl/1lyo3

Biblioteca del Congreso Nacional [BCN]. (2016e). Ley que establece Sistema de Protección a la Niñez y Adolescencia a través de la red de colaboradores del Sename [Law that establishes the National System of Protection of Children and Adolescents through Sename's collaboration network]. Retrieved from http://bcn.cl/1m4rk

Blanco, J., & Varela, J. (2011). Delincuencia Juvenil, Violencia y Desafíos para los Programas de Intervención [Youth Delinquency, Violence and Chllenges for Intervention Programs]. *Observatorio, 8*, 70–81. Retrieved from http://www.pazciudadana.cl/wp-content/uploads/2011/11/delincuencia-juvenil-violencia-y-desafios.pdf

Defensoría Penal Pública. (2013). Informe Estadístico Anual: Período Enero—Diciembre 2013. [Annual Statistical Report: Period January–December 2013.] Unidad de Estadística–Departamento de Estudios.

Defensoría Penal Pública. (2014). Informe Estadístico Anual: Período Enero–Diciembre 2014. [Annual Statistical Report: Period January–December 2014.] Unidad de Estadística—Departamento de Estudios.

Dryjanska, L. (2014). Thematic review: Negotiating identities of street children. A short reflection piece. *Papers on Social Representations, 23*, 3–1.

Espinoza, O., Piñol, D., Sánchez, M., Martínez, F., Fuenzalida, I., Villagra, C., et al. (2012). Estudio Modelo y Medición de la Reincidencia de Adolescentes y Jóvenes Infractores de la Ley Penal Producto 1 Modelo De Medición de la Reincidencia Resultados de Reincidencia por Grupo Cohorte. Instituto de Asuntos Públicos. [Study Model and Measurement of Recidivism of Adolescent and Young Offenders Criminal Law Product 1 Model Measuring Recidivism: Recidivism results for Cohort Group.] Instituto de Asuntos Públicos. Universidad de Chile. Retrieved from http://www.sename.cl/wsename/otros/uchile/informe_final_reincidencia_medicion_2008.pdf

Farrington, D. (1997). Human development and criminal careers. In M. Maguire, R. Morgan & R. Reiner (Eds.), *The oxford handbook of criminology*, 2 ed. (pp. 361–498). Oxford: Clarendon Press.

Flores, P., Mercado, S., & Soto, C. (2009, August 1). Fundación Don Bosco: Una experiencia de intervención y acompañamiento para niños, niñas y adolescents en situación de calle. [Foundation Don Bosco: An experience of intervention and support for street children and adolescents.] El Observador. Retrieved from http://www.sename.cl/wsename/otros/observador4/obs4_89-112.pdf

Forselledo, A. G. (2001). Niñez en situación de calle. Un modelo de prevención de las farmacodependencias basado en los Derechos Humanos. [Street children. A prevention model for pharmacodependency based on human rights.] *Boletín del Instituto Interamericano del Niño. Tomo 69* (236). Montevideo: IIN.

Frase, R. (1990). Comparative criminal justice as a guide to American Law reform: How do the french do it, how can we find out, and why should we care. *California Law Review, 78*(3), 539–683.

Guerra, L. (2010). Estudio de niños y niñas en situación de calle. [A study of street children]. Escuela de Trabajo Social UC/ Centro de Políticas Públicas UC. Unpublished report.

Guerra, L., Bedregal, P., Margotta, P., & Valenzuela, E. (2011). Niños, niñas y jóvenes en situación de calle: desafíos para la intervención desde la perspectiva de las fuerzas. En Propuestas para Chile. [Street children and youth: Intervention challenges from a strength perspective.] Ediciones Centro de Políticas Públicas, Pontificia Universidad Católica de Chile.

Hogar de Cristo. (2011). Retrieved from http://www.hogardecristo.cl/obras-sociales/a-quienes-ayudamos/infanto-juvenil/

Imbusch, P., Misse, M., & Carrión, F. (2011). Violence research in Latin America and the Caribbean: A literature review. *International Journal of Conflict and Violence, 5*(1), 87–154.

INE. (2012). Instituto Nacional de Estadísticas. Compendio Estadístico 2012. [National Institute of Statistics. 2012 Statistical Compilation.] Retrieved from http://www.ine.cl/canales/menu/publicaciones/compendio_estadistico/compendio_estadistico2012.php

Instituto de Sociología. (2007). Informe Final: Estudio de Prevalencia y Factores Asociados al Consumo de Drogas en Adolescentes Infractores de Ley. [Final Report: A Study of the Prevalence and Factors Associated with Drug Use Among Adolescents who Break the Law]. Universidad Católica. Retrieved from http://www.sename.cl/wsename/otros/genero/estudio_prevalencia_factores_asociados.pdf

Kliksberg, B. (2007). Mitos y realidades sobre la criminalidad en América Latina. Algunas anotaciones estratégicas sobre cómo enfrentarlas y mejorar la cohesión social [Myths and Realities about ciminality in Latin America. Some strategic notes on how to face it by improving social cohesion]. Fundación Internacional y para Iberoamérica de Administración y Políticas Públicas (FIIAPP). Retrieved from http://www2.congreso.gob.pe/sicr/cendocbib/con4_uibd.nsf/857791C892ED91E505257CA00059CB1D/$FILE/mitos_y_realidades_criminalidad.pdf

Kudrati, M., Plummer, M., & El, N. (2008). Children of the sug: A study of daily lives of the street in Khartoum, Sudan, with intervention recommendations (version electronic). *Child Abuse and Neglet, 32*, 439–448.

Larraín, S., Bascuñan, C., Martínez, V., Hoecker, L., & González, D. (2006). *Informe Final: Estudio Género y Adolescentes Infractores de Ley*. [Final Report: Gender and Youth Offenders Act.] PRODENI Corporación Chilena Pro Derechos de los Niños y los Jóvenes.

Lucchini, R. (1996). Niño de la calle. Identidad, sociabilidad y droga. [Street youth. Identity, socialization and drugs]. Barcelona: Los libros de la fontera.

Mansilla, M. E. (1989). Los niños de la calle: siembre de hoy, cosecha del mañana. [Street children: today's seed, tomorrow's harvest.] Lima: OC.

Méndez, C. (2010). Un estudio exploratorio acerca de jóvenes que en esu infancia habitaron en calle: ¿qué les ayudó a encontrar alternativas a la vida de calle? Una mirada desde los sujetos. [An exploratory study of youth who n infancy lived on the strets: What helped them find alternatives to street life? From the perspectives of the subjects.] En: *Revista Señales N 7*. Sename.

Mettifogo, D., & Sepúlveda, R. (2005). *Trayectorias de vida de jóvenes infractores de ley*. [Life trajectories of young offenders.] Centro de Estudios en Seguridad Ciudadana.

Ministry of Justice. (2014). Informe resultados línea base "Programas especializados con niños, niñas y adolescentes en situación de calle." [Report of results of programs specializing on street children and adolescents]. Área de evaluación departamento de protección de derechos. [Evaluation area, Rights Protection Department.].

Nokia. (2014). Nokia and ACHNU Launch the "Conéctate!" Youth Program in Chile. Retrieved from http://www.prnewswire.com/news-releases/nokia-and-achnu-launch-the-conectate-youthprogram-in-chile-55678002.html

Nonprofit Enterprise and Self-sustainability Team (NESsT). (2000). Sustainability through earned income strategies a diversified approach to self-financing: A case study of Hogar de Cristo. Author. Retrieved from http://www.synergos.org/knowledge/01/hogardecristoenglish.pdf

Oficina de las Naciones Unidas contra la Droga y el Delito [UNODC]. (2013). Guía de Introducción a la Prevención de la Reincidencia y la Reintegración Social de Delincuentes. [Introductory Guide for the Prevention and Social Reintegration of Delinquents.] Guías de Justicia Penal, Viena, UNODC. Retrieved from https://www.unodc.org/documents/justice-and-prison-reform/UNODC_SocialReintegration_ESP_LR_final_online_version.pdf

Ordoñez, D. (1995). Niños e la calle y sus familias en Lima: a realidad en 852 variables. [Street youth and their families in Lima: a reality in 852 variables]. Lima CEDRO.

Ossa, L. (2005). (Adolescentes) en situación de calle: Construcción de identidad en situación de extrema vulnerabilidad. Un acercamiento cualitativo. Tesis para optar al Grado de Magíster en Psicología mención en Clínica Infanto-Juvenil. Universidad de Chile. [Street adolescents: Identity construction under extreme vulnerability. A qualitative approach. Master's Thesis with a clinical infant-youth foci.].

Oyarzún, A., Dávila O., Ghiardo, F., & Fuad, H. (2008).¿Enfoque de derechos o enfoque de necesidades? [Focus on rights or focus on needs?] Centro de Estudios sociales. Santiago: SENAME. Unpublished report.

Pedernera, L., & Pedrowicz, S. (2009). Latino Americana y Caribeña por la Defensa de los Derechos de los Niños, Niñas y Adolescentes. Estudio de balance regional sobre la implementación de la Convención sobre los Derechos del Niño en América Latina y el Caribe Impacto y retos a 20 años de su aprobación. [Network of Latin American and Caribbean by the defense of the rights of children, girls and adolescents. Study of regional balance on the implementation of the Convention on the rights of the child in Latin America and the Caribbean impact and challenges, 20 years after its adoption]. Uruguay, Montevideo: Red Latino Americana y Caribeña por la Defensa de los Derechos de los Niños, Niñas y Adolescentes. Retrieved from http://www.derechosinfancia.org.mx/libro%20balance%20regional%20interior%20web.pdf

Pino, P. (2013). Estudio detectó 303 niños que viven en las calles de Santiago: La mitad son drogadictos. [Study found 303 children living in the streets of Santiago: Half of them are drug addicts]. La Segunda online. Retrieved from http://www.lasegunda.com/Noticias/Nacional/2013/05/849694/estudio-detecto-303ninosque-viven-en-las-calles-de-santiago-la-mitad-son-drogadictos

PNUD. (2013). Programa de las Naciones Unidas para el Desarrollo. Informe Regional de Desarrollo Humano 2013–2014. Seguridad Ciudadana con Rostro Humano: Diagnóstico y propuestas para América Latina. [United Nations Program for Development. Regional Report on Human Development 2013–2014.] Nueva York, NY: Author. Retrieved from http://www.undp.org/content/dam/rblac/img/IDH/IDH-AL%20Informe%20completo.pdf

Rew, L., & Horner, S. (2003). Personal strengths of homeless adolescents living in a high-risk environment. *Advances in Nursing Science, 26*(2), 90–1001.

Reyes, C. (2014). ¿Por qué las adolescentes chilenas delinquen? [Why do adolescent females become delinquent?] *Política Criminal*, *9*(17), 1–26.

Salesian Missions. (2013, January 18). In Chile: Mother and children rescued from despair. *Salesian Missions.* Retrieved from http://www.salesianmissions.org/news/chile-mother-and-children-rescued-despair

Santibáñez, M., & Alarcón, C. (2009). *Análisis crítico de la aplicación práctica de la Ley de Responsabilidad Penal Juvenil y propuestas de mejoramiento*. [Critical analysis of the practical application of the Law on Juvenile Criminal Responsibility and proposals for improvement.] Pontificia Universidad Católica de Chile. Facultad de Derecho. Dirección De Asuntos Públicos Año 4/ No 27/ junio 2009. Retrieved from http://politicaspublicas.uc.cl/wp-content/uploads/2015/02/analisis-critico-de-la-aplicacion-practica-de-la-ley-de-responsabilidad-penal-juvenil.pdf

SENAME. (2004). *Niños y niñas de la calle*. [Street children.] Santiago: SENAME. Retrieved from http://www.sename.cl/wsename/otros/doc_sename/ninosninas_calle.pdf

SENAME. (2014). Boletín Estadístico Anual de los Niños (as) y Adolescentes Vigentes en la Red Sename: Primer Trimestre Año 2014. [Annual Statistical Bulletin of Children and Adolescents Sename's Network: First Trimester Year 2014]. Santiago: Gobierno de Chile. Retrieved from http://www.sename.cl/wsename/otros/bestnacionales/2014/1/Boletin_201403_Nacional.pdf

SENAME. (2016). Misión y Objetivos Sename. [Mission and Objectives Sename.] Santiago: Author. Retrieved from http://www.sename.cl/wsename/estructuras.php?name=Content&pa=showpage&pid=2

SERPAJ CHILE. (2015). Misión—Visión [Mission—Vision]. SERPAJ. Retrieved from http://serpajchile.cl/inicio/corporacion/mision-vision/

UNICEF. (2004). Convención sobre los Derechos del Niño Quince año después: América Latina. [Convention on the Rights of the Child Fifteen years later: Latin America.] Geneva: Author. Retrieved from http://www.unicef.org/lac/cdn_15_anos_Espfull(2).pdf

UNICEF. (2006). Estado mundial de la infancia 2006. Excluidos e invisibles. [The state of the world's children 2006. Excluded & Invisibles.] New York: Author. Retrieved from http://www.unicef.cl/unicef/public/archivos_documento/157/estado2006.pdf

UNICEF. (2007). Implementation handbook for the convention on the rights of the child: Fully Revised Third Edition. Geneva: Author. Retrieved from http://www.unicef.org/publications/files/Implementation_Handbook_for_the_Convention_on_the_Rights_of_the_Child_Part_1_of_3.pdf

United Nations Office on Drugs and Crime. (2015). *International Homicide Statistics.* Austria, Vienna; Author. Retrieved from http://knoema.com/UNODCHIS2015/unodc-international-homicide-statistics-2015

Valenzuela Vergara, E., Margotta Meneses, P., Bedregal García, P., & Guerra Aburto, L. (2013). Metropolitan observatory for street children and youngsters: A chilean experience of an innovative model. *Journal of Applied Research on Children: Informing policy for children at risk*, *4*(1), 10. Retrived from http://digitalcommons.library.tmc.edu/childrenatrisk/vol4/iss1/10

Adolescent Issues in India: Toward a Rights-Based Approach

23

Vijayan K. Pillai, Ya-Chien Wang and Arati Maleku

Introduction

India has the largest population of adolescents in the world. Worldwide, of the 1.2 billion adolescents, who are 10–19 years of age, 243 million, roughly 20 %, live in India. The population of India is very young with about one-fifth in the age group of 10–19 years. About 200 million in 2000 were in the adolescent age group of 15–19 years. The adolescent population is growing rapidly and is expected to stabilize at a peak level of 215 million in 2020.

In 2000, Hindus accounted for about 80 %, Muslims about 13 %, Christians approximately 2 %, and the rest accounted for religions such as Buddhism, Jainism, and Sikhism. As the majority of the population is Hindu, the social context of the problems experienced by a majority of adolescents in India is deeply influenced by the cultural and religious practices among the Hindus.

V.K. Pillai (✉)
School of Social Work,
University of Texas—Arlington,
211 South Cooper Street, Arlington,
TX 76019, USA
e-mail: pillai@uta.edu

Y.-C. Wang
Department of Medical Sociology and Social Work,
Chung-Shan Medical University, No. 110, Sec. 1,
Jianguo N. Rd, Taichung City 40201, Taiwan

A. Maleku
College of Social Work, The Ohio State University,
1947 College Road, Columbus, OH 43210, USA

Becoming an Adolescent in India: The Sociocultural Context

In India, the period of adolescence has not been precisely determined. In spite of legal definitions of adolescence, which state a precise age interval, the demarcation between childhood and adolescence remains culturally undefined. Adulthood is preceded by a prolonged period of childhood. Childhood is idealized as a playful, carefree stage of development. Ancient Indian texts such as the Ramayana and Mahabharata, for example, portray the epic heroes as being childish, yet cognizant of Dharma, being able to distinguish right from wrong. Folklore on Lord Krishna narrates in great detail the mischievous nature of the child in the presence of forgiving mothers and female adults. However, on occasions when the community is threatened, the child Lord Krishna rises to save the community from the effects of evil so that 'righteousness' may prevail.

In the Ramayana, there is an extensive section titled the 'Balkhand,' which describes Rama's childhood. It describes Rama, as being obedient and respectful toward his parents and teachers, and that there is very little sibling rivalry. As Rama grew, he spent much of his time under the tutelage of great teachers. Apart from the references in Indian epics to the period of adolescence, unfortunately there are very few folk narratives that describe in detail an ideal adolescence. In particular, for young girls the brief period of transition to adulthood marked by the onset of

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_23

'menarche' was seen as a time of learning and preparation for marriage and motherhood. In the great Indian legal text 'Laws of Manu,' a young girl is supposed to obey her father. In the social control of adolescent sexuality, both mother and father took active roles.

Against the backdrop of an ideal adolescent stage indicated above, Indian children grow up in a collectivistically oriented culture and are also socialized by members of the extended family (Kakar 1981). When they are infants at home, older children may spend a considerable amount of time caring for them (Nuckolls 1993). Age also plays a crucial role. Older members have more authority within the family than do younger ones. Because of a collective orientation, the magnitude of sibling rivalry among children appears to be low (Beals and Eason 1993). Several factors such as the collective orientation, involvement of the extended family in familial affairs, and age gradation in authority with respect to socialization, facilitate an environment for strict disciplining of children. Almost all adult family members, especially female adults, are involved in the supervision and socialization of children.

Male children especially are often disciplined using corporal and other forms of harsh punishment. Nagging, swearing, and scolding are very commonly used (Ross 1961). Reward and punishment strategies are less frequently used than physical punishment. The style of parenting is therefore mostly authoritarian (Saraswathi and Datta 1990). Throughout the course of socialization, children are often told the distinction between right and wrong behaviors. Subsequently, as children reach adulthood, they develop a strong sense of righteous duty, supervised, enforced, and maintained by a network of extended family. Topics related to sexual development are never raised. Children are socialized to regard sexual thought as unnatural and that it should be avoided as much as possible. Strict socialization with regard to sex is imposed more on girls than on boys.

Sexual restraint and virginity are believed to be important for entry into marriage. With the decline in the number of child marriages, the period between age at menarche and marriage is one of strict control and supervision in order to restrict the possibilities of sexual contact. Even in urban areas the likelihood of premarital sexual contact is limited. Thus, it appears that premarital adolescent sexual activity is less of a problem in India than it is in other countries. In India, perhaps less than 10 % of adolescent pregnancies occur outside of marriage. Because of social control and lack of social interaction between the sexes, the incidence of premarital sex appears to be negligible. When a girl becomes pregnant out of wedlock, she is often ridiculed and ostracized (Pal et al. 1997). A social survey conducted by the Osmania University School of Education found that the average age at the start of menstruation was 13.1 years. This is based on responses from only 43 of the 50 respondents. They found very little evidence of premarital sexual activity. However, the extent of supervision and social control over sexually mature children is likely to diminish with low socioeconomic status.

Low socioeconomic status is more likely to contribute to decreasing control over child socialization in urban areas than in rural areas. Issues of parental control over sexual socialization of female adolescents are compounded by changes in the age at marriage. Early marriage and motherhood considerably increases the likelihood of several health and economic risks that adolescents face in both the short and long terms. In the next section, we examine selected social problems faced by adolescents in India.

Adolescents: Selected Social Disadvantages

Perhaps one of the most conspicuous social problems facing adolescents in India today is early marriage and parenthood. Until the middle of the last century, the Hindu practice of child marriage was very common. Marriages sometimes occur, even today, among toddlers. The cultural reasons for early marriage range from concerns about chastity and social stigma related to unwed motherhood (Pati 2004). Honor killings for violation of the norm still prevail in some parts of the country.

The average age at marriage for females increased from 16.1 in 1961 to 19.7 in 1998–1999 (Desai and Andrist 2010). On the one hand, an increase in age at marriage is accompanied by an increase in the time interval between age at menarche and age at marriage. With the increase in this duration over the past 50 years, parental responsibilities for supervision and sexual socialization have also increased. On the other, even at the current age at marriage (nearly 20) for most young Indian women, the transition to motherhood takes place in their teens (Seiter and Nelson 2011). In the state of Assam, one-third of all girls below the legal age of 18 years for marriage are married. The birth rate among adolescent girls at 45 per 1000 is contributing significantly to the current high birth rate in India. Adolescent birth rates vary between rural verses urban and between the poor and the rich wealth quintile populations (IIPS 2007). The richest 20 % of the population when compared to the poorest 20 % is more likely to have skilled attendants at birth (UNICEF 2012).

Anemia Among Adolescent Girls

Adolescent girls suffer from a high incidence of malnutrition. Girls are more at risk of anemia than boys. Kalaivani (2009) reported that nearly 76 % of adolescent girls in India suffer from mild to severe bouts of anemia. As expected, the incidence of anemia is significantly higher among the lower social strata than the rest. Premalatha et al. (2012) found that female students from nuclear families with poorly educated mothers had significantly higher risk of anemia compared with other groups.

HIV/AIDS Among Adolescents

India is among the 12 high-burden countries like South Africa, Nigeria, and Tanzania that are home to the 2.1 million adolescents living with HIV in 2012 (Mothi et al. 2012). AIDS-related deaths among adolescents between the ages of 10 and 19 increased by 50 % between 2005 and 2012, rising from 71,000 to 110,000. A large proportion of the adolescents were unaware that they were infected. Investments to the tune of $5.5 billion (USD) will be required to prevent an additional 2 million adolescents, particularly girls, from becoming infected by 2020. Of the total of 2 million adolescents at risk, 1.2 million are females.

Mental Health and Adolescents

Adolescents in India are more prone to mental health diseases than adolescents from developed countries. Reddy et al. (2012) found that 10.36 % of the participants studied were likely to suffer some degree of a mental health illness. In particular, a high proportion of school-going boys compared with girls in urban areas suffer from mental health morbidity (Dhuria et al. 2008). Several studies in India have reported similar findings (Bhola and Kapur 2003; Malhotra et al. 2002; Saraswathi 1999) and have come to the conclusion that social and health risks facing adolescents in India are both gender and class based. There appears to be greater continuity in the transition from child to adult roles among girls compared to boys, and in the lower class when compared with those from the upper classes (Saraswathi 1999).

Even though there was an overall increase in adolescent literacy levels during 2000–2011 intercensal period, there was little change in the relative girl disadvantage in terms of literacy (Census of India 2011). A large proportion of adolescent girls face double jeopardy stemming from disadvantages associated with both gender and socioeconomic class. This phenomenon is clearly marked among adolescent girls from scheduled castes and scheduled tribes of India (UNDP 2000). There is also significant regional variation in adolescent literacy levels. In the state of Kerala, almost 100 % of adolescents are literate. At the other end of the spectrum, there are several states such as Bihar, where only half the number of adolescents are in school (Chudgar 2009; Govinda and Bandopadhyay 2008). In addition, there is an urban and rural divide as well. In the urban region, there is a 10 %

difference in literacy between male and female adolescents with the difference almost doubling in the rural regions (Census of India 2011).

Mitigating Disadvantages: A Rights Perspective

Mental and physical health problems along with educational needs facing the adolescents today are among the most serious obstacles against building capacities for a satisfying life. In the presence of overwhelming empirical evidence of adolescent disadvantages, governmental programs and policies should form the first line of defense in preserving adolescent health and dignity (Chitnis 2005). The governmental response to the welfare of adolescents may be grouped under three categories: (1) laws and regulations enacted, (2) government-sponsored programs, and (3) youth policies. We describe six laws in the following section followed by a description of selected youth policies and government-sponsored programs.

The Young Persons (Harmful Publications) Act, 1956

(http://education.dewsoftoverseas.com/vakilno4/youngpersonsact/introduction.htm)

The objective of the act is to prevent the production and circulation of publications containing stories that glorify crime, violence, and vice. The Young Persons (Harmful Publications) Bill was passed by both Houses of Parliament and received the assent of the President on December 28, 1956.

The Child Labour (Prohibition & Regulation) Act, 1986

(http://www.whatishumanresource.com/the-child-labour-prohibition–regulation-act-1986)

By virtue of this act, employing a person who is under the age of 14 is illegal. Children should not be allowed to work in any occupations or workshops mentioned in parts A & B of the schedule, which contains almost all occupations. The Child Labour (Prohibition & Regulation) Act 1986 empowers police to arrest persons employing children and present them before honorable courts. Except in occupations and workshops mentioned in parts A & B of the schedule, children are allowed to work. Children are not permitted to work overtime between 7 p.m. and 8 a.m. Every employed child is allowed to have a holiday once a week for a whole day. Every employer of a child should inform the inspector, appointed by the government, within 30 days from date of employment of child.

The Child Marriage Restraint Act, 1929

(http://wcd.nic.in/cmr1929.htm)

The objective of the act was to eradicate child marriage. The act extends to the whole of India except the State of Jammu and Kashmir, and it applies also to all citizens of India within and beyond India. The penal provisions do not invalidate the act of marriage. Punishment for child marriage is imprisonment, which may extend to 15 days, with or without a fine. In addition, those who perform or direct child marriage are liable. They face fines and 3 months of imprisonment.

Persons with Disabilities Act, 1995

(http://www.childlineindia.org.in/Persons-with-Disabilities-Act-1995.htm)

On January 1, 1996, the Government of India passed the Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995. In this act, disability is defined as blindness, low vision, leprosy-cured, hearing impairment, locomotor disability, mental retardation, and mental illness. The act calls for the government to take necessary steps to ensure the prevention of disabilities. In accordance with this agenda, the government must screen all children at least once a year to determine risk factors that lead to disability and attempt to

protect the child from such factors. It is also necessary for the state to take measures to reduce risks to prenatal and postnatal mothers and children.

Children with disabilities are to be provided free education by the appropriate government. The government must take steps to integrate children with disabilities into regular schools, but also make space for special schools that cater expressly to the needs of these children. In addition to the basic education schools, governments are also required to develop nonformal education programs for disabled children that help attain literacy, rejoin school, impart vocational training, and provide them with free books and educational material. Teachers need to be specially trained to educate and see to the children's needs. The government must also set up schemes that provide children with disabilities grants and scholarships and also provide funds for making buildings disabled friendly. Educational institutions are also required to provide students with visual disabilities and challenges aides who can take notes for them.

The government is also responsible for making the general environment nondiscriminatory toward people with disabilities by adapting and adding to railways, buses, road signals pavement slopes, warning signals, building ramps, Braille signs, auditory signals, etc. The act also provides for nondiscrimination of people with disabilities in employment that can be taken up by them, in government and nongovernment offices. Institutions that aid people with disabilities are required to be registered by the government, and the government is also required to set up a number of institutions to cater to the needs of people with severe disabilities.

The Medical Termination of Pregnancy Act, 1971

(http://tcw.nic.in/Acts/MTP-Act-1971.pdf)

The Indian Parliament passed the MTP Act on August 10, 1971, legalizing abortion all over India, except the State of Jammu and Kashmir, which adopted the act in 1980 (WHO 2003). The act stipulates the conditions under which a woman may seek abortion. The act also specifies who is qualified to perform the procedure. The nature of the place where the abortion is performed is also specified by the act. Abortion may be performed in a hospital that is established or maintained by Government, or a place for the time being approved for the purpose of this Act by Government.

According to the act, a woman can terminate an unwanted pregnancy if conception is the result of contraceptive failure or rape and, in some cases, if it proves to be a threat to the woman's life or on eugenic grounds, as when there is a risk that the child, if born, would suffer from deformity or disease. A woman can legally undergo an abortion up to twelve weeks of pregnancy; however, a second doctor's opinion is required if the woman is between twelve and twenty weeks of pregnancy. The law also stipulates the criteria and procedures for approval of an abortion facility, procedures for consent, keeping of records and reports, and ensuring confidentiality.

Pre-Conception and Pre-Natal Diagnostic Techniques Act, 1994

(http://radiopaedia.org/articles/preconception-and-prenatal-diagnostic-techniques-act)

Pre-Conception and Pre-Natal Diagnostic Techniques (prohibition of sex selection) Act (PCPNDT) is a statute enacted to stop female feticide, which had resulted in declining female sex ratio in India. As per the Census of India 2011, the adult sex ratio in India is 943 females per 1000 males and the child sex ratio is 919 females per 1000 males. The act enforces absolute prohibition of sex determination/selection. The act specifies that no communication can be made about the sex of the fetus in any manner and that the procedure, if permitted, must be conducted by qualified persons only. Every center/institute conducting these tests must be registered under the act. Before conducting the test, appropriate forms must be completed.

All records (including referral slips) must be maintained. Every center/institute must display a notice delineating that sex determination/selection is prohibited under law.

Juvenile Justice Act, 2006

(http://www.legalservicesindia.com/article/article/salient-features-of-juvenile-justice-act-2006-1449-1.html)

The Union Parliament, providing a uniform law on juvenile justice for the entire country, passed the first central legislation on Juvenile Justice in 1986. The Juvenile Justice Act was passed to provide care, protection, treatment, development, and rehabilitation of neglected or delinquent juveniles and for the settlement of certain matters related to the disposition of delinquent juveniles. The Act is basically drawn from all the national and international standards pertaining to children wherein a strong impetus is given to the fulfillment and protection of the child's rights. Emphasis is also laid on reintegration of the child into the family system to ensure proper care and protection from all kinds of exploitative situations. The Juvenile Justice Act 1986 was repealed and the Juvenile Justice (Care and Protection of Children) Act 2000 was passed, taking into consideration all the International standards prescribed as per the Convention on the Rights of the Child, the Standard Minimum Rules for the Administration of Juvenile Justice, 1985 (Beijing Rules). The UN Guidelines for the Prevention of Juvenile Delinquency called the Riyadh Guidelines, 1990, and the United Nations Rules for the Protection of Juveniles Deprived of their Liberty (1990). The innovation the law makes with respect to children in need of care and protection is the conceptualization and restoration of the child as being the focal point, with restoration being conceptualized as restoration to parents, adopted parents, or foster parents (Sec39). The law outlines four options for the restoration for children in children's homes and special homes, which include adoption, foster care, sponsorship, and aftercare.

Immoral Traffic Prevention Act, 1986

(http://www.childlineindia.org.in/Immoral-Traffic-Prevention-Act-1986.htm)

In 1950, the Government of India ratified the International Convention for the Suppression of Immoral Traffic in Persons and the Exploitation of the Prostitution of others. In 1956, India passed the Suppression of Immoral Traffic in Women and Girls Act, 1956 (SITA). The act was further amended and changed in 1986, resulting in the Immoral Traffic Prevention Act also known as PITA. The PITA addresses trafficking only in relation to prostitution and not in relation to other purposes of trafficking such as domestic work. The first section of the act has provisions that outline the illegality of prostitution and the punishment for owning a brothel or a similar establishment, or for living off earnings of prostitution as is in the case of a pimp. Section five of the act states that if a person procures, induces, or takes a child for the purpose of prostitution, the prison sentence is a minimum of 7 years but can be extended to life. To ensure that the people in the chain of trafficking are also held responsible, the act has a provision that states that any person involved in the recruiting, transporting, transferring, harboring, or receiving of persons for the purpose of prostitution is guilty of trafficking. In addition, any person attempting to commit trafficking or found in the brothel or visiting the brothel is punishable under this law.

If a person is found with a child in a brothel, it is assumed that he is detaining the child there for the purpose of sexual intercourse. Hence, the person can be punished by a prison term of 7 years up to life imprisonment, or a term that may be as long as 10 years along with fines. If a child is found in a brothel, and after a medical examination, it is determined that the child was sexually abused, it is assumed that the child was held for the purpose of prostitution.

Selected Aspects of the National Youth Policy, 2003

(http://www.youth-policy.com/Policies/India NATIONALYOUTHPOLICY2003.pdf)

The National Youth Policy, 2003, reiterates the commitment of the entire nation to the composite and all-round development of Indian children. It seeks to establish an all-India perspective to fulfill the youths' legitimate aspirations so that they have the capacity to successfully accomplish the challenging tasks of national reconstruction and social changes that lie ahead.

The first National Youth Policy was formulated in 1988. The second, a revised National Youth Policy, was passed in 2003. This Policy covers all the youth in the country in the age group of 13–35 years. It is acknowledged that since all the persons within this age group are unlikely to be one homogenous group, but rather a conglomeration of subgroups with differing social roles and requirements, this age group may, therefore, be divided into two broad subgroups, viz., 13–19 years and 20–35 years. Youth belonging to the age group of 13–19 years, which is a major part of the adolescent age group, will be regarded as a separate constituency.

Objectives of the National Youth Policy

The objectives of the National Youth Policy are to instill in the youth, at large, an abiding awareness of, and adherence to, the secular principles and values enshrined in the Constitution of India:

- To instill unswerving commitment to patriotism, national security, national integration, nonviolence, and social justice;
- To develop qualities of citizenship and dedication to community service among all sections of the youth;
- To promote awareness in the fields of Indian history and heritage, arts, and culture;
- To provide the youth with proper educational and training opportunities;
- To facilitate access to information in respect of employment opportunities and to other services, including entrepreneurial guidance and financial credit;
- To facilitate access, for all sections of the youth, to health information and services to promote a social environment which strongly inhibits the use of drugs and other forms of substance abuse, and wards off disease (like HIV/AIDS);
- To ensure measures for de-addiction and mainstreaming of the affected persons; and enhance the availability of sports and recreational facilities as constructive outlets for the abundant energy of the youth;
- To sustain and reinforce the spirit of volunteerism in order to build up individual character and generate a sense of commitment to the goals of developmental programs;
- To create an international perspective and to involve them in promoting peace and understanding; and the establishment of a just global economic order; to develop youth leadership in various socioeconomic and cultural spheres;
- To encourage the involvement of non-governmental organizations, co-operatives, and non-formal groups of young people;
- To promote a major participatory role in the protection and preservation of nature, including natural resources;
- To channel their abundant energies in community service so as to improve the environment and foster a scientific, inquisitive reasoning, and rational attitude in the younger generation; and,
- To encourage them to undertake such travel excursions as would better acquaint them with cultural harmony, amidst the diversity, in India, and overseas.

The government agencies that look after the interests of youth including adolescents in India is 'The Ministry of Youth Affairs and Sports,' which was formed by reorganizing and enlarging the Department of Sports established in 1982. The Ministry sponsors a number of youth programs though several Ministry-affiliated organizations such as the Nehru Yuva Kendra

Sangathan (Nehru Center for Youth—NYKS). None of the youth programs are specifically targeted at adolescents as a category.

NYKS provides health education, trains young men and women for jobs, holds camps to promote national integration, runs campaigns to sensitize the youth on environmental issues, and organizes the annual National Youth Festival. NYKS often partners with international agencies such as the UN or other ministries to cater to more than 4,200,000 members of some 125,000 village youth clubs in 501 districts.

The National Service Scheme (NSS) focuses on the personal development of college and university students through community service. When it was launched in 1969, the birth centenary of Mahatma Gandhi, the scheme covered 40,000 students in 37 universities. Now it has more than 3.2 million student volunteers. Students attend camps on various themes, such as environment, personal health and hygiene, and literacy campaigns, and are required to contribute 120 h for NSS-related activities over a period of two years to be eligible for a certificate. Over the years, volunteers have been involved in providing relief to those affected by natural disaster, polio immunization programs, deforestation, and other calamities.

The Ministry manages about 70 youth hostels in India. They have been built in places of historical and cultural significance and heavy tourist spots. In the financial year 2011–2012, nearly $192,000 (USD) was released for the renovation of 21 of these hostels.

In southern India, the Ministry established the Rajiv Gandhi National Institute of Youth Development. The institute engaged in both training and launching a variety of youth programs. The institute's programs are: Training Orientation and Extension; Research, Evaluation and Documentation/Dissemination; Panchayati Raj and Youth Affairs; International Centre for Excellence in Youth Development; Social Harmony and National Unity; Adolescent Health and Development; and Gender Studies.

In spite of the programmatic and policy efforts by the Ministry of Youth Affairs and Sports, there has been very little effort to evaluate the effectiveness of their programs at the grass root levels. There appears to be a lack of perspective with respect to the overall goals of youth development; unified vision is needed: one, which would integrate various age groups involved, including the adolescents. In the light of this, we offer a perspective for understanding youth development with implications for culturally sensitive strategies aimed at adolescent welfare in India.

Adolescent Health and Welfare: A Rights Perspective

A cursory evaluation of programs, policies, and laws that look after the well-being of adolescences in India suggests that there is a lack of appreciation for the vulnerabilities that are suffered by adolescents as a category. In most instances, adolescents are grouped in with other older youth groups with whom adolescents share very little in terms of their status, accessibility to resources, and ranking on social and economic indicators of well-being. We argue that adolescents have to be better defined, targeted, and catered to as a group.

A rights approach is particularly useful when dealing with vulnerable groups as it calls for a rich understanding of the nature of their vulnerabilities. Rights may be conceptualized as undeniable guarantees that are accorded to a group of people in an effort to improve their capacity to achieve goals and objectives of their choosing while minimally interfering with the rights of others. Rights are interdependent, indivisible, equal, and nondiscriminatory. There has been some level of understanding of the importance of the rights approach in catering to the well-being of the youth in India. This is especially the case in terms of acknowledgement that education is a right.

The Right to Education bill was passed by the Indian legislature on July 2, 2009. The law came into effect except in the State of Jammu and Kashmir on April 1, 2010. All children now enjoy the right to free and compulsory elementary education in a school located in their neighborhood. The government is obliged to ensure that every child between 6 and 14 years of

age receives free elementary education. In doing so, the government is responsible for ensuring compulsory admission, attendance, and completion. The law specifies the role of the local government, local authority, and parents in providing free and compulsory education, and the sharing of financial and other responsibilities between the central and state governments. The Education bill also specifies and lays down procedural and infrastructural norms such as pupil–teacher ratios, buildings and infrastructure, and school-working days.

Right to health and adequate nutrition is another facet of adolescent life, which needs immediate attention. As mentioned elsewhere, nearly 70 % of adolescent girls in India suffer from mild to severe bouts of anemia. In addition, the incidence of anemia remains significantly higher among the lower social strata than among the rest. Attributes such as health and education are interrelated with several other capacities needed to achieve individual-level objectives and goals. Subsequently there needs to be a conceptual development with respect to improving choices within the context of rights that are needed to safeguard adolescent well-being.

Bourdieu (1990) offers a theoretical frame, which offers a holistic view of the utility of rights within the socioeconomic and cultural context of engagement with populations such as adolescents. His is a broad approach to rights, which addresses aspects of adolescent's social status, a key to power required to acquire resources.

Bourdieu (1990) presents three interrelated concepts useful for the analysis of the social world. The first of this concept is 'Habitus.' The concept of Habitus incorporates the notion that several aspects of social life cannot be explained by examining individual levels of actions. He proposes that social life at any given moment is a product of a shared past, however small or long it may be, of history, traditions, and customs. Much of social action is therefore an outcome of information gained through imitation and iterative learning and performed almost unconsciously. In the case of Indian adolescents, their vulnerabilities stem from the inferior status accorded to them through cultural socialization processes, as well as what they learn in peer group settings.

The second Bourdiean concept is 'Capital.' Though the Bourdiean concept of capital includes 'economic capital,' the emphasis is on culture and symbolic capital. Capital is directly related to the amount of power individuals have to engage in exchanges that improve their social status within the group. Bourdieu's concept of cultural capital includes symbolic elements such as tastes, clothing, mannerisms, and credentials. These symbolic elements provide cues with respect to the relative power individuals enjoy while fueling social inequality. In the case of adolescents, from the Bourdiean perspective, it is necessary to take account of the cultural composition of adolescent groups in order to effectively facilitate their enjoyments of adolescent rights. For example, in the Indian context, the Right to Education Act was challenged.

In 2014, the court ruled that minority schools are not required to provide free and compulsory elementary education to children who were not members of the minority community, which had established the school. The rationale behind this exemption is that such a requirement would interfere with the right of minorities guaranteed by the constitution because of their cultural backwardness and disadvantages stemming from discrimination and marginalization. The implementation and protection of rights need to be informed by the cultural rights of adolescents as a group.

The third concept of 'field' refers to a number of macro-level and social structural aspects that influence activities of social life. It includes a number of structures, authorities, and institutions, which relate to actions individuals engage in to achieve desired goals and objectives. The field at any instance is a set of dynamic interrelationships influenced by actions of individuals, as well as the reactions of existing structures. The structures are thus influenced by individual actions. For Bourdieu, knowledge of the field is essential for determining the direction of the field prior to action. In building capacity among adolescents, Bourdiean theory suggests that adolescents will be influenced by organizational, environmental, media, and social structural

factors and therefore the call for an assessment of the context prior to introducing laws is in support of adolescent rights.

Even though all three of the Bourdiean concepts are important for identifying interventions for building capacities among adolescents in India, the concept of 'Habitus' is immensely useful for getting acquainted with 'adolescents' as client. Adolescent groups in India hail from different cultural settings. In the rural setting, these groups are likely to be homogeneous. This homogeneity is crafted and obtained through a number of caste-related rules and village-level norms regarding social distances among groups. These norms include or exclude people in public spaces while also defining the intensity and extent of contact among various groups. Children learn local rules and norms and internalize them to the extent that goal-directed acts are effortlessly performed (Oettingen et al. 2000). Acts are repeated when they are followed by positive rewards in a variety of situations, and when these rewarding situations present themselves, acts are repeated and performed effortlessly. Thus, the learning of a set of rules and norms and acquiring knowledge of a number of social situations elicit reactions and behaviors that are performed almost unconsciously. They are adolescent habits, much of which may be shared when adolescents are socialized under similar rules and norms of social and economic institutions, which constrain access to various types of social and economic capital.

Social interventions usually involve changes, which call for modification of the 'Habitus.' Habits are goal oriented though they manifest in actions that appear effortless. When individual-level goals and objective change, 'habitus' is likely to change as well (Bourdieu 1977). It is also likely to change when adolescents are located in a different socioeconomic context. An intimate knowledge of the 'habitus' informs us a great deal about the 'taken for granted actions' and associated reward systems. One consequence of this approach is that programs and activities for 'planned change' should relate to adolescent's 'taken for granted actions' and extend their current goals and objectives by improving realistic choices available in the direction of planned change. This may not be achieved in culturally insensitive social contexts, which call for abrupt change in the 'habitus.' Several examples of this approach exist in the literature on family planning for adolescents. This approach has been used for improving contraceptive use among adolescents through peer group education. Access to birth control methods is made available under the supportive guidance of peers from the field. Current programs sponsored by the Ministry of Youth Affairs and Sports target large heterogeneous groups of adolescents across cultural boundaries. A Bourdiean perspective calls for the reevaluation of this approach.

Conclusion

This chapter has attempted to discuss the status of adolescents in India from a social rights perspective. Nearly 22 % of the Indian population is in the age range of 10–20 years, constituting a very large segment of the Indian population. Though adolescents remain a very strong social category, they have not received their due attention from governmental agencies. Much of the discussion in the governmental literature on adolescents focuses on the youth including adolescents. However, the failure to clearly recognize adolescents and young adults as separate social categories results in poor identification of social problems confronting young people as a whole. From a socioeconomic perspective, problems of adolescence are different from those of young adults (Dasen 2000). Adolescents are in a state of transition often with uncertain access to resources. In comparison, young adults enjoy economic power as a large proportion of them are employed in either the formal or informal sectors of the Indian economy. They command a great deal of social and economic independence.

The efforts of the Ministry of Youth Affairs and Sports lack not only a clear focus on adolescent issues, but also the widespread coverage (spatial) needed to help young adolescents to successfully transition into adulthood. The current programs

assume a great deal of independence among socioeconomic problems confronting the youth. Insufficient recognition of the interrelationship between problems leads to wastage of valuable resources and also duplication of efforts.

From a rights perspective, in this chapter, we have focused on a few selected adolescent issues and have attempted to document the level of response to them by the government, a major agency with resources. A rights approach toward mitigating selected problems calls for precise identification of the subpopulation whose interest is being targeted. Second, the interventions are necessary to enable a targeted population to access resources and acquire capacities necessary for achieving desired goals and objectives. In this paper, we have attempted to apply a Bourdiean perspective useful for identifying subpopulations and identifying strategies of intervention.

In this end, adolescents are our hope for the future. Addressing adolescent problems is essential to sustainable development. Developing and identifying suitable perspectives to address adolescent issues should remain an important concern for researchers as well as policy makers in India.

References

Beals, A. R., & Eason, M. A. (1993). Siblings in North America and South Asia. In C. W. E. Nuckolls (Ed.), *Siblings in South Asia: Brothers and sisters in cultural context* (pp. 71–101). New York, NY: Guilford Press.

Bhola, P., & Kapur, M. (2003). Child and adolescent psychiatric epidemiology in India. *Indian Journal of Psychiatry, 45*(4), 208.

Bourdieu, P. (1977). *Outline of a theory of practice* (Vol. 16). Cambridge, England: Cambridge University Press.

Bourdieu, P. (1990). *The logic of practice*. Redwood City, CA: Stanford University Press.

Census of India. (2011). *Registrar General India (RGI)*. New Delhi, India: Office of the Registrar General.

Chitnis, K. S. (2005). *Communication for empowerment and participatory development: A social model of health in Jamkhed, India*. Doctoral dissertation, Ohio University.

Chudgar, A. (2009). The challenge of universal elementary education in rural India: Can adult literacy play a role? *Comparative Education Review, 53*(3), 403–433.

Dasen, P. R. (2000). Rapid social change and the turmoil of adolescence: A cross-cultural perspective. *International Journal of Group Tensions, 29*(1–2), 17–49.

Desai, S., & Andrist, L. (2010). Gender scripts and age at marriage in India. *Demography, 47*(3), 667–687.

Dhuria, M., Sharma, N., Taneja, D., Kumar, R., & Ingle, G. (2008). Assessment of mental health status of senior secondary school children in Delhi. *Asia-Pacific Journal of Public Health/Asia-Pacific Academic Consortium for Public Health, 21*(1), 19. doi:10.1177/1010539508327031.

Govinda, R., & Bandyopadhyay, M. (2008). *Access to elementary education in India*.

IIPS. (2007). *The national family health survey* (Vol. 1). Mumbai: IIPS and Macro-International.

Kakar, S. (1981). The ties that bind: Family relationships in the mythology of Hindi cinema. *India International Centre Quarterly,* 11–21.

Kalaivani, K. (2009). Prevalence & consequences of anaemia in pregnancy. *Indian Journal of Medical Research, 130*(5), 627–633.

Malhotra, S., Kohli, A., & Arun, P. (2002). Prevalence of psychiatric disorders in school children in Chandigarh. *India. Indian Journal of Medical Research, 116*, 21.

Mothi, S., Swamy, V., Lala, M. M., Karpagam, S., & Gangakhedkar, R. (2012). Adolescents living with HIV in India—The clock is ticking. *The Indian Journal of Pediatrics, 79*(12), 1642–1647.

Nuckolls, C. (1993). An introduction to the cross-cultural study of sibling relations. In C. Nuckolls (Ed.), *Siblings in South Asia: Brothers and sisters in cultural context* (pp. 19–44). New York: Guilford Press.

Oettingen, G., Hönig, G., & Gollwitzer, P. M. (2000). Effective self-regulation of goal attainment. *International Journal of Educational Research, 33*(7), 705–732.

Pal, A., Gupta, K., & Randhawa, I. (1997). Adolescent pregnancy: A high risk group. *Journal of the Indian Medical Association, 95*(5), 127–128.

Pati, R. N. (2004). *Adolescent girls*. New Delhi, India: APH Publishing.

Premalatha, T., Valarmathi, S., Srijayanth, P., Sundar, J., & Kalpana, S. (2012). Prevalence of anemia and its associated factors among adolescent school girls in Chennai, Tamil Nadu, India. *Epidemiology, 2*(118), 1165–2161.

Reddy, K. R., Biswas, A., & Rao, H. (2012). Assessment of mental health of Indian adolescents studying in urban schools. *Malaysian Journal of Paediatrics and Child Health, 17*(2).

Ross, A. D. (1961). *The Hindu family in its urban setting*. Delhi: Oxford University Press.

Saraswathi, T., & Dutta R. (1990). Poverty and human development: Socialization of girls among the urban and rural poor. *Applied Social Psychology in India*, 141–169.

Saraswathi, T. S. (1999). *Adult-child continuity in India: Is adolescence a myth or an emerging reality?* London, England: Sage Publications Inc.

Seiter, L. N., & Nelson, L. J. (2011). An examination of emerging adulthood in college students and nonstudents in India. *Journal of Adolescent Research, 26*(4), 506–536. doi:10.1177/0743558410391262

United Nations Children's Fund (UNICEF). (2012). *The state of the world's children 2012—Children in an urban world*. New York, NY: UNICEF.

United Nations Development Program (UNDP). (2000). *Human development report*. New Delhi, India: Oxford University Press.

World Health Organization. (2003). *Safe abortion: Technical and policy guidance for health systems*. Geneva: WHO.

Part IV

Pairing Children with Health Services: The Role of School Health Services

Pairing Children with Health Services: The Changing Role of School Health Services in the Twenty-first Century

24

Valentina Baltag and Elizabeth Saewyc

Introduction

School is perhaps the only institution that reaches the majority of adolescents almost every day. Therefore, school health services are particularly well placed to reach the majority of adolescents with preventive interventions. In 2012, the global average of primary gross school enrollment ratio was 108.4 %, and secondary gross school enrollment ratio was 73 % (World Bank 2012). Importantly, in many countries the trends for both indicators are positive.

There are many reasons why school health services are well placed to contribute to adolescent health and development. First, they operate where most young people are, and they have access to families. They overcome barriers such as transport issues, limited community services, and inconvenient location or appointment systems, and can also act on the multiple determinants of health, including public health interventions, and environmental change strategies (Clayton et al. 2010). Second, they are free at the point of use; they appear to have cost benefits in terms of adolescent health and society as a whole, by reducing health disparities and attendance at secondary care facilities (Mason-Jones et al. 2012). Third, they are highly valued by students, parents, and communities. They also can provide a comprehensive and non-stigmatizing health service and can provide links between schools and communities (Mason-Jones et al. 2012; National Research Council and Institute of Medicine 2009). Fourth, school health services provide basic health care to the underserved, low-income, and high-risk populations for which they often constitute the sole source of care (National Research Council and Institute of Medicine). When school nurses are removed, referrals for children from ethnic minorities and for conditions that require early identification such as speech problems quickly dry up (Caan 2009). Fifth, they demonstrate the capacity to address the critical needs of the adolescents they serve; a wide range of essential health services are usually provided to meet the physical, mental, and social needs of adolescents (National Research Council and Institute of Medicine 2009). Moreover, there is evidence to suggest that broad-based, holistic service models of school-based health care offer the strongest basis for protecting young people's privacy and confidentiality, countering

Valentina Baltag is staff member of the World Health Organization. The authors alone are responsible for the views expressed in this chapter, and they do not necessarily represent the decisions or policies of the World Health Organization.

V. Baltag
Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland

E. Saewyc (✉)
Division of Adolescent Health and Medicine, and School of Nursing, University of British Columbia, Vancouver, BC, Canada
e-mail: elizabeth.saewyc@ubc.ca

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_24

perceived stigmatization when, for example, a narrow range of sexual and reproductive health or mental health services are present (Owen et al. 2010).

For these reasons, school health services constitute a common way of organizing services for adolescents in educational institutions. They exist in some form in at least 102 countries and territories, in the majority of cases as a form of routine service provision (Baltag et al. 2015). However, among the scientific and political advances that the adolescent health agenda witnessed during the last few years (Independent Expert Review Group 2013; Interagency Youth Working Group 2011; Patton et al. 2014; UNFPA 2012; UNICEF 2011; Williamson 2013), the role of school health services has not been adequately addressed.

There is little reflection in the literature and in the global health policy discourse on how best school health services can contribute to adolescent health and the development of priorities. In addition, lack of knowledge regarding SHS practices and the variability of SHS organization in different countries inhibits cross-country experience sharing, identification of best practices, and critical reflections on practices in use (Baltag et al. 2015). This chapter aims to fill the gap and provide decision makers, researchers, and other stakeholders with a basis for reflection on how the role of SHS can address health and developmental priorities of adolescents.

Historical Perspective and Changing Paradigm

Since its inception, school health services mirrored events and developments in society. The section below makes an attempt, in a very schematic way, to describe the development and main phases of school health services.

School Medical Police

School health services were born at the end of the nineteenth century out of concerns over poor sanitary conditions in schools and to promote infection control (see Table 24.1). Medical inspections of children to detect unhealthy or diseased children and medical inspections of buildings were the focus. School health services were acting like "medical police," and the strategy to control epidemics was simple—excluding sick children from school or closed the school (de Knecht-van 1994).

Public Health Nursing

Influenced by the ideas of the Enlightenment about engineering a better human society through education, health, and social welfare, the attention of medical officers shifted to the improvement of the school environment beyond epidemic control (de Knecht-van 1994). For example, the Pedagogic Hygiene Congress held in Mexico City in 1882 debated what are the best hygienic conditions for schools including workload, classroom space per student, luminosity, ventilation, and construction materials (Carrillo 1999). The Congress proposed a preschool medical examination, the importance of gymnastics, reduced workload, and homework (de Knecht-van 1994; Fernandez 1998; Seip 1994).

School nursing originated in Europe and North America. School nursing was based on public health nursing, a model of practice more independent and interdependent than that of hospital nurses (Hawkins et al. 1994). Very early, the work of medical officers extended beyond medical inspections of buildings and children, to becoming counselors and advisors with knowledge of school routine and the requirements for health (Gardner 2008; Zaiger 2000). The role of the school nurse was broad. They could treat minor illnesses or injuries of children at school. They conducted screenings and health examinations to manage infectious disease, provided health education to children in school, offered follow-up care, and provided health education in the home setting (Zaiger).

Table 24.1 Key dates of the inception of school health services in selected countries

Year	Country	Note
1799	Chile	School health was born as school hygiene, based on the work of a German physician Peter Frank that lays out the hygiene norms in his work, *Complete System of Medical Police* (Sirebrenik 2003)
1866–1868	Norway	School doctors appointed in some private schools (Seip 1994)
1896		School doctors appointed in public schools
1870	England	"Necessary officers" were appointed in 1870 to control epidemics (Gardner 2008)
1882	Mexico	The Pedagogic Hygiene Congress lays out the norms for hygiene in schools
1896		First medical school inspectors were allowed to enter schools (Carrillo 1999)
1888	Argentina	School health medical staff was instituted
1892	Germany	First school doctors began their work in Leipzig focusing on hygiene-oriented tasks (Hahn 1993)
1897	The USA	Medical inspections of schools in New York City
1902		First school nurse was appointed (Hawkins et al. 1994)
1902	Cuba	School hygiene inspections were instituted (Fernandez 1998)
1904	The Netherlands	School physicians were appointed in an increasing number of municipalities (de Knecht-van 1994)
1912	New Zealand	In 1912, the first school medical inspectors were appointed within the Department of Education. In 1917, nurses were appointed to the School Health Service, which transferred from the Department of Education to the Department of Health in 1921, became part of the District Health Nursing Service in 1930, and then joined the Public Health Nursing Service in 1953 (Alcorn 2001)

School Health Services Under Colonial Rule

In developing countries, school health services developed a few decades later due to the fact that mass education systems developed later. In Africa, for example, the first schools were implanted under the colonial rule between 1870 and 1920s when Africa gave way to the systematic colonization by European powers. Thus, school health services usually followed the models of the colonizing power at the time. In Puerto Rico, for instance, school health units were created after the Alabama model in the 1920s. The school nurses were part of the municipalities' public health unit, which was in charge of soil contamination control, quarantine in case of outbreaks, health education, school health, and medical inspections of adults. Starting with the first unit in Río Piedras, by 1930, all municipalities wanted such units, and public health units became the backbone of the island health system (Maldonado 2015). In African countries, SHS were established in 1940s as medical inspections (Frikha et al. 2004). In Tunisia in 1941 and in Senegal in 1942, school health services were instituted with the service of medical inspections in charge of disease prevention, environmental control, nutrition control in boarding schools, and control of students' physical conditions during sport activities.

The Beginning of the End of Mass Screenings

At the inception of school health services, mass screenings were concerned with detecting sick children and sending them back home so they would not contaminate other students. With the

eradication of poverty, improvement of sanitary conditions, and implementation of vaccinations programs, it became necessary to redefine school health services. It changed in two ways. First, the service became "medicalized," with mass screenings at the core of the service, and the role of school nurses shrunk in many school systems to that of dispenser of bandages and aspirins (Hawkins et al. 1994). Nursing services in schools changed from a focus on the public health nurse to a nurse-teacher with emphasis on classroom health education (Zaiger 2000). Second, the focus of the medical checkup shifted. Instead of infectious diseases, it was replaced by detecting musculoskeletal and sensorial conditions that were likely to interfere with the child's ability to learn. Screening for scoliosis, growth, and visual and hearing impairments was the backbone of school health services until the 1950s.

Improved living conditions meant that the majority of children were free from defects or disability, and it became increasingly clear "the inspections were a tedious waste of doctors' time" (Gardner 2008). To exacerbate the problem, the wealth of data amassed during these mass examinations was poorly, if ever, used. Either doctors used a wide variation in the recording of data and standards of entry in medical forms so data from different schools could not be compared or aggregated (Gardner 2008); or, there was no system to act on the findings of the screenings, or the referral system was underdeveloped. It was clear that school health services were overly focused on detecting various problems without taking the necessary steps to act on the findings (Michaud 2006).

In addition, it is not uncommon in developing countries, that screenings are conducted in groups rather than individually. Typically, a team of healthcare providers examines several students at a time in the same space (Frikha et al. 2004). When students undress in front of their peers and several members of the health inspection team, however, it is difficult to ensure the basic respect for privacy and confidentiality, and it is difficult to develop a trustful atmosphere that is so important in adolescent health care (see Box 1).

Box 1: Confidentiality and the "cohort medical examinations"

One student "We (the whole class or several classes) go to a medical facility, receive a list of examinations/specialists to go to. Then, we enter into the office (i.e., Ob&Gyn) in groups of five, stand around the doctor, and he/she asks us, one by one: "any complains? Do you have sexual relationships?" etc. How on earth can I tell him/her, if I am a 13-year-old boy, that I do have sexual relationship if I have another four classmates listening? We do have a medical office in the school, but there is nobody most of the time. How we see it should be organized, is to have a health provider permanently in the school health office, so we may come when we need."

Source Young people from a Kyrgyzstan, July 2008

By the mid-twentieth century, some countries started to question the usefulness of routine universal medical checkups, and either abolished them, or decreased their frequency (Borup and Holstein 2004; Gardner 2008). Interestingly, while in many countries the number of screening has been reduced, in some countries they are expanding (Shung-King 2013).

School Health Dialogue and Comprehensive School Health Initiatives

In 1991, a WHO report on comprehensive school health education returned to a wider focus of school health services beyond just screening and first aid. WHO endorsed the incorporation of a comprehensive curriculum of health education, increased physical education, continued

preventive services, as well as changes to school environments (WHO/UNESCO/UNICEF 1992). It was based on the realization that the old clinically oriented paradigm did not reflect the epidemiological transition, and SHS therefore lagged behind the changing needs of students. New morbidities—such as HIV, mental health problems, obesity, chronic conditions, and violence—required a new approach that paid more attention to social determinants of health and individualized health promotion, and less focus on screening procedures (Frikha et al. 2004; Michaud 2006). Called Health Promoting Schools in Europe, and the Comprehensive School Health Program in North America, it was promoted as an intersectional approach to better engage school staff and school health professionals in changing the school environment, policies, curriculum, and services to promote healthy growth and develop, and to prevent disease (Deschesnes et al. 2003). The initiatives called for multidisciplinary teams made up of school staff and school health professionals to work together.

This increased focus on school health promotion efforts resulted in a wave of reforms of school health services in European countries (WHO Regional Office for Europe 2010a) and has become a key priority in several jurisdictions in Canada and the USA (Deschesnes et al. 2003). In Denmark, in 1995 health dialogue was introduced to reduce routine screening procedures of the students' height and weight, hearing, and vision (Borup and Holstein 2004). In Croatia, since the reforms in 1998, school health services began providing exclusively preventive healthcare measures. In Belgium, in 2002, a law changed the school medicine system to a school health promotion system (WHO Regional Office for Europe 2010a). A common feature of these reforms was the increasing importance of the need for an individual health dialogue with students. The system where the school nurse decided when and for what reason to see the student was replaced by a system where the students have the possibility, in addition to scheduled medical examinations, to drop into the nurse's office when they need it. At the same time, the focus on whole-school health promotion initiatives also meant that school nurses or school doctors might lead a School Wellness Committee, whose members include teachers, administrators, student representatives, and in some cases even parents, in examining school policies and programs to promote a healthy lifestyle.

Many reforms in school health services were driven by structural reforms in health systems (Seip 1994). The transition to family medicine and the strengthening role of the general practitioner, the trends toward decentralization, and the changing modalities to finance health care affected school health services in many countries. Chapter 25 provides case studies from Albania, Republic of Moldova, Ukraine, and Tajikistan on how structural reforms triggered school health services reforms.

While many countries look afresh at the scope and the role of school health services, many still operate on the old infection control paradigm and see the school nurse as the "medical police." As one stakeholder from the education sector told us in 2008: "I tell you the truth why I need a school nurse: when I have a sanitary inspection I need someone to be responsible for whatever deficiencies will be found." In developing countries, SHS were born about 4–5 decades later than in most industrialized countries, and some are only now undergoing the process of paradigm shift from "infection control" to "social care" paradigm. Yet, other developing countries probably have not started this shift.

The focus on hygiene is still very relevant in developing countries because the lack of access to clean drinking water, running water, and functioning toilets is not a reality everywhere, especially in rural areas. New morbidities—mental health, violence, obesity—however require urgent attention, and the need to reorient health services is voiced in developing countries as well. In Tunisia, for example, 25 years after the establishment of school health services, a new ministry policy redefined the principles of school health services to include mental health and health education (Frikha et al. 2004).

School Health Services in the Era of Gatekeeping, Evidence-Based Medicine, and Fiscal Austerity

From the inception of school health services, the medical community was vigilant in stopping medical treatments as a part of their functioning (Maldonado 2015). Gardner (2008) describes the Borough of Kidderminster's instructions to its new School Medical Officer in 1905. Its direction to the officer demonstrates the medical community influence. The officer may discover the need for glasses, but cannot prescribe; may notice a heart murmur but can only notify the general practitioner. Gardner (2008) describes that when Surrey County Council eagerly appointed 12 Medical Officers of Health to cover 182 schools to monitor disease outbreaks, "local doctors already in Situ were both anxious and even jealous of the powers and influence that these new school doctors might have—fears that continued to dog the service. In 1905, medical sensitivities became deeply involved in the politics of setting up the School Medical Service. The Government's Interdepartmental Committee, which was charged with progressing school inspections, recognized that the role of a School Medical Officer could clash with that of local General Practitioners and recommended restricting the work of school medical officers."

One hundred years later, this conflict between the role of the general practitioners and school health personnel is still not resolved. As described in the next chapter in 2004 in the Republic of Moldova, school nursing was close to being shut down because the newly founded National Health Insurance company could not figure out what school nurses do in addition to what the general practitioner is supposed to do (WHO Regional Office for Europe 2010b). Even today, the division of roles and responsibilities between school health personnel and general practitioners/family doctors is one of the most commonly reported challenges (Baltag et al. 2015).

As the next sections of this chapter show, there are a limited number of studies that have assessed the effectiveness of interventions by school health services. This poses challenges in times of increasing accountability on how public funds are spent, and fiscal austerity. We are in an era when healthcare services are not merely provided, but commissioned. Commissioning is an outcome-driven form of healthcare planning or purchasing, which aims for a sustainable improvement in the health of a specified population (Caan et al. 2015). Defining the outcomes for commissioning school health services might be difficult, but not defining them is risky. It has been reported that school health personnel are dismissed to decrease the financial costs of services (Zaba and Bukartyk-Rusek 2002). And, this is more likely to happen when the value of the services is not well articulated. Good school nursing operates within the all-school approach, and teamwork between a range of actors (e.g., teachers, health visitors, parents) is involved. To distill the role of school nursing/school health services in this wider environment is difficult. Earlier we have proposed a school health services performance assessment framework based on health systems outcomes of effectiveness, equity, responsiveness, and efficiency (Baltag and Levi 2013). There is a global need to develop evidence-based indicators of adequate services, which are needed to monitor the performance of school health services, and to inform purchasing decisions.

The rest of the chapter describe school health services globally, based on data from 102 countries, and reflect upon the future of school health services.

Organizational Models of School Health Services

There is a great diversity in how school health services are organized around the globe. School-based health clinics or centers, increasingly common in the USA, focus on the provision of individual care. Another common model is based on having a school nurse, whose role includes not just individual clinical services, but

a combination of group-based health promotion, prevention, infectious disease control, screening, individual health treatments, case management for chronic conditions, and referrals for further health services (American Nurses Association & National Association of School Nurses 2011; Barnes et al. 2004; Lee 2011; Notara and Sakellari 2013; The Welsh Assembly Government 2009).

Some information about how school health services are organized in various countries is available in a recent publication that provide an overview of school health services based on data from 102 countries (Baltag et al. 2015). While this chapter summarizes the key characteristics of each organizational model, the reader can find more detailed information in that publication.

Depending on the site of service provision (school premises or off-site), and the type of personnel (dedicated or not), five models could be identified (see Fig. 24.1).

School-based provision appears to be the most common, found in 97 out of 102 countries including 24 countries where services were provided both on school premises and in healthcare facilities (Baltag et al. 2015).

School-based health services by on-site personnel. This model is characterized by the availability of school health professionals that are permanently or at least based in the school part-time, and is the most common (51 countries) (Baltag et al. 2015). This model is common in many European countries, but also found elsewhere (Baltag and Levi 2013). In Korea, for instance, school health services to students are provided by a school nurse and psychologist who are based in school full time. Usually, in each school, there is a special room for consultations (WHO 2013b). In New Zealand, in a representative sample of that country' schools, it was shown that 88.6 % of schools provided some level of school-based health service, with the majority of schools (54.5 %) employing on-site nursing services (Denny et al. 2012).

School-based health services by visiting personnel. This is the second most common model, found in 45 out of 102 countries (Baltag et al. 2015). The visiting personnel may be dedicated school health personnel (the UK and the Netherlands), or primary care providers from the circumscribed facilities (Republic of Srpska, Bosnia and Herzegovina). They visit schools according to a schedule for regular health screenings in predefined grades of students. A variation of this model is when services are provided by visiting (mobile) teams. In

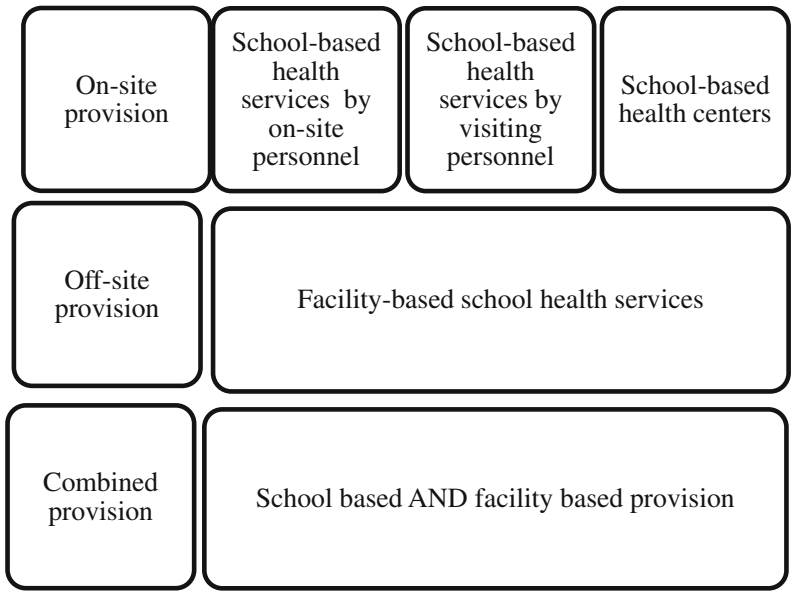


Fig. 24.1 Organizational models of school health services

Singapore, as an example, mobile health teams, called school health services field teams, travel to the schools to conduct health screening and immunization for students. The mobile team consists of a doctor, registered nurses, and enrolled nurses. The team spends an average of eight days per year in each school, depending on student enrollment (WHO 2013a). In Flanders, Belgium, services are provided by teams from specialized Centers of School Health Care represented by a social worker, a psychologist, a nurse, and a school doctor (WHO Regional Office for Europe 2010a).

School-based health centers are common in the USA and parts of Canada. These are health clinics located inside the school building or on the school campus. Students receive care in school-based health centers from a multidisciplinary team of professionals. Typically, a medical assistant supports a nurse practitioner or a physician assistant. More than half of the centers provide mental health services, most frequently through a master's level social worker, psychologist, or substance abuse counselor. A part-time pediatrician or family physician may also be part of the staff. A center may have access to other part-time professionals, including nutritionists, health educators, social services case managers, dentists, dental hygienists, substance abuse counselors, and others, depending on the needs of the students and the resources available in the community. This model of school-based health care is resource-intensive, and funding was reported as a potential constraint on their growth (National Research Council and Institute of Medicine 2009).

Facility-based school health services are when students are invited for health screenings to local healthcare facilities or school health offices which are not based in schools. This was found to be the case in 26 countries of 102 countries (Baltag et al. 2015). In the Netherlands, school health personnel can either visit periodically students in the school premises, or students are invited to visit the public health service depending on local preferences. In the UK and some communities in Denmark, school nurses are performing regular visits to schools but students can also "drop-in" at the nurse's office when they feel the need (WHO Regional Office for Europe 2010a).

These models are not a clear-cut; many countries or individual schools will have a *combination of school-based and facility-based provision* of health services by both on-site and visiting personnel. In Singapore, in addition to visiting mobile teams that provide screening and immunization, there are 11 registered nurses that provide on-site services to 12 secondary schools and two post-secondary schools. They conduct counseling and administer intervention programs such as weight management and smoking-cessation programs for students. In New Zealand, about half of schools employ both visiting health personnel and an on-site nurse. In the European region, many countries (i.e., Tajikistan and Albania) have on-site nursing services, and there are also visits by healthcare providers from the circumscribed facilities (WHO Regional Office for Europe 2010a). As shown above in the examples of the UK, Denmark, and the Netherlands, school-based service provision may be combined with drop-in services.

School Health Personnel

The majority of countries that have one or another form of school health services employ dedicated school health personnel, only when the provider does not serve other population groups. In the majority of cases, the dedicated personnel are based on school premises (51 of 102 countries) (Baltag et al. 2015). Most often, it includes nurses, school doctors, psychologists, dentists, social workers, and counselors. The non-dedicated personnel most often included general practitioners/family doctors, psychologists, psychiatrist, and nurses.

Target Population for School Health Services

The target group for school health services in the published literature ranges from 1.5- to 26-year-olds (Baltag et al. 2015). The target group could be defined based on school grades (e.g., first to twelfth grade) (Baltag and Levi 2013) or their subgroups (e.g., primary, middle, and secondary school) (Ministère de la Santé Burkina Faso 2008), characteristics other than age and grade (e.g., adolescents and children with chronic conditions), or a combination of age with a factor of vulnerability (e.g., war-affected 10- to 13-year-old children, 7- to 18-year-old children with special needs) (Barry et al. 2013). Sometimes the target group is defined by sex, but usually it is broadly defined as "all students" or something similar.

Normative Staffing Level

The normative staffing level varies a lot between countries, and countries use different modalities to express it. Common indicators include the following: (1) nurse-to-student ratio, (2) nurse-to-student with special needs ratio, (3) number of nurses per one school, (4) number of teams per number of schools/students, (5) doctor-to-student ratio, and (6) dentist-to-student ratio.

The Package of School Health Services

Chapter 15 of this book presented the leading causes of mortality and ill health in adolescents. These are largely preventable causes: road traffic injury, mental health problems including suicide, HIV, lower respiratory infections, interpersonal violence, iron deficiency anemia, and maternal causes in 15- to 19-year-old females globally (WHO 2014).

An important question is therefore how school health services today respond to these causes. A review based on data from 102 countries identified that school health services are usually provided in 16 health areas, including infectious diseases, mental health, nutrition, sexual and reproductive health, dental health, vision, hearing, emergency care, substance use, chronic illnesses, musculoskeletal disorders, violence, endocrinology, neurology, and other services. Figure 24.2 shows the most popular interventions.

With the exception of mental health interventions that are often part of a project, other interventions are usually provided routinely.

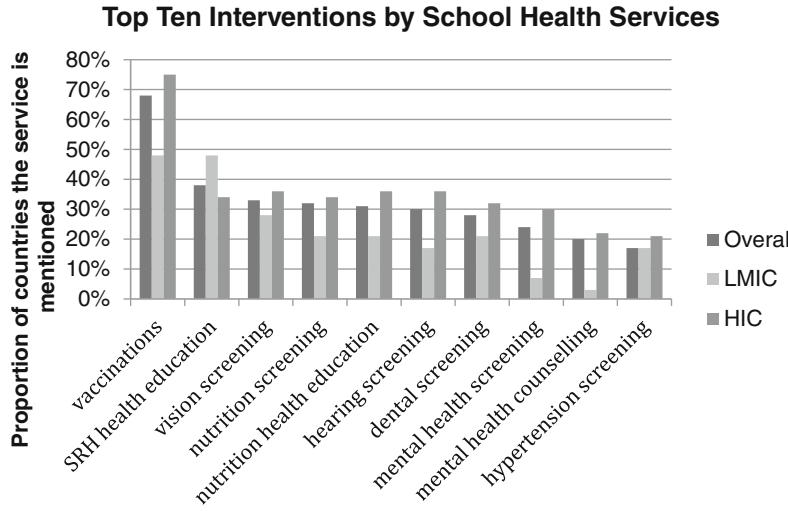


Fig. 24.2 The most popular SHS interventions. *Source* Baltag et al. (2015)

Available data seem to suggest that important causes of mortality and ill health in adolescents such as: mental health problems, violence, injuries, and chronic conditions are neglected in school health services (Baltag et al. 2015).

Organizational Issues

There are many organizational challenges, which countries have in common when implementing and maintaining school health services. In low- and middle-income countries and high-income countries, the issues of shortage of human resources, poor coordination, inadequate financing, low community involvement, equity, and inadequate policies to support the services are common (Baltag and Levi 2013; Baltag et al. 2015).

Evidence of Effectiveness for Various Outcomes

The impact of school health services ultimately will depend on the effectiveness of interventions applied. There are two facets to this question: One is "What interventions by school health services have been proven effective for certain outcomes?" and another is "What do we know about the effectiveness of interventions commonly applied in school health services?"

There are a limited number of studies that have assessed the effectiveness of interventions by school health services. Of these, most have actually focused on the effectiveness of staffing ratios or amount of hours school staff are present in addressing specific health issues. So, for example, Guttu et al. (2004) conducted a study across several school districts in one region of the USA. They compared nurse-to-student staffing ratios and the amount of vision screening, diabetes and asthma monitoring, and health counseling that was provided to students; and whether referrals for health concerns resulted in actual access to healthcare services. They found schools with lower ratios (closer to 1 nurse per 750 students) had more screening and health services provided, and better referral and follow-up compared to other health services. Similarly, a national study in New Zealand, after controlling for potential differences between schools in regions across the country, found that schools which had a school health staff ratio of 10 h of care or more per 100 students per week had much lower teen pregnancy rates among sexually active students than those schools with lower staffing (Denny et al. 2012). These were observational studies, however, not randomized trials.

Nurse case management of students with chronic conditions such as asthma is an area of intervention with some research evidence. One study, a longitudinal observational comparison of outcomes among students with asthma who had at least one nurse visit compared to those without any visits, found that students with visits were more likely to have asthma medications at school the following year, and to have a reduced asthma severity (Taras et al. 2004). Another study involved a group-randomized control trial of a school nurse case management intervention for students with asthma, compared to usual school nursing practice in the control schools (Levy et al. 2006). This study found schools students with asthma in the schools with the asthma case management had fewer days absent, fewer emergency department visits, and fewer hospitalizations than those in the usual care group.

Other interventions with randomized trial evidence involved individual one-on-one care, group interventions with students, families, and staff, as well as interventions strictly at the school environment level, all clear examples of public health practice. These include a smoking-cessation intervention (Pbert et al. 2006), a school-level nurse-directed intervention to increase physical activity and reduce obesity (Wright et al. 2013), as well as a school nurse toilet inspection program to improve hygiene supplies in schools (Ramos et al. 2011).

All of the following studies were conducted in the USA. One is a randomized trial of a brief intervention by the school nurse using scripted cognitive behavioral techniques in four visits of smoking-cessation counseling, compared to

controls who received the same number of visits but neither got pamphlets nor an opportunity to ask the nurse questions (Pbert et al. 2006). Students in the intervention group reported lower amounts and frequency of smoking at three months post-intervention. This was nearly twice as many students abstaining at three months, compared to those in the control group. Wright et al. (2013) found that their nurse-managed program led to reductions standardized BMI scores at 12 months post-intervention. The intervention involved six weeks of physical activity sessions, nutrition classes, a whole-school wellness initiative, professional development for teachers, newsletters for parents, and policy changes around healthy foods at school, increased physical activity, participation in formal physical education classes, and reduced sedentary TV watching.

Finally, the school nurse bathroom inspection program showed regular nurse inspections and follow-up with school administration and janitorial staff led to increased consistency of hand washing supplies in elementary school toilets compared to control schools whose nurses conducted the inspections but only reported to the Department of Health (Ramos et al. 2011). These are but a few of the types of interventions school health staff practice to promote the health of students in schools; clearly, more research is needed to evaluate the effectiveness of school health services beyond the USA.

We do not seem to know much about the effectiveness of other interventions commonly applied in school health services. Figure 24.2 presented the most common interventions. While the effectiveness of vaccinations is well researched, the evidence base for other common interventions is weak. For example, visual screening is the third most common intervention, popular in both high-income countries and low- to middle-income countries. However, reviews that intended to evaluate the effectiveness of vision screening programs carried out in schools found no trials were conducted (Powell et al. 2005; Powell and Hatt 2009). Hearing screening, another popular intervention, was found beneficial in newborns (Nelson et al. 2008), and with 55- to 74-year-old adults (Davis et al. 2007). There are no systematic reviews or randomized controlled trials on the acceptability, benefit, and costs of screening for hearing disability in school-age children.

Mental health screening (which included screening for depression, anxiety, general well-being, and externalizing behavior problems) is the fourth most popular intervention. Studies that investigated the use of screening in the context of depression in the general population found it was associated with a modest increase in the recognition of depression by clinicians, although the effect depended on how the case-finding instruments were administered (Gilbody et al. 2008). Finally, screening of children for hypertension was argued necessary in the context of type I diabetes (Nambam et al. 2014), but the purposes for carrying out this screening in countries that have it part of school health services are not clear (Baltag et al. 2015).

Although counseling is a very popular intervention, very rarely are cognitive behavioral therapy, problem-solving approaches, or motivational interviewing—approaches that have good evidence of effectiveness—mentioned as part of school health services. When there is a regular checkup in place, the opportunity of contact between the healthcare provider and the student is not used in order to have a health dialogue (Irwin et al. 2009).

Despite the fact that contraceptive service provision is an effective intervention to reduce pregnancy before the age of 20—a public health concern for many countries in the world (WHO 2011)—only very few countries indicate a policy for contraceptives to be dispensed in schools: Burkina Faso, New Zealand, the UK, and the USA (Anderson and Lowen 2010; Denny et al. 2012; Owen et al. 2010; Ministère de la Santé Burkina Faso 2008; Richardson-Todd 2006a, b). At the same time, interventions that violate human rights, such as mandatory pregnancy testing, have been reported in some countries (Olum 2010; Center for Reproductive Rights 2013).

Ways Forward

School health services evolve over time in an attempt to align their scope with the changing health and developmental priorities. Many countries have been, and still are, in the process of a school health services reform (Guerrier-Sagnes et al. 2006; Baltag and Levi 2013). Cyprus, Denmark, Hungary, and Northern Ireland reported an ongoing reform in 2009, and another 17 countries reported that some kind of revision of school health services took place within five years prior to 2009 (WHO Regional Office for Europe 2010a). Between 2008 and 2011, Albania, the Republic of Moldova and Ukraine undertook situation analyses of national school health services and developed roadmaps to improve their relevance to present-day priorities (Baltag et al. 2015).

Among the important aspects of school health services that have changed or have been reformed, the common features are as follows:

- Moving from classroom health education to effective individual counseling techniques;
- Moving from a traditional focus on sensorial and musculoskeletal deficiencies to addressing new concerns (mental health, chronic conditions, violence);
- Moving from visits scheduled by providers (when it is convenient to the providers) to visits when the student needs it. Many countries have systems in place where scheduled visits are planned, but students also have the possibility to drop-in at the school nurses' office whenever they have a concern or need advice;
- Moving from a focus on individual clinical assessments to family-level or school-wide health promotion interventions coordinated by the school health personnel;

To improve the responsiveness of school health services to modern priorities, the following areas for future research, policy, and practice are recommended (Baltag et al. 2015):

- Better alignment between priority health and development issues in adolescence in school health services content.
- Strengthen the evidence base for most common interventions and service delivery models, as well as the evidence base of the best value for money of school health services in various epidemiological and health systems contexts.
- Accelerate knowledge translation from research to school health practice so that interventions successfully applied in other fields, settings, and population groups become part of school health services portfolio.
- Improve the collection, analysis, and use of data on school health services to inform policy
- Develop and implement service standards to reduce variability and ensure a minimal required level of quality in school health services, to enhance accountability and to advocate for necessary resources. Regional (WHO Regional Office for Europe 2014) and global standards (Nair et al. 2015) might accelerate this process.
- More active engagement in global, regional, and national advocacy so that school health services are increasingly recognized as important contributors to adolescent health and development and good investment of public funds.

References

Alcorn, G. D. (2001). *Giving voice to school nursing as a primary health care specialty*. MA (Applied) thesis, Victoria University of Wellington, Wellington.

American Nurses Association & National Association of School Nurses. (2011). *School nursing: Scope and standards of practice* (2nd ed.). Silver Spring, MD: Nursebooks.org.

Anderson, J. E., & Lowen, C. A. (2010). Connecting youth with health services: Systematic review. *Canadian Family Physician, 56*, 778–784.

Baltag, V., & Levi, M. (2013). Organizational models of school health services in the WHO European Region. *Journal of Health Organisation and Management, 27*, 733–746.

Baltag, V., Pachyna, A., & Hall, J. (2015). Global overview of school health services: Data from 102 countries. *Health Behaviour and Policy Review, 2*(4), 268–283.

Barnes, M., Courtney, M. D., Pratt, J., & Walsh, A. M. (2004). School-based youth health nurses: Roles, responsibilities, challenges, and rewards. *Public Health Nursing, 21*, 316–322.

Barry, M. M., Clarke, A. M., Jenkins, R., & Patel, V. (2013). A systematic review of the effectiveness of mental health promotion interventions for young people in low and middle income countries. *BMC Public Health, 13*, 835.

Borup, I., & Holstein, B. E. (2004). Social class variations in schoolchildren's self-reported outcome of the health dialogue with the school health nurse. *Scandinavian Journal of Caring Sciences, 18*, 343–350.

Caan, W. (2009). Championing school nursing: An interview with Woody Caan. *British Journal of School Nursing, 4*(1), 10–11.

Caan, W., Cassidy, J., Coverdale, G., Ha, M. A., Nicholson, W., & Rao, M. (2015). The value of using schools as community assets for health. *Public Health, 129*, 3–16.

Carrillo, A. M. (1999). El inicio de la higiene escolar en México: Congreso Higiénico Pedagógico de 1882. *Revista Mexicana de Pediatria, 66*(2), 71–74.

Center for Reproductive Rights. (2013). *Forced out. Mandatory pregnancy testing and the expulsion of pregnant students in Tanzanian schools*. Author. Retrieved from http://www.reproductiverights.org/sites/crr.civicactions.net/files/documents/crr_Tanzania_Report_Part1.pdf

Clayton, S., Chin, T., Blackburn, S., & Echeverria, C. (2010). Different setting, different care: Integrating prevention and clinical care in school-based health centers. *American Journal of Public Health, 100*, 1592–1596.

Davis, A., Smith, P., Ferguson, M., Stephens, D., & Gianopoulos, I. (2007). Acceptability, benefit and costs of early screening for hearing disability: A study of potential screening tests and models. *Health Technology Assessment, 11*, 1–294.

de Knecht-van, E. A. (1994). Development of the medical care for school children in the Netherlands 1796–1904. *Gewina, 17*(4), 219–234.

Denny, S., Robinson, E., Lawler, C., Bagshaw, S., Farrant, B., Bell, F., et al. (2012). Association between availability and quality of health services in schools and reproductive health outcomes among students: A multilevel observational study. *American Journal of Public Health, 102*(10), e14–e20.

Deschesnes, M., Martin, C., & Hill, A. J. (2003). Comprehensive approaches to school health promotion: How to achieve broader implementation? *Health Promotion International, 18*, 387–396.

Fernandez, B. T. (1998). Finlay como promotor de la higiene escolar. *Revista Cubana de Higiene y Epidemiología, 36*(2), 158–160.

Frikha, J. M., Ben, A. A., Ghedira, A., & Ghannem, H. (2004). Adolescents' expectations with regard to school health services in Sfax, Tunisia. *Sante Publique, 16*(3), 447–458.

Gardner, P. A. (2008). A brief history of the rise and fall of the School Medical Service in England. *Public Health, 122*(3), 261–267.

Gilbody, S., Sheldon, T., & House, A. (2008). Screening and case-finding instruments for depression: A meta-analysis. *Canadian Medical Association Journal, 178*(8), 997–1003.

Guerrier-Sagnes, F., Fortin, M., & Beynel-Melinand, F. (2006). Planning and assessing the activity of a school health service based on health and social indicators: The experience of Villeurbanne. *Sante Publique, 18*, 141–150.

Guttu, M., Engelke, M. K., & Swanson, M. (2004). Does the school nurse-to-student ratio make a difference? *Journal of School Health, 74*(1), 6–9.

Hahn, S. (1993). 100 years ago: The first school doctors in Leipzig—A contribution to the history of school health in Germany. *Gesundheitswesen, 55*(2), 76–81.

Hawkins, J. W., Hayes, E. R., & Corliss, C. P. (1994). School nursing in America—1902–1994: A return to public health nursing. *Public Health Nursing, 11*(6), 416–425.

Independent Expert Review Group. (2013). *Every woman, every child: Strengthening equity and dignity through health: The second report of the independent Expert Review Group (iERG) on Information and Accountability for Women's and Children's Health*. Geneva: World Health Organization.

Interagency Youth Working Group. (2011). *The millenium development goals: What do they mean for youth?* Retrieved from http://iywg.wordpress.com/2011/01/19/the-millennium-development-goals-what-do-they-mean-for-youth/

Irwin, C. E., Adams, S. H., Park, M. J., & Newacheck, P. W. (2009). Preventive care for adolescents: Few get visits and fewer get services. *Pediatrics, 123*(4), e565–e572.

Lee, R. L. (2011). The role of school nurses in delivering accessible health services for primary and secondary school students in Hong Kong. *Journal of Clinical Nursing, 20*(19–20), 2968–2977.

Levy, M., Heffner, B., Stewart, T., & Beeman, G. (2006). The efficacy of asthma case management in an urban school district in reducing school absences and hospitalizations for asthma. *Journal of School Health, 76*(6), 320–324.

Maldonado, N. (2015). *Historia de los servicios de salud pública: Una visión desde 1900 hasta el inicio de la regionalización*. Retrieved from http://www.galenusrevista.com/Historia-de-los-servicios-de-salud.html

Mason-Jones, A. J., Crisp, C., Momberg, M., Koech, J., De, K. P., & Mathews, C. (2012). A systematic review of the role of school-based healthcare in adolescent sexual, reproductive, and mental health. *Systematic Reviews, 1*(1), 49.

Michaud, P.-A. (2006). La santé scolaire à la croisée des chemins. *Revue Médicale Suisse, 69*, 1507–1508.

Ministère de la Santé Burkina Faso. (2008). *Directives nationales sur la santé scolaire et universitaire au Burkina Faso*. Ouagadougou, Burkina Faso: Author.

Retrieved from http://www.expandnet.net/PDFs/Burkina%20Faso_Directives%20de%20sante%20scolaire%20et%20universitaire.pdf

Nair, M., Baltag, V., Bose, K., Boschi-Pinto, C., Lambrechts, T., & Mathai, M. (2015). Improving the quality of health care services for adolescents, globally: A standards-driven approach. *Journal of Adolescent Health, 57*(3), 288–298.

Nambam, B., DuBose, S. N., Nathan, B. M., Beck, R. W., Maahs, D. M., Wadwa, R. P. … Haller, M. J. (2014). Therapeutic inertia: Underdiagnosed and undertreated hypertension in children participating in the T1D exchange clinic registry. *Pediatric Diabetes*.

National Research Council and Institute of Medicine. (2009). *Adolescent health services: Missing opportunities*. Washington, D.C.: The National Academies Press.

Nelson, H. D., Bougatsos, C., & Nygren, P. (2008). Universal newborn hearing screening: Systematic review to update the 2001 US Preventive Services Task Force Recommendation. *Pediatrics, 122*(1), e266–e276.

Notara, V., & Sakellari, E. (2013). Health promotion and school health: The health visiting role in Greece. *International Journal of Caring Sciences, 6*(1), 37.

Olum, M. A. (2010). Competing ideas on adolescent girls' sexuality: Mandatory pregnancy screening in secondary Boarding Schools in Kenya. *Erasmus Student Thesis Repository*.

Owen, J., Carroll, C., Cooke, J., Formby, E., Hayter, M., Hirst, J. … Sutton, A. (2010). School-linked sexual health services for young people (SSHYP): A survey and systematic review concerning current models, effectiveness, cost-effectiveness and research opportunities. *Health Technology Assessment, 14*(30), iii–255.

Patton, G. C., Ross, D. A., Santelli, J. S., Sawyer, S. M., Viner, R. M., & Kleinert, S. (2014). Next steps for adolescent health: A Lancet Commission. *The Lancet, 383*(9915), 385–386.

Pbert, L., Osganian, S. K., Gorak, D., Druker, S., Reed, G., ONeill, K. M., et al. (2006). A school nurse-delivered adolescent smoking cessation intervention: A randomized controlled trial. *Preventive Medicine: An International Journal Devoted to Practice and Theory, 43*(4), 312–320.

Powell, C., & Hatt, S. R. (2009). Vision screening for amblyopia in childhood. *Cochrane Database Systematic Re*views, *3*.

Powell, C., Wedner, S., & Richardson, S. R. (2005). Screening for correctable visual acuity deficits in school-age children and adolescents. *Cochrane Database Systematic Reviews, 4*.

Ramos, M. M., Schrader, R., Trujillo, R., Blea, M., & Greenberg, C. (2011). School nurse inspections improve hand washing supplies. *Journal of School Health, 81*(6), 355–358.

Richardson-Todd, B. (2006a). Providing a sexual health service for young people in the school setting. *Nursing Standards, 20*(23), 41–44.

Richardson-Todd, B. (2006b). Sexual health services in school: A project in a multi-agency drop-in. *Journal of Family Health Care, 16*(1), 17–20.

Seip, M. (1994). School health services in Norway—Rise and fall. *Tidsskrift for Den norske legeforening, 114*, 3620–3624.

Shung-King, M. (2013). From 'stepchild of primary healthcare' to priority programme: Lessons for the implementation of the National Integrated School Health Policy in South Africa. *South African Medical Journal, 103*(12), 895–898.

Sirebrenik, W. J. (2003). Datos históricos de la salud escolar. *Medwave*, *3*(9), e2823. Retrieved from http://www.medwave.cl/link.cgi/Medwave/Enfermeria/Oct2003/2823

Taras, H., Wright, S., Brennan, J., Campana, J., & Lofgren, R. (2004). Impact of school nurse case management on students with asthma. *Journal of School Health, 74*(6), 213–219.

The Welsh Assembly Government. (2009). *School nursing service framework wales*. Cardiff, UK: Author. Retrieved from http://gov.wales/topics/health/publications/health/reports/nursing/?lang=en

UNFPA. (2012). *Bali global youth forum declaration. International Conference on Population and Development Beyond 2014*. New York NY: United Nations Population Fund. Retrieved from http://icpdbeyond2014.org/uploads/browser/files/bali_global_youth_forum_declaration_final_edoc_v3-2.pdf

UNICEF. (2011). *The state of the world's children 2011. Adolescence: An age of opportunity*. New York, NY: United Nations Children`s Fund. Retrieved from, http://www.unicef.org/sowc2011/

WHO Regional Office for Europe. (2010a). *Pairing children with health services. The results of a survey on school health services in the WHO European Region*. Copenhagen: WHO Regional Office for Europe. Retrieved from http://www.childhealthservicemodels.eu/wp-content/uploads/2015/12/SHS-survey-pairing-children-with-health-services.pdf

WHO Regional Office for Europe. (2010b). *Youth-friendly health policies and services in the European Region. Copenhagen, WHO Regional Office for Europe*. Copenhagen: Author. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0017/123128/E94322.pdf

WHO Regional Office for Europe. (2014). *European framework for quality standards in school health services and competences for school health professionals*. Copenhagen: Author. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0003/246981/European-framework-for-quality-standards-in-school-health-services-and-competences-for-school-health-professionals.pdf?ua=1

WHO/UNESCO/UNICEF. (1992). *Report of the WHO/UNESCO/UNICEF consultation on strategies for implementing comprehensive school health education/promotion programmes,* Geneva, World Health Organization. Division of Health Education.

Retrieved from https://extranet.who.int/iris/restricted/bitstream/10665/61639/1/WHO_UNESCO_UNICEF_HED_92.3.pdf

Williamson, N. (2013). *Motherhood in childhood: Facing the challenge of adolescent pregnancy*. New York: United Nations Population Fund.

World Bank. (2012). *World development indicators database*. Washington D.C.: Author. Retrieved from http://databank.worldbank.org/data/home.aspx

WHO. (2011). *Preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries*. Geneva: Author. Retrieved from http://www.who.int/maternal_child_adolescent/documents/preventing_early_pregnancy/en/

WHO. (2013a). *The WHO survey on school health services in Singapore*. Geneva: World Health Organization. Retrieved from http://apps.who.int/adolescent/second-decade/section/section_6/level6_16.php

WHO. (2013b). *The WHO survey on school health services in the Republic of Korea. Geneva, Switzerland: World Health Organization*. Retrieved from http://apps.who.int/adolescent/second-decade/section/section_6/level6_16.php

WHO. (2014). *Health for the world's adolescents: A second chance in the second decade*. Retrieved from http://apps.who.int/adolescent/second-decade/

Wright, K., Giger, J. N., Norris, K., & Suro, Z. (2013). Impact of a nurse-directed, coordinated school health program to enhance physical activity behaviors and reduce body mass index among minority children: A parallel-group, randomized control trial. *International Journal of Nursing Studies, 50*, 727–737.

Zaba, R., & Bukartyk-Rusek, B. (2002). School hygiene in the past, present and future—In the opinion of the inspector of pediatrics and School Medicine and member of the European Society for Social Pediatrics (ESSOP). *Wiadomosci lekarskie, Suppl 55*(1), 615–619.

Zaiger, D. S. (2000). School nursing services: The early years. *Journal of School Nursing, 16*(3), 11–19.

School Health Services in Former Socialist Countries: Case Studies from Albania, Republic of Moldova, Tajikistan, and Ukraine

25

Valentina Baltag, Susanne Stronski and David Pattison

Introduction

Albania, the Republic of Moldova, Tajikistan, and Ukraine share a very similar socioeconomic and health system context in which school health services evolved, which explains the similarities between the current state of school health services in these countries. After independence, they faced common challenges such as a continued emphasis on a very traditional "medical" model for school health services including the routine use of interventions with weak evidence base. Overall, these services did not reflect significant changes within health and education relating to Health Promoting Schools approach.

Structural challenges pertained to the poor legal and normative support for quality improvement, funding, staffing, and infrastructure; lack of, or poorly implemented, structural mechanisms to ensure adequate workforce capacity and prestige of the profession; and fundamental lack of multiagency working. With the support of the WHO Regional Office for Europe, the four countries undertook a systematic revision of their national school health services. Experience of this undertaking and our reflections as first-hand observers are described in this chapter to help those planning similar work in other but comparable settings.

Background

Three countries—the Republic of Moldova, Tajikistan, and Ukraine—are members of the Commonwealth of Independent States (CIS), and all four are countries from the former socialist block. They all inherited from the former Soviet Union in the 1990s the Semashko model of healthcare organization. It was state-owned and state-controlled and brought enormous advances in population health in the former Soviet Union by ensuring universal coverage with basic healthcare services. The system was comprehensive but inefficient. It was highly specialized, with an emphasis on curative and inpatient care, while primary care has been neglected (Khodjamurodov and Rechel 2009; Lekhan et al. 2010).

Preschool and school units in these countries emerged following an experiment in 1968 in

Valentina Baltag is staff member of the World Health Organization. The authors alone are responsible for the views expressed in this chapter, and they do not necessarily represent the decisions or policies of the World Health Organization.

V. Baltag (✉)
Department of Maternal, Newborn, Child and Adolescent Health, World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland
e-mail: vba@euro.who.int

S. Stronski
School Health Medical Service, Zürich, Switzerland

D. Pattison
International Development, NHS Health Scotland, Edinburgh, UK

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_25

Leningrad when for the first time school health services were organized. This form of health care organized for children was then acknowledged and widely spread throughout the former USSR (Ministry of Health of Tajikistan 2011).

In Albania, many medical experts were trained in the Soviet Union and other Eastern European countries and despite the country's break with the Soviet Union in later years, many aspects of healthcare policy and planning continued to follow the Semashko model (Nuri 2002).

After independence in the early 1990s, the healthcare systems in these countries faced major financing problems (Khodjamurodov and Rechel 2010; Lekhan et al. 2010). Health, education, and social protection ceased to be considered priorities so received only "residual" funding. At the same time, funding assigned to the healthcare system was used inefficiently. In the Republic of Moldova, for example, only 20 % of the total value of healthcare expenditure was assigned to services provided to 80 % of patients in primary health care (Tarus 2010). In Tajikistan, the situation was aggravated by the consequences of the civil war; informal out-of-pocket payments became the main source of revenue, with particularly severe consequences for the poor (Khodjamurodov and Rechel 2010).

Not surprisingly, there was simultaneous and perhaps even more severe underfunding of school health services in the period after independence, with severe exodus of school health personnel. School health services were reduced to providing only immunization services and compulsory annual pupil medical examinations (Tarus 2010). The attrition of school health personnel was a reflection of the major reduction in the number of nurses—a trend witnessed throughout the CIS and one which ran counter to developments in countries of the EU (Lekhan et al. 2010). Staff were unequally distributed, both functionally and geographically (Atun et al. 2008; Lekhan et al. 2010; Khodjamurodov et al. 2010; Nuri 2002).

Consequently, countries were undergoing a complex transition toward new forms of management, financing and healthcare provision including reorientation toward primary care with the family doctor/general practitioner as a key player. In the Republic of Moldova, the reform also resulted in the successful introduction of mandatory social health insurance (Atun et al. 2008).

Another trend was toward decentralization. In the Republic of Moldova, conditions were created for rural health centers to operate as financially autonomous health institutions (Atun et al. 2008); in Ukraine, the centralized financing was replaced by extreme decentralization with functional subordination to the Ministry of Health, while managerial and financial subordination to the regional and local self-government (Lekhan et al. 2010).

The process of decentralization posed further challenges to school health services—neglected as they were during the process of reforms, the access to school health services become extremely uneven within countries (Ministry of Health of Tajikistan 2011; Ministry of Health of the Republic of Moldova 2008; Ministry of Health of Ukraine 2009).

The rest of the chapter describes briefly the history of school health services in four countries, their common features and challenges, the process of reforms, and main achievements to date.

School Health Services in Albania

Healthcare services in the educational institutions (nurseries, kindergartens, and primary schools) were developed around 1979 in line with the Political Bureau decision aiming at prevention as the main goal of the Albanian health system, and more specifically at infectious diseases prevention, and screening for physical and psychological risk factors.

Over the next 20 years, the Albanian system introduced a number of very specific regulations, which direct the nature and focus for school

health services and linked services. Currently, based on the 1992 law and the 1998 act no. 2560, health care is organized and run by the district Directorate of Public Health in cooperation with the District Board of Education and the Kindergartens and School Directorates. As of 2008, the school health team was composed of one pediatrician or General Practitioner for 1200–1500 children, and one nurse for 500–700 children.

School Health Services in the Republic of Moldova

The services were established in the Republic of Moldova during the 1960s and 1970s as part of the Soviet Union's five-year plans, with orders issued by the Soviet Ministry of Health. The main focus as reflected in several regulatory acts of the time was to offer pupils prevention services, health screenings, immunization, nutrition, and supervision of sanitary conditions. Special subdivisions, "school/preschool units," were established under the municipal children's polyclinics and district children's clinics (Tarus 2010).

Over the next 30–40 years, the Republic of Moldova system introduced a number of very specific regulations, which direct the nature and focus for school health services and linked services. A joint order of the Ministry of Health and Ministry of Education in 1989—raised for the first time—the issues of sexual education for pupils, prevention of alcoholism, drug addiction and smoking, and the promotion of healthy lifestyles. The order contained an approved list of medical equipment and medications for school healthcare consulting rooms, and heads of healthcare institutions were instructed to include specialists such as psychologists and career guidance experts among the staff of the school/preschool units (Tarus 2010).

A 1995 joint order of the same ministries for the first time included the job description of school physicians and nurses and introduced the annual reporting of morbidity rates with analysis of morbidity in school pupils. The order also included hygienic requirements and standards for organizing the education process in schools, and the definition of criteria for the yearly certification of schools.

An important change occurred in 2002 when a joint order of the Ministry of Health and the Ministry of Education changed the source of funding for school health services, which from then on was to be provided from the education budget of local public authorities (Tarus 2010).

School Health Services in Tajikistan

In Tajikistan, school health services were organized following the Leningrad experiment in 1968. Preschool/school units were established under the "district and municipal" policlinics. They were specialized divisions involving the pediatricians and nurses of preschool (i.e., nurseries, kindergarten) and school educational institutions including boarding schools. Each school had health stations with school-based personnel. The staffing standards were as follows: one pediatrician per 2000–2500 schoolchildren; one psychiatrist per 300 students with special needs; and one nurse per 700 schoolchildren and per 300 students with special needs.

The years of civil confrontation (1990–1997) had a severe impact on school health services. Many schools were ruined and health stations closed down due to lack of personnel. Since 1998, the country has been implementing a family medicine model on a pilot basis. Consequently, in the capital Dushanbe and some districts, family doctors started to serve the schools.

All other schools are presently served by the assigned pediatrician from the local outpatient health facilities.

School Health Services Ukraine

Although no reference document is known to us, it is safe to assume that school health services in Ukraine were established about the same period as they were in the Republic of Moldova and Tajikistan, in the 1960s and 1970s as part of the implementation of the five-year plans, and shared similar features.

A specific feature in Ukraine is that the national Nomenclature of medical specialties preserved the specialty of "Adolescent Medicine," a specialty that existed in the former USSR but was abolished in most of the Newly Independent States. This is perhaps why the Ukrainian regulatory framework pays much more attention to postgraduate training of healthcare personnel involved in school health services than we found in other countries.

Shared Characteristics and Triggers of Recent Reforms

Since the inception of school health services, in each country a range of bureaucratic systems have evolved to try and manage a very complex system across the country. The legal and normative framework was quite developed, and in all four countries, it declared the orientation toward health promotion. However, the job description of school health personnel found in national normative documents had a very clinical focus. As a result of this, generic health promotion and multiagency working in line with WHO's Health Promoting Schools approach has been limited.

Another noticeable similarity is that at some point, special "school/preschool units" were established within municipal children's polyclinics and district children's clinics. Health care to pupils in educational institutions was provided by pediatricians jointly with school-based health personnel. Their main tasks included immunizations and periodic checkups of pupils according to a predefined schedule. After independence this model was lost, and during a decade or two the attrition of school-based personnel was quite important.

When the family medicine reform accelerated pace, the intention was to involve the family doctor in school health services provision. By that time, many of the schools would not have dedicated school personnel, while the capacity of newly retrained family doctors in adolescent friendly service provision was (and is still) very low. Moreover, the widespread practice of conducting the checkups in cohorts (see Box 1 in chapter) left little opportunities to discuss confidentially sensitive issues.

An important evolution happened in the 1980s to early 1990s when a joint ownership of school health services by the health and education sector was instituted. We found that despite its progressive nature, the good intentions behind this policy have not yet materialized as expected. Genuine health promotion and multiagency working, promoted in documents, were not happening in practice. Moreover, in some ways the already precarious situation was worsened by the fact that the new owner—the education sector—did not honor some of its obligations such as to ensure continuous professional development of school health personnel. A range of reasons why this might have happened are discussed next.

The accumulation of unresolved issues inherited from the Semashko centralized state-owned model of healthcare organization and management, exacerbated by certain aspects of healthcare reforms after independence as described above, triggered the need for reforms. Some imminent threats accelerated the process (see Box 1).

Box 1: Reform to Survive **In the Republic of Moldova**, compulsory health insurance was introduced in January 2004. While it brought positive changes in many aspects such as financial protection of vulnerable groups, it has also had unforeseen consequences for the School Health Service (SHS). At certain points, their very survival has been endangered (Tarus 2010). The framework of the compulsory health insurance made it clear that health personnel based in institutions that do not belong to the Ministry of Health (MoH) cannot be financed by the health insurance company. It was proposed that a family physician and his/her team take over all activities performed by school-based healthcare workers. This in fact meant the abolishment of school-based health services. The MoH and the MoE actively opposed this happening because they assumed that children from disadvantaged communities with no family doctor around would be underserved. Besides, the MoH and the Ministry of Education (MoE) believed that family physicians would not be able to meet all children's health care and development needs if the service was reduced to annual checkups.

This prompted the two ministries to work together to defend the need for "additional" services to what the health insurance company financed through family doctors. Furthermore, the case was made that school nurses were contributing to the education process, thereby justifying the remuneration of healthcare workers by local public authorities from the education budget. This resulted in corresponding amendment in the legislation to enact the provisions on additional services from the budgets of education institutions (Tarus 2010). By the same amendment, the MoH was charged to develop jointly with the MoE the nomenclature of additional services to be approved by the government. At this point, WHO support was sought.

In Ukraine, in 2008 the MoH expressed its concern about the quality of school health services in Ukraine and its willingness to undertake a reform to enhance its performance and effectiveness. It was at the time when media and society attention was incited by the death of an adolescent coincidental with a vaccination episode, and another death of a pupil during the physical education lesson. In August 2008, the WHO Country Office in Ukraine received an official letter from the Mohr requesting the support for a service revision and to develop a plan for its further reorganization. The request was made because it was known that WHO had supported the Republic of Moldova in a similar endeavor. Based on this request, WHO Regional Office for Europe supported a situational analysis followed by the implementation of other steps (Stronski et al. 2009).

The Process of Reforms

With the support of WHO, countries followed a step-by-step approach to plan the reform of school health services and referrals. It was a combination of a semi-structured process and supporting tools that facilitates the evidence-informed revision of school health services with the identification of priority problems and actions and supports the implementation of selected components of the reform (see Fig. 25.1). The approach is based on the same philosophy that underpins evidence-based policy development elsewhere, and includes situation analysis (what the problems are), identification of policy options (analysis of the evidence on what works in general to address similar problems, and what is likely to work in the country specific

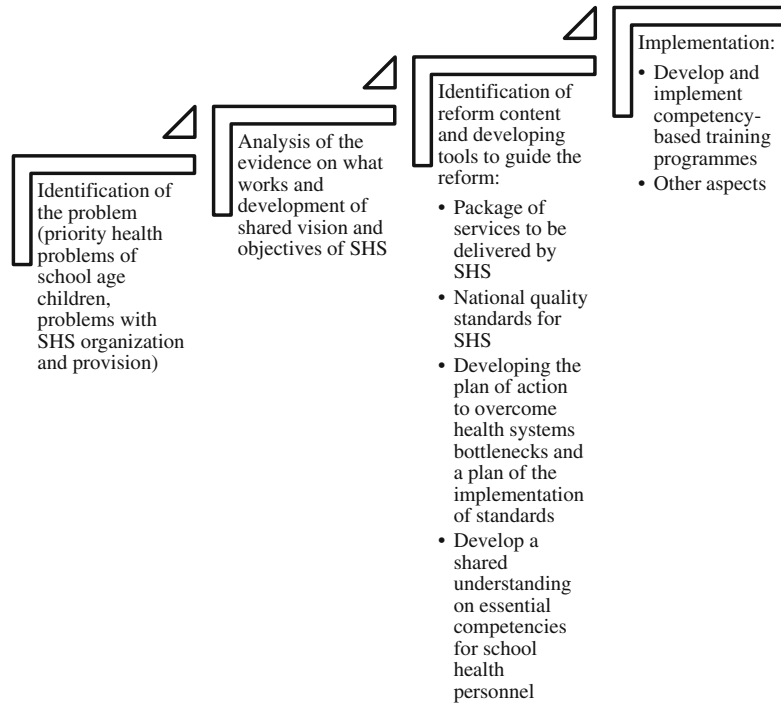


Fig. 25.1 A step-by-step process to school health services reform in Albania, Republic of Moldova, Tajikistan, and Ukraine

context in particular), and identification of the steps required to make the change, as well as potential barriers and actions to overcome them.

The workshops organized as part of this process were attended by representatives of the MoH, the MoE, regional health authorities, teachers, school health staff, and pupils (Stronski 2009, 2011; Stronski et al. 2009). After about one year from the start of the process, it became apparent that the practical application of the concept of multiagency working was not entirely clear to the national teams. To see how it was done in other countries, a valuable addition to the process was the introduction of study visits to Scotland. Moldovan and Albanian teams benefited from these visits.

Scotland was chosen because of its long history of school health services and well-developed tradition of intersectoral collaboration, and policy documents specifically directed at school health services. Also, NHS Health Scotland is a WHO Collaborating Centre, and country support was part of the mutually agreed work plan.

Common Challenges

The analyses that countries conducted to inform the process identified common challenges (see Table 25.1).

Among the countries mentioned, collaboration with the educational sector and the low prestige of school nurse is a big challenge. The situation described by a provider from the Republic of Moldova applies to some extent to other countries as well: “Because school is an entity of the education sector, we (school nurses) are listed in the staff lists under the category ‘other staff’—along with janitors and auxiliary staff. The same with the salaries—we do not benefit from salary bonuses

Table 25.1 Common challenges as identified in situation analyses

Legal and normative constrains	Poor legal and normative support: • Lack of a legal framework for school health services • Discrepancies among various regulations • School health personnel are not aware of existing regulations • Services provided are very heterogeneous, depending more on persons than on any standards • Lack of alignment with family medicine principles • Outdated norms for sanitary-hygienic conditions
	Low/uneven access and quality of service provision
	Undeveloped mechanisms for monitoring, evaluation, and quality improvement
Outdated paradigm	Extensive use of ineffective screening strategies, poor referral, and information transfer systems
	Lack of proper orientation toward health promotion
	Cumbersome and inefficient reporting/documentation system
Lack of structural support for funding, staffing, and infrastructure	Low funding for SHS in general and low salaries of SHS personnel
	Shortage of school health personnel in some areas/schools
	Adequate staff-to-pupil ratios
	Absence of SHS offices in many schools
	Inadequate equipment, water, and sanitation supply
Lack of poorly implemented structural mechanisms to ensure adequate workforce capacity	Poor training and professional development opportunities for school health personnel
	Poor planning and referral for in-service training opportunities for school nurses by the education institutions and little recognition of specific training requirements for different professionals within SHS
	Lack of professional identity and low prestige of the profession School nurses are disadvantaged in many aspects compared to medical staff working in health institutions. For instance, school nurses are not united within a professional association; they do not have a network of information sharing, experience exchange, tutorial supervision, and support (Tarus 2010)
Fundamental lack of multiagency working	Insufficient collaboration with education sector There is a fundamental lack of understanding of the Health Promoting School approach; there is little recognition of the importance and value of multiagency/disciplinary working (Stronski et al. 2009)
	Low cooperation with community and social services The role of school health personnel as a liaison between pupils, teachers, families/caretakers, and community is not clearly defined, and the personnel is not trained to perform this role
	Poor coordination with local public health institutions and healthcare centers
	Poor differentiation between the functions of family doctors/primary care providers and SHS personnel
	Inadequate cooperation with teaching personnel and families, low pupils' involvement
	Perception of the school nurse by pupils, teachers, and parents as the distributor of head-ache pills or giving sick leave certificates (Stronski et al. 2009) Only from 25 to 32 % of interviewed parents were aware that there is a doctor or nurse in school. The interviewed pupils did not know how much time the nurse spends at their school (Ministry of Health of Albania 2009)

that apply to the education sector staff, nor do we benefit from the salary increase scheme that is applied in the health sector, because we are not employed by the latter."

The school nurse was a "writing nurse" not a "nursing nurse." We found that a lot of school nurse time is dedicated to filling reporting forms and keeping records. In Tajikistan, school health personnel are supposed to keep up-to-date 15 separate reporting documents; data is transmitted to the municipal or district policlinics (Ministry of Health of Tajikistan 2011). Yet, despite this work, we could not find evidence in any of the countries that such reporting was used for planning or quality management purposes.

Another common challenge was a disconnection between priority health problems and the content of school health services. In all four countries, both school health services staff and officials from the MoH recognized the imbalance between the traditional clinical areas of work, such as screenings and immunizations, and the need to address emerging concerns such as mental health, violence, nutrition, sexual and reproductive health, and chronic conditions.

Interestingly, in all countries there was quite a huge discrepancy between sometimes progressive content of existing regulations and the actual practice. For instance, health promotion was declared at the core of school health services in all four countries. However, the actual day-to-day routine of school health services personnel had little orientation toward health promotion. The disconnect often started within a single document—while stating in the preamble that health promotion is important, most of the tasks listed under the functions of both nurses and doctors were about infection control and reporting. We found that the school nurses were very often perceived as "medical police," rather than as facilitators and team members. On the other side, the nurse is a "scapegoat" for school administration in case of sanitary deficiencies found during inspections. As noted in previous chapters, infection control is an important task in settings where access to running and clean drinking water and functioning toilets are not a reality, especially in rural areas. Nonetheless, responsibility for these issues lies with the MOH and MOE. And, unless they are addressed across sectors in a whole community approach, they will fundamentally undermine the effectiveness of the proposed reforms.

In Albania, a specific problem was lack of data to identify priority health problems and their determinants. Especially, this was true in the area of mental health, sexual, and reproductive health including HIV and substance use (Stronski 2009). The prohibition for parents to enter school premises was also quite unique to Albania and explains the very low awareness of parents about school health personnel.

Achievements to Date

The applied process was effective in many ways. It stimulates a comprehensive situation analysis with the identification of main challenges and priority health problems and generated consensus and shared multiagency vision for school health services development in a country. In addition, it prompted the implementation of selected components of the reform such as development of training programs for school health personnel.

The approach facilitated the understanding of what it looks like when multiagency are working together, and the value it has for providing for school health services. It did not however, in itself, ensure that a shared sustainable multiagency vision was established among representatives of the health and education sector. In our observation, the successful involvement of the representatives of the MoE, depended not as much on the country's structural mechanisms for involvement (often non-existent) but on personal relationships between individuals. Because of this, we think that this component of the reform will be the most difficult to implement and will require time. In Box 2, we present some reflections on the difficulty in multiagencies working together.

Box 2: Working Together *de jure* but not de facto *De jure*, joint ownership and running of school health services by the health and education sector was proclaimed in 1980s and early 1990s. Thus, by the time of reforms described in this chapter, in principle countries have had more than 20 years of joint responsibility to develop a multiagency working culture. We found, however, that multiagency working was one of the weakest aspects of school health services. We think that factors that may have contributed to such a lack of progress are related to limited previous experience of multiagency working for health, an underdeveloped culture of team work, and an outdated perception of school nurse as the one for injections and controls. This perception is shared not only by the education sector, parents, and pupils, but also within the health sector—there is a lack of clarity in tasks division and professional respect between doctors and nurses, and the nurse is often considered to be just an assistant to the doctor and not a practitioner with autonomous tasks.

One positive spin-off of the application of the step-by-step approach was the empowerment of school nurses throughout the process. In all countries, school nurses were extremely positive regarding their involvement in the process: "never before was I asked what I think about how it should be done," "finally they remembered us," we could see how their level of participation gradually increased throughout the process. We think that contributing factors were the clear assignment of tasks to school nurses in line with the goal of school health services and the emphasis of the role of school nurse as negotiator between health, educational sector, and the community.

The applied process has had a positive impact on the national policy development. In the Republic of Moldova a revision of the list of health services provided to children in educational institutions was approved by a Government Resolution No. 934 of 4 August 2008. Later, quality standards and criteria for them were approved by a MoH ordinance in 2012. In Ukraine, the process contributed to the development of the national concept of school health services, which was developed by the MoH and shared with other agencies for feedback in January 2012. In Albania, a memorandum of collaboration was signed between the MoH and the MoE to support the reform of school health services. National quality standards were agreed, and competencies for school health professionals were defined. The competencies informed a training package that was subsequently developed by Albanian professionals. Tajikistan was the last country to start the process and as of 2012 was in an early phase of rejuvenating its school health policy.

Conclusion

The historical analysis shows that in all countries concerned school health services emerged and were for a long time regulated or informed by USSR regulations—a top-down process imposing obsolete practices—most of them being limited to infection control. In the four countries discussed here, school health services were born about 5 or 6 decades later than in most industrialized countries. And, they are only now undergoing the process of a paradigm shift, where they move from focusing on infection control and clinically oriented tasks to social care paradigm. This is a shift that occurred in the developed countries in Europe in the 1980s and 1990s.

By applying a goal-oriented, yet very flexible structure and a step-by-step process for change, countries created a shared multiagency vision for school health services development. A shared vision, informed by a comprehensive situation analysis, started the process of reform. These countries developed measurable quality standards and criteria for school health services, and

competency-based training programs. To sustain the progress, however, will depend on the establishment and maintenance of a shared sustainable multiagency commitment to reform.

Acknowledgments We thank professionals and pupils in Albania, Republic of Moldova, Ukraine, and Tajikistan that compiled the situation analysis reports, participated at the national workshops, organized, and participated in field visits. We also thank colleagues from NHS Health Scotland and their partners from NHS Education for Scotland; Scottish Government; Education Scotland; NHS Ayrshire and Arran, and staff and pupils from schools in North, South, and East Ayrshire Local Authorities who hosted study visits from their Moldavian and Albanian peers.

References

Atun, R., Richardson, E., Shishkin, S., Kacevicius, G., Ciocanu, M., & Sava, V. (2008). Health systems in transition. *Health, 10*(5), 1–38.

Khodjamurodov, G., & Rechel, B. (2010). Health systems in transition. *Health, 12*(2).

Khodjamurodov, G., & Rechel, B. (2009). Tajikistan: Health system review. *Health Systems in Transition*, *12*(2), v–xix.

Lekhan, V., Rudiy, V., & Richardson, E. (2010). Ukraine: Health system review. *Health, 12*(8). Retrieved from http://www.ecoi.net/file_upload/1788_1312535331_hit-ukraine.pdf

Ministry of Health of Albania. (2009). *School health services evaluation: Pilot survey in Vlora, Shkodra and Korca* (unpublished).

Ministry of Health of Tajikistan. (2011). *Situation analysis of the schools health services and healthcare in Tajikistan: Report for the orientation workshop*. Copenhagen: WHO Regional Office for Europe. (unpublished).

Ministry of Health of the Republic of Moldova. (2008). *Situation analysis of health services provided in primary and secondary education institutions. Report for the orientation workshop*. Copenhagen: WHO Regional Office for Europe (unpublished).

Ministry of Health of Ukraine. (2009). *Situation analysis of the system of provision of medical care to school-aged children in Ukraine: Report for the orientation workshop*. Copenhagen: WHO Regional Office for Europe (unpublished).

Nuri, B. (2002). *Heath care systems in transition: Albania, 4*(6). Copenhagen: European Observatory on Health Care Systems.

Stronski, S. (2009). *National workshop on "Reorganization of School health Services and Referrals" Tirana, Albania*. Meeting report, October 12–16, 2009. Copenhagen: WHO Regional Office for Europe (unpublished).

Stronski, S. (2011). *National workshop on "Evidence based school health services and referrals", Dushanbe, Tajikistan.* Meeting report, June 1–3, 2011. Copenhagen: WHO Regional Office for Europe (unpublished).

Stronski, S., Dumcheva, A., & Baltag, V. (2009). *Workshop on Reorganization of School Health Services and Referrals for Adolescent's Health and Development*. Meeting report Copenhagen: WHO Regional Office for Europe (unpublished).

Tarus, M. (2010). The Republic of Moldova: Evolution of health care services in schools. In V. Baltag & A. Mathieson (Eds.), *Youth-friendly health policies and services in the European Region* (pp. 76–91). Copenhagen: WHO Regional Office for Europe. Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0017/123128/E94322.pdf

School Nursing: Making a Difference in Adolescent Health and Well-Being

26

Wendy Nicholson and Gillian Turner

Introduction

In England, there are nine and a half million young people 5–19 years of age (Office for National Statistics 2015). This equates to 17 % of the population. Young people face a range of challenges due to the changes in the way they lead their lives and the families or communities in which they live. The health and well-being of our children and young people matters, and school nurses are key professionals in supporting children and young people in their developing years (5–19) to have the best possible health and education outcomes. Access to good services is crucial to support health and well-being; school nursing services in England are a key workforce in supporting adolescent health.

This chapter will explore health issues and emerging trends for young people in England and outline the key drivers for improving children and young people's health, and why the school nurses should lead the delivery of public health services. Finally, the provision, evaluation, and impact of school nursing services will be examined.

W. Nicholson (✉) · G. Turner
Public Health England, Wellington House, 133-155 Waterloo Road, London SE1 8UG, England, UK
e-mail: wendy.nicholson@phe.gov.uk

The Health of Children and Young People Living in England

Children are shaped by the way they live their lives, both within their immediate family or care setting, and also their interaction with the wider community. This includes their interface with the health and education system. Childhood, particularly adolescence, is a complex and critical period, in terms of developing health behaviors and laying down the foundations for future health and well-being. It is therefore important to understand the issues and challenges, so that services can be shaped to meet children and young people's needs, at times when they need it most.

Data from the Health Behaviour in School-aged Children (Brooks et al. 2015) and Key Data in Adolescent Health (AYPH 2015) provides evidence and insight into adolescent health and well-being in England.

In England, 86 % of young people describe their physical health as good or excellent (Brooks et al. 2015). Additionally, we are seeing encouraging trends of decreasing levels of participation in risk-taking behaviors. Rates have fallen for smoking, drinking, and drug taking over the pass few years; however, the impact of legal highs and e-cigarettes on adolescent health is unclear (Brooks et al. 2015).

Rates of conception, among girls 18 years of age and younger, have not been this low since 1969 (Office for National Statistics 2016).

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_26

Even so, England still has a relatively high rate of births among 15- to 19-year-olds compared with other countries.

There are many indices of disadvantage that can, and indeed do, impact young people's health and well-being. For healthcare professionals, it is important to understand the challenges facing young people, in order to focus efforts to address inequalities and improve life chances during adolescence.

Nearly two million young people, 10–19 years of age, live in the most deprived areas of England. More than one in ten of those 19 and younger are living in situations of low income, with one in eight young people under 15 living in households where no one holds a job (AYPH 2015). There are emerging negative trends that will impact young people's health now and potentially impact their health significantly as they progress to adulthood.

In England, around 14 % of state-funded secondary school pupils receive free school meals (Department for Education 2015). Entitlement to free school meals can be used as a proxy measure of affluence. In 2014, 13 % of children in state-funded schools reported receiving free school meals (Brooks et al. 2015).

Only 19 % of young people meet the Chief Medical Officer recommended guidelines for physical activity (Department of Health 2011c). Generally physical activity is declining across adolescence, particularly among females.

Diet and nutrition remains an issue, with only 46 % of young people meeting the government's recommendations of five portions of fruit and vegetables a day, some 22 % eating sweets daily, and 17 % eating at fast food outlets weekly (Brooks et al. 2015).

Childhood obesity is increasing. One in five pupils 10–11 years of age are obese (Brooks et al. 2015; AYPH 2015). The National Child Measurement Programme (Public Health England 2015a, b) measures the height and weight of children in reception class (4–5 years of age) and school year six (10–11 years of age) to assess overweight and obesity levels in children in primary schools. The Health and Social Care Information Centre (HSCIC 2015) data can be used at a national level to support local public health initiatives and inform the local planning and delivery of services.

Emotional well-being and mental health are important issues for young people; half of all mental illnesses start by the age of 14, and three quarters of all mental illness starts by the age of 24. And, while suicide rates are falling in England, in 2014 41,921 young people 10–24 year of age were hospitalized for self-harm by poisoning or other methods (AYPH 2015). At least 10 % of young people 10–19 years of age experience mental health issues. Yet, only 1400 per 100,000 of children and young people between 0 and 19 years of age are referred for specialist child and mental health services (AYPH 2015). Over a fifth (22 %) of young people reported not having enough sleep to be able to concentrate at school during the day (Brooks et al. 2015).

At least 15 % of 11- to 15-year-olds have a long-term health condition or additional health need, including a disability. Approximately 800,000 teenagers suffer from asthma, 63,000 young people under 19 have epilepsy; 35,000 live with diabetes, 2500 children and adolescents under 17 develop arthritis, and 2200 young people are diagnosed with cancer each year. Sadly, around a quarter of young people with a long-term health conditions or disability said their condition affected their schooling or school participation (Brooks et al. 2015). There is a need therefore to consider how they are supported at home, within school settings, and within their local communities. The Department for Education and, Special Educational Needs and Disability (SEND) reforms came into effect in 2015, and this offers an opportunity to ensure support is individualized and connected across agencies.

The health and well-being of parents is an important factor. Some 22 % of young people under 16 (2.6 million) live with a hazardous drinker and 335,000 children live with a drug-dependent parent (Manning et al. 2009). Consequently, more young people are taking on the role of caretakers.

Young caretakers include children and young people under 18 who provide regular and

ongoing physical, emotional, and social support to a family member who is physically or mentally ill, disabled, or misuses substances. National census data show that there are 166,463 young caretakers in England (Office for National Statistics 2011). Nine percent of the 166,363 young caretakers in England provide care 50 h a week or more (Office for National Statistics 2011). Eighty percent of young caretaker provide care from 1 to 19 h per week, and 11 % provide care from 20 to 49 h per week (Department of Health 2014b).

Screen time and use of computers is fundamental to the way young people lead their lives. Increased screen time has provoked cause for concern (Action for Children 2016). Fifty-nine percent of young people reported using a computer or electronic device for two hours or more everyday (Brooks et al. 2015); 35 % of young people report that they play computer games at least once a week, while 89 % of young people 12–15 years of age own a smartphone (Ofcom 2013). Technology, such as social media, is attractive to young people. It provides an opportunity to engage with young people, to raise awareness of health and well-being, and increases active engagement.

Policy Drivers

As with any modern society, health challenges change and thus priorities change. In England, we have seen sustained and significant focus on the health and well-being of children, young people, and families. However, challenges remain and new issues have emerged; consequently, there is increasingly more recognition of the importance of evidence-based public health delivery and prevention or early help delivery models (Local Government Association 2013). A range of policies have set out the case and actions for improvement.

Health and Wellbeing Boards lead a 'Joint Strategic Needs Assessment' to determine local priorities for the Health and Wellbeing Strategy to inform service commissioning. The health and well-being priorities for children and young people was one of the products of the needs assessment (see Box 1).

Box 1 Health and Wellbeing Priorities for Children and Young People

Leading and Delivering the Healthy Child Programme 5–19 (Department of Health 2009)

- assessing and determining local needs
- providing information to inform the Joint Strategic Needs Assessment
- using evidence from neuroscience to inform practice
- building capacity, for example, supporting healthy schools
- early identification and intervention for emotional and mental illness

Improving:

- readiness for school and reducing school absences
- emotional well-being of looked after children
- vaccination coverage

Reducing:

- tooth decay in children under 5 years of age
- excess weight in 4- to 5- and 10- to 11-year-olds
- hospital admissions due to intentional or deliberate injuries (under 18)
- under 18 conception rates
- diagnoses of chlamydia in 15- to 24-year-olds
- smoking prevalence in 15-year-olds, and drug misuse

Systematic review of outcome measures is essential and provides an opportunity for determining effectiveness and a re-focusing if services are not meeting local needs.

The Healthy Child Programme: From 5 to 19 (Department of Health 2009) sets out the universal prevention and early intervention public health program for children and young people from 5 to 19 years of age. School nurses were recognized as the lead profession in terms of

coordination and service delivery. The Healthy Child Programme (HCP) provides an invaluable opportunity to support the health and well-being of children and young people within a universal framework, while identifying families that are in need of additional support, and children who are at risk of poor outcomes.

The HCP identifies the school nursing service as pivotal in the effective delivery of evidence-based support and the importance of children and young people being able to access the expertise of school nurses and their teams.

The HCP sets out to assist local areas to:

- ensure services are based on a robust needs assessment;
- utilize effective practice and prioritize evidence-based programs; and
- make best use of their workforce.

School nurses have a lead role in helping to develop local approaches to public health services and provide links between public health, the NHS, schools, and a leadership role in promoting good health and addressing inequalities (Department of Health 2010).

Healthy Lives, Healthy People (Department of Health 2010) provided an opportunity for a radical shift in tackling public health challenges and addressing lifestyle-driven health issues including sexual health, smoking, alcohol, and obesity. The report emphasizes the need for system change nationally and locally; giving every child in every community the best start in life is a central concept in the report. There is a clear commitment to addressing child poverty and tackling inequalities.

Early Help: Munro (Department for Education 2011) emphasized the importance of early help at any stage in a child or young person's life. Failure to meet the health needs of children and young people can lead to difficulties in the future and have a profound impact on their adult health. Munro highlighted the value of providing help at the earliest opportunity as soon as a problem emerges to prevent the situation worsening. School nursing services are crucial for identifying need, providing a response, and working with partners, thus ensuring effective early help is available.

You're Welcome Quality Criteria (Department of Health 2011b) sets out non-mandatory standards for delivering friendly health services to young people. These standards are designed to be used by health services to assess how well their provisions meet the needs of young people. The engagement of young people in the process is a fundamental component; young people review and verify compliance with the standards. The World Health Organization (WHO) endorsed the standards in 2011. The standards and the accreditation process are currently being reviewed, with the intention of refreshing the standards and streamlining the accreditation process.

In 2013, Public Health England was established to focus on public health, support local innovation, help provide disease control and protection, and disseminate information and innovation. Included in the Public Health England role is creation of a system to empower individuals to make healthier choices and to equip local communities with the tools and evidence to address their own particular health needs.

The Children and Young People's Health Outcomes Strategy (Department of Health 2013c) is a whole system health reform model. The Children and Young People's Health Outcomes Forum informed the development of the strategy, embracing all of children and young people's health care across all ages. Its first report (Department of Health 2012b) identified indicators to improve the health outcomes of all children and the systems and structures needed within the NHS to achieve them.

Chief Medical Officer report: Our children deserve better—prevention pays (Department of Health 2013a) focused on the high mortality, morbidity, and inequalities in England and clearly articulate the need to improve outcomes for children and young people. The report brings together evidence for early action and a clear economic argument for why this is important. The report made three key recommendations: a focus on public health, early intervention, and strengthening the evidence base.

From Evidence into Action (Public Health England 2014) focuses on creating and protecting health, in addition to treating ill health. The report outlines the priorities for the next five years to determine where it can most effectively focus its efforts. The seven priorities are as follows: (1) tackling obesity, (2) reducing smoking, (3) reducing harmful drinking, (4) ensuring every child has the best start in life, (5) reducing dementia risk, (6) tackling antimicrobial resistance, and (7) reducing tuberculosis.

Five Year Forward View (NHS England 2014) sets out direction for the NHS for the next five years, showing what change is needed and what it would look like. The report outlines the challenges and change required of the NHS working in partnership with local communities, local authorities, and employers. There is a focus on narrowing three key gaps: health and well-being, care and quality, and funding and efficiency. Public health, prevention, and self-care are fundamental in terms of delivering the change required and narrowing the gaps.

Future in mind (Department of Health 2015a) emerged from the Children and Young People's Mental Health and Wellbeing Taskforce. It was set up to consider ways to make it easier for children, young people, parents, and caretakers to access help and support when needed and to improve how children and young people's mental health services are organized, commissioned, and provided. Consequently, significant governmental funding has been provided to improve mental health services for children and young people (Department of Health 2015b).

Policy, Action, and Impact

The national Teenage Pregnancy Strategy (Department for Children, Schools and Families 2010) is a good example as summarized below.

Teenage Pregnancy

Teenage pregnancy is an issue of inequality affecting the health, well-being, and life chances of young women, young men, and their children. Consequently, high levels of teenage pregnancy are of concern to an increasing number of developing and developed countries. The UK Labour Government's Teenage Pregnancy Strategy for England was one of the very few examples of a nationally led, locally implemented evidence-based strategy, resourced over a long period of time. There has been an associated reduction of 51 % in the under-18 conception rate from the baseline in 1998. All 150 local government areas have showed reductions, in conception, births, and abortions.

The numbers are quite dramatic. Conception rates among English girls 15 through 17 years of age declined from a height in 1998 of over 46 per thousand girls to slightly over 25 girls per thousand by 2014. Maternity rates for this group of girls were above 25 per thousand in 1998 and then dropped to slightly over 10 per thousand girls in 2014. Abortion rates went from 20 per thousand in 1998 to 10 per thousand girls by 2014 (see Fig. 26.1).

Local areas with better reductions had developed their strategies fully in line with the national guidance(s), involved all agencies, and had strong senior leadership to prioritize the strategy, harness resources, and monitor progress. The 10 key characteristics required for a successful local strategy are as follows:

- Senior leadership and accountability
- Strong use of data for commissioning and monitoring of progress
- Sex and relationships education in schools
- Youth-friendly contraceptive/sexual health services and condom schemes
- Targeted prevention for young people at risk
- Support for parents to discuss relationships and sexual health

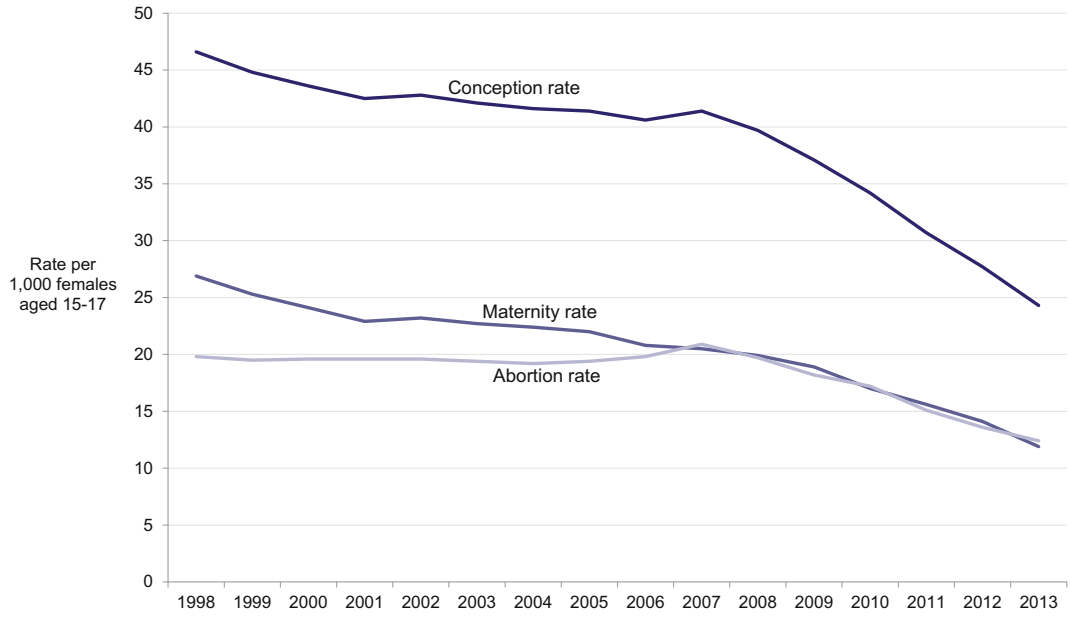


Fig. 26.1 Reducing teenage pregnancy

- Training on relationships and sexual health for health and non-health professionals
- Advice and access to contraception in non-health youth settings
- Consistent messages to young people, parents, and practitioners
- Dedicated support for teenage parents—including SRE and contraception (Hadley et al. 2016).

Service Organization in England

National policy shapes local priorities, enables more effective use of resources, and enables services to respond to needs more effectively through robust commissioning.

Delivery Within a New Commissioning Framework

Commissioning requires assessment of local need and the planning and securing of services to meet those needs. In 2012, the commissioning arrangements for health and social care in England were subject to significant change and as a result involve multiple commissioners. The commissioning responsibilities are set out for local authorities, clinical commissioning groups, and NHS England for health and well-being of children 0–19 years of age. Those doing the commissioning need to work together to assure local improvements.

Changes in legislation in the Health and Social Care Act 2012 led to local authorities being responsible for improving the health of their local population including statutory duties for children, including:

- Establishing arrangements to reduce child poverty and promote the interests of children in the development of health and well-being strategies; joining up commissioning plans for clinical and public health services with social care, and education to address identified local health and well-being needs;
- Provide leadership to partners and the public to ensure children are safeguarded and their welfare promoted;
- Driving the high educational achievement of all children; and

- Leading, promoting, and creating opportunities for cooperation with partners to improve the well-being of young people.

Local authorities are responsible for commissioning public health services for children from 0 to 19 years of age; this includes a school nursing provision. The new arrangements present opportunities for bringing together a robust approach for improving outcomes for children and young people across both health and local authority-led services, including enhanced delivery between health visiting and school nursing services.

In times of austerity, there will be challenges for commissioners and service providers. Even so, austerity will also present new opportunities, for instance, co-commissioning between health and schools to maximize resources.

Delivering Public Health—A New Model for School Nursing

Delivering public health evidence-based programs, such as the HCP 5–19, requires specialist skills and adaptability to respond to individual, family, community, and population needs. School nurses and their teams are well equipped to lead and deliver the complex and extensive public health agenda (see Box 2) needed to address the health and well-being of children and young people.

Box 2 Public Health Agenda and the School Nurse Contribution

School Nurses in England are Expected to:

- Lead and deliver the universal HCP 5-19, including assessment of need by appropriately qualified staff, providing health promotion advice, screening and surveillance, engagement in health education programs, providing integrated services linked to primary and secondary care, and educational settings;
- Deliver public health intervention support to all children and young people, and to keep children and families safe, while addressing the health needs of priority groups;
- Work with the community and local commissioners to identify population health needs, ensuring health promotion strategies are integrated with sexual or reproductive health services, for example, teen pregnancy and substance misuse prevention;
- Evidence that the experience and involvement of families, caretaker's children, and young people will be taken into account to inform service delivery and for making improvements;
- Champion and advocate culturally sensitive and non-discriminatory services, which promote social inclusion, dignity, and respect; and
- Build on resilience, strengths, and protective factors to improve autonomy and self-efficacy based on best evidence of child and adolescent development—recognizing the context of family life and how to influence the family to support the positive outcomes for children;
- Build personal and family responsibility, laying the foundation for an independent life.

The agendum is vast and the public health challenges are increasing. In England, the school nurse workforce is relatively small in number. There are 9.5 million children from 5 to 19 years of age (Office for National Statistics 2015) and 1200 full-time equivalent school nurses (HSCIC 2016b).

School nurses have a responsibility to deliver universal population approaches and targeted individual interventions. This is accomplished by a support team of skilled workers that include registered nurses, nursery nurses, and support workers. This equates to approximately 2400

additional full-time equivalent staff (HSCIC 2016b). The skill mix will vary depending on local health needs identified within the Joint Strategic Needs Assessment and workforce plans.

School nurses coordinate services and delegate work within the team to maximize use of available skills and resources. The skill mix in the team strengthens capacity and reflects the local need in an area. For example, one area implementing the National Child Measurement Programme found that school nurses were spending a lot of time responding to concerns and complaints about weight in response to the program. The skill mix team now proactively contacts the parents of children who are very overweight by telephone to offer reassurance, support, and posting signs about weight management programs.

Nonetheless, there are challenges for school nurses delivering comprehensive services to the populations they serve relating to heavy workloads, lack of time, inadequate staffing, and difficulty fulfilling the wide range of activities the role demands (Ball 2009).

In 2010, the government invested significantly in the Health Visiting Programme to transform the early help offer and support for children (0- to 5-year-olds) and families (Department of Health 2011a). Subsequently, a similar program to support school nursing services followed. This mobilized the profession, enabling the development of a new vision and model, and significantly raising the profile of the profession.

Developing a New School Nurse Model

Over an 18-month period, the Department of Health, worked with key stakeholders including school nurse leaders, practitioners, and importantly children and young people to develop a model to standardize delivery of services, offer clarity of the nurse's role, and support the services that are responsive to local health needs.

The development process was iterative and far-reaching. Effective partnership working with key experts including British Youth Council (2011), Young Carers, Youth Focus North West, and National Children's Bureau fostered authentic co-production with children and young people.

What Did Children, Young People, and Parents Tell Us

The views of children, young people, and parents all contributed to the vision and the model. This included testing key findings and emerging themes. A number of common themes emerged from the consultation with children, young people, and parents, which are summarized in Fig. 26.2. Findings of the consultation (British Youth Council 2011) shaped the vision and have led to further co-production.

Given the feedback from young people and parents, it was important to ensure they understood the service being provided. Figure 26.3 outlines the service model for school nursing services and what children, young people, and parents can expect to receive.

The model (Department of Health 2012a) emphasizes the strength-based approaches readily used by school nurses, building on their non-dependent relationships to enable efficient working with their population (children, young people, and families), to support behavior change, promote health protection, and maintain safety.

The vision and model defines the school nursing services based on four levels of intervention: community, universal, universal plus (short-term early/additional help), and universal partnership plus (long-term multidisciplinary support; e.g., with social disadvantage, illness/disability, safeguarding). The four levels are a continuum of support in which the child's needs are met through robust coordination by the school nursing service. These are described in detail below.

Community—School nurses have an important public health leadership role in the school and wider community. For example, school nurses contribute to health needs assessment, and designing services to reach young people wherever they are. They provide services in

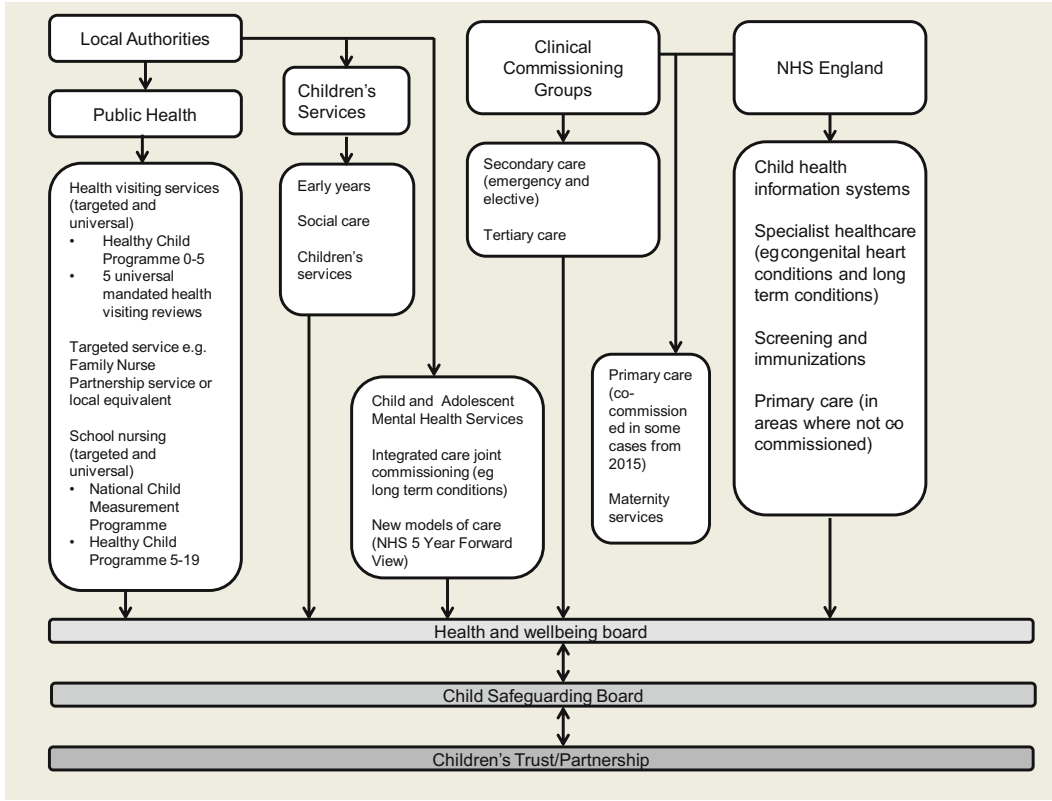


Fig. 26.2 Commissioning of services for children and young people 0–19 years of age

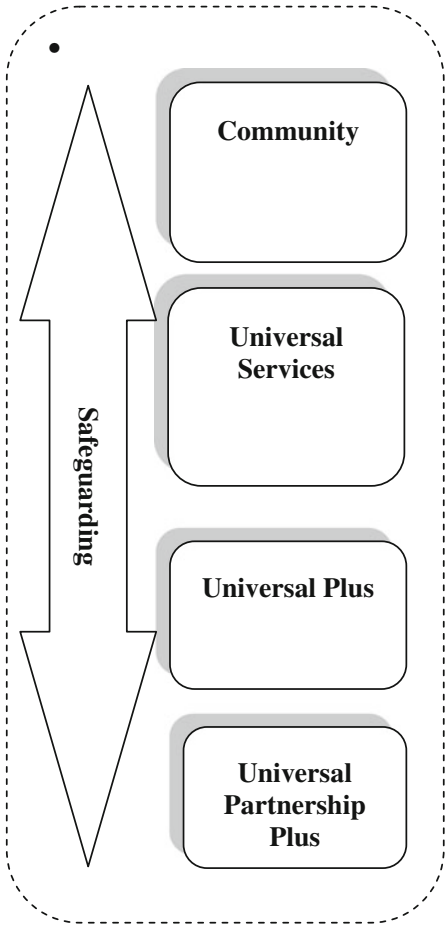
community environments, and working with young people and school staff to promote health and well-being within the school setting. In particular, school nurses work with others to increase community participation in promoting and protecting health, thus building local capacity to improve health outcomes.

Universal Services—School nurses provided leadership, coordinate, and provide services to deliver the HCP to the 5- to 19-year-olds. They provide universal services for all children and young people as set out in the HCP, working with their own team and others including health visitors, general practitioners, and schools. This includes health checks, health promotion, and delivering the immunization program.

Universal Plus—School nurses are a key part to ensuring children, young people, and families get extra help and support when they need it. They offer 'early help' (e.g., through care packages for children with additional health needs, for emotional and mental health problems, and sexual health advice) through providing care and/or by referral or posting signs about other services. Early help can prevent problems from developing or worsening.

Universal Partnership Plus—School nurses are part of teams providing ongoing additional services for vulnerable children, young people, and families requiring longer-term support for a range of special needs for disadvantaged children, and young people with a disability. This includes those with mental health problems and those with substance misuse problems, and risk-taking behaviors. School nursing services also form part of the high-intensity multi-agency services for children, young people, and families where there are child protection or safeguarding concerns.

The model offers flexibility within a structured system. This means providing a service at



Your Community describes a range of health services (including GP and community services) for children and young people and their families. School nurses will be involved in developing and providing these and making sure you know about them.
Universal Services from your school nurse team provides the Healthy Child Programme to ensure a healthy start for every child. This includes promoting good health, for example through education and health checks and protecting health e.g., by immunizations and identifying problems early
Universal Plus provides a swift response from your school nurse service when you need specific expert help, which might be identified through a health check or through providing accessible services that you can go to with concerns. This could include managing long-term health issues and additional health needs, reassurance about a health worry, advice on sexual health, and support for emotional and mental health wellbeing.
Universal Partnership Plus delivers ongoing support by your school nursing team as part of a range of local services working together and with you/your family to deal with more complex problems over a longer period of time

Fig. 26.3 The service model for school nursing

four levels with safeguarding being a core part of each level of service, from universal services education about protective behaviors to working as part of a team providing high-intensity services where these are needed.

The school nurse role has progressed. They are addressing complex, highly sensitive, and convoluted health needs. With this in mind, a suite of supporting professional guidance for practitioners and commissioners has been developed (Public Health England 2016).

Defining the delivery model, and offering role clarity, has indeed supported a more consistent approach; however, the breadth of school nursing delivery remains extensive. The 4-5-6 model was developed, which provides an opportunity for service providers and commissioners to focus on key areas of delivery where they will have significant impact and contribute to improved outcomes for local children and young people. The **4** levels of service are emphasized, **5** key opportunistic contact points identified, and **6** high impact areas identified. The high impact areas are based on evidence of where these services can have significant impact (for all children, young people, and families and especially those needing more support) and reducing impact of health inequalities (see Fig. 26.4). A bundle of indicators are already available to measure performance and outcomes (Department of Health 2013b), and this is currently being improved by using maternity and child datasets, which will be available in 2017 (HSCIC 2016a).

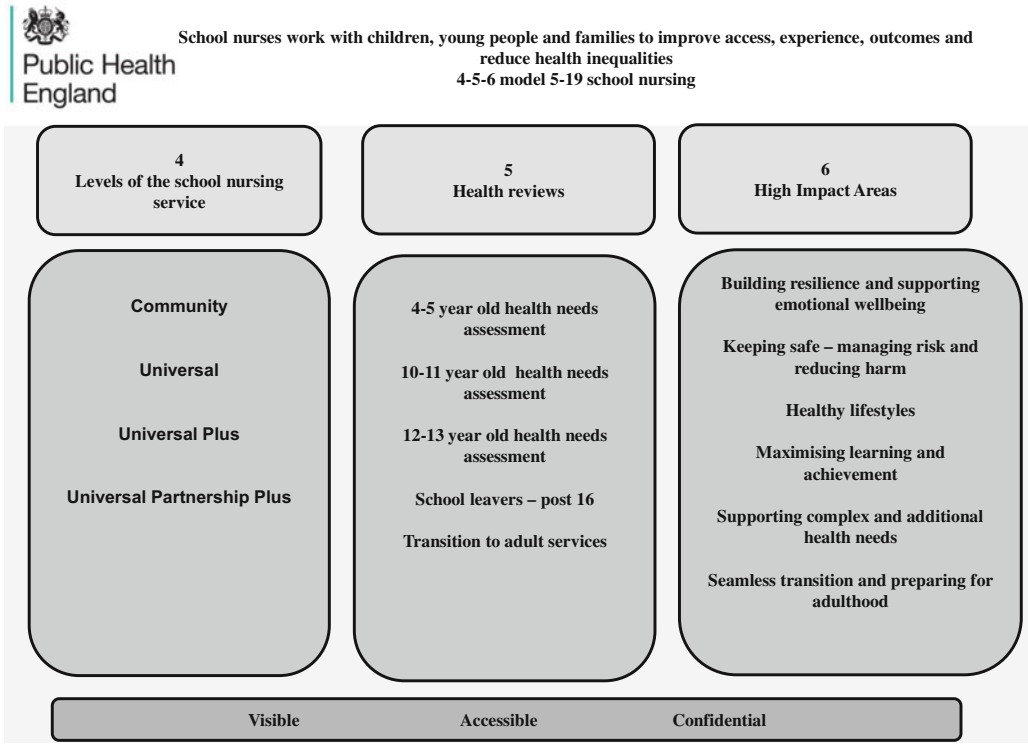


Fig. 26.4 4-5-6 model 5–19 school nursing

Role of the School Nurse

School nurses are:

- The single biggest workforce specifically trained and skilled to lead and deliver public health services for school-aged children (aged 5–19);
- Clinically skilled in providing holistic, individualized, and population health assessment, with a broad range of skills for universal and community-based health interventions
- In a unique position within the community and educational settings to support multidisciplinary teams, with relationships in primary and secondary care.

In particular, skills in assessment are viewed as essential to enabling provision of appropriate support services (Streeting 2010; Streeting 2015; Department of Health, n.d.).

Education and Professional Standards for School Nurses

Qualified school nurses in England are also known as Specialist Community Public Health Nurses (SCPHN). They are highly skilled professional nurses who have undertaken additional specialist graduate or postgraduate level education in community health and the health needs of school-aged children and young people. SCPHN is distinct from general nursing because of the responsibilities to work with individuals, communities, and populations without having direct contact with every individual.

The program of education to develop SCPHN standards of proficiency is centered around four domains of practice: (1) the search for health needs, (2) stimulation of awareness of health needs, (3) influence on policies affecting health,

and (4) facilitation of health-enhancing activities (NMC 2004).

Access to training and development supports effective school nursing practice and increases confidence in delivering interventions (Squires 2013; Jones and MeEwan 2012; Pryjmachuk et al. 2011).

Putting Policy into Practice

School nurses deliver support and evidence-based interventions for school-aged children, young people, and their families in and out of the school setting including clinics, family homes, and other community venues. They use their knowledge and skills to assess local need, plan and deliver interventions to respond to those needs, and evaluate effectiveness of the interventions delivered.

The You're Welcome Quality Criteria (Department of Health 2011b) are applied to the interventions they deliver. They work with the whole family to develop good social, psychological, and lifestyle choices to empower adoption of healthier behaviors. Much of the work of school nurses is delivered in partnership with other professionals and agencies as part of a wider multidisciplinary team. This includes schools, social care, educational welfare, youth services, other health professionals, and voluntary organizations. For example, school nurses and health visitors work together closely with the child and family to achieve seamless transition and integrated support to ensure readiness for school (Public Health England 2015a).

Although interventions are delivered in the setting most appropriate to the individual, schools are the main delivery vehicle for the interventions. Evidence from Brooks et al. (2015) strongly suggests that when young people are supported at school, this provides an opportunity to address health and well-being.

Schools as health-promoting organizations are well recognized (WHO 2016). School nurses work closely with schools to develop whole school approaches to promoting emotional and physical health and well-being. This includes helping schools build a supportive environment with strong positive relationships with young people and families, which is essential to create a sense of belonging to the school, a feeling that they are connected and that teachers care for them as a person. These are important factors in building resilience, developing social and emotional competence, achieving academically, and enabling young people to thrive. Delivering Personal, Social and Health Education (PSHE) in schools can help reduce risk-taking behavior (Brooks et al. 2015). PSHE is considered part of the national curriculum; however, it is not mandatory.

Public Health Priorities

Public health activities are a vital part of the work that school nurses do to promote and protect health and well-being, and preventing ill health. School nurses use analytical skills to identify individual and population health needs in order to coordinate evidence-based approaches required to improve health and well-being, and longer-term cost efficiency. Key areas of work include the following.

Promote health	• Provision of school-based PSHE to promote good health and lifestyle choices relating to drugs, alcohol, smoking, sexual activity, and relationships • Promotion of good emotional health and well-being to prevent mental health disorders such as anxiety and depression
Protect health	• Routine immunization programs in primary and secondary schools and the community to protect against diseases such as meningitis, cervical cancer, and influenza (NHS 2016)
Prevent ill health	• NCMP to identify and address childhood overweight and obesity (Public Health England 2015b) • School-based sexual health services to reduce conception rates and the prevalence of chlamydia among those under 18 years of age

(continued)

	• School nurses Make Every Contact Count (NHS Future Forum 2012) by taking every opportunity to start conversations about good health, provide behavioral change interventions, deliver key health messages, post notices, and refer on to other services and organizations

Early Help and Early Intervention

School nurses build close relationships with individuals and communities through universal support, which is key to the identification of those who require additional early support to prevent health issues from worsening. They are skilled in assessing need, identifying issues and potential risks, and providing early intervention. To support the transition of children from primary to high school, school nurses carry out a health assessment to identify any concerns so that they can be addressed swiftly.

The provision of community-based clinics in a variety of settings where young people can 'drop-in' without an appointment enables them to access health information, advice, and support and referrals to other services that they may need. Through therapeutic communication skills (such as motivational interviewing), school nurses support behavioral change and positive health choices when young people are developing self-determination and autonomy.

Early Help and Safeguarding

An independent review of child protection in England recommended that there should be identification and provision of early help for children whose needs do not match the criteria for receiving children's social care services (Department for Education 2011). School nurses can rapidly respond to improve the life chances of young people who are at risk of abuse or neglect. This includes children who are not in an educational setting, children in care, young caretakers, home educated, young offenders, and young people at risk of becoming involved in gangs, youth violence, sexual exploitation, or harmful practices such as female genital mutilation.

Local Children Safeguarding Children's Board have a statutory responsibility to arrange how agencies will cooperate with one another to safeguard and promote the welfare of children and ensure statutory guidance is implemented (HM Government 2015). This means work is carried out in partnership with local authorities, children's social care, police, probation services, youth offending services, voluntary, and community services contributing to a multi-agency team to support young people and families who have multiple problems.

School nurses play a significant role in safeguarding children and young people, and as public health practitioners. School nurses work across the continuum from preventive work with whole populations through targeted support for children at high risk of maltreatment, while providing interventions to reduce the recurrence of abuse (Barlow and Calam 2011).

Additional and Complex Health Needs

Schools have a duty to make arrangements to support pupils with additional and complex health needs, special educational needs (SEN), and disability (Department for Education & Department of Health 2015). For those with SEN and disability, the provision of a coordinated assessment process between health, education, and social care professionals enables the development of a 0- to 25-year Education, Health and Care plan that focuses on support to enable young people to succeed in their education and make a successful transition to adulthood.

School nurses lead the support for young people who have health issues, long-term health conditions, or disability to access education and leisure activities. For example, school nurses can manage the impact of health issues on a child's education so that physical and emotional health needs are supported, so that these children can achieve their full potential. This may involve coordinating or providing support for young

people with additional health needs, developing care plans, and training for education staff to help these children manage those needs in school. The services always involve the young person, their parents, or caretakers, and service providers in the development and review of the service plans. The plan should make provision for good quality family life and support the seamless transition of young people into adult services. Support ranges from managing asthma to supporting complex needs, special educational needs, and learning disability.

Confidentiality and Consent

An important part of school nurse services is their ability to work confidentially with young people (NMC 2015). Although young people are encouraged to discuss their concerns with their parent or caretaker, they can speak to the school nurse in confidence about their health issues. The nurse would always seek consent prior to disclosing confidential information but has a duty to break confidentiality if the safety or welfare of the young person or others would otherwise be put at risk (Royal College of Nursing 2014).

Access to School Nursing Services

Every school and college have a named school nurse. Nursing services are also provided to children being home educated. This ensures that every young person has access to services that are informed by the particular needs of young people to ensure the health facilities and systems are youth-friendly, and school nurses respond effectively, appropriately, and with sensitivity (Department of Health 2011b). The school nurse typically covers one secondary school and two or three primary schools. However, this varies by area, local need, and staffing arrangements, and can be up to a maximum of one secondary and six primary schools. Some school nurses cover primary schools only.

School nurse services operate on an open-referral system from the young person, parents/caretakers, schools, health professionals, and social care and other services. Typically, school nurses are based in community clinics rather than individual schools and are supported in providing services by their team.

Perceptions and understanding that young people, parents, and professionals have of the school nurse role can vary. In a recent review of the evidence base on school nursing in England, Turner and Mackay (2015) found that relationships with teachers and other professionals can be inconsistent relating to lack of awareness of services, turnover of staff, and previous experiences. In addition, children and parents are not always clear about the services available (Department of Health 2012a). It is essential that school nurses recognize the central role of relationships with young people and families to improve communication and optimizing early help (Munro 2011).

Developing Partnerships with Young People and Families

In order to have a maximum impact on improving youth health and to support access to services, school nurse service delivery takes into account the views of young people in order to have a maximum impact on improving youth health. In 2011, the British Youth Council worked with young people to identify what they wanted from school nursing services. The young people were clear, their health was important to them, and they wanted services that are visible, accessible, and confidential. Similarly, consultation with parents highlighted that school nurses need to be more visible in schools and to parents by introducing themselves, describing the services they offer, and providing contact details directly through clear letters and leaflets (Department of Health 2012a). In response to these findings, school nurses work to raise awareness of their service and become well known to young people and parents.

Using Technology to Improve Access and Support

Advances in technology have enabled school nurses to change the way they deliver services. They are responding to what young people have said they want. Texts, Skype, Apps, and Facebook have improved access to services. This approach encourages the reluctant user; in particular, boys have indicated that they like the anonymity of this approach for their first contact with the service. Confidentiality is also promoted by giving young people a choice of access through the use of text messaging, email, and phone calls. Using this approach, adolescents do not have to speak to a member of school staff to be able to contact their school nurse.

Importantly, young people's contribution goes beyond provision of their views and feedback on their experience regarding the school nursing service, and their feedback also influences ongoing improvements in the services provided. They are co-producers, delivering public health through their support of peer education programs, and of social learning through digital badges (see Fig. 26.5).

Measuring Impact and Evidence

School nurse contacts provide an opportunity for interventions with young people, yet evidence suggests that there needs to be more robust evaluation of the outcomes of these interventions (Turner and Mackay 2015). Evaluation is an essential process to establish whether an intervention has been effective, cost-effective, and successful. Therefore, effective service planning should include a thorough evaluation phase (Whitehead 2010). The new commissioning arrangements require evidence of effectiveness against key performance indicators (Department of Health 2016). This presents an opportunity for developing a strengthened approach, which can improve quality of care and secure future investment.

Evaluation activity often includes numerical monitoring of attendance, contacts, time, and activities (Chase et al. 2011). Complex health initiatives such as those delivered by school nurses must incorporate a combination of activities to evaluate both process and outcomes. Use of quantitative and qualitative measures will gather information about not only whether an intervention has worked to change health status, but also participants' views of an intervention and broader changes that may occur (Ellard and Parsons 2010; Mackay 2010).

The Public Health Outcomes Framework for England (Department of Health 2013b) has as its overarching aim the improvement of health outcomes and reduced health inequalities. The framework sets out specific national outcomes across the life course, while local commissioners and providers are required to achieve these outcomes.

Dissemination of evaluation findings provides an opportunity for others to learn from the delivery of an intervention and enables them to consider how it may be applied within their practice (Dennison et al. 2010). Intervention evaluation will contribute to the evidence-based interventions incorporated in school nurse practice only if it is shared (Mackay 2010). Consequently, dissemination of evaluation findings is vital if school nurses are to deliver evidence-based interventions that improve health and are cost-effective.

Evaluation and dissemination can be a challenge for school nurses due to a capacity and resource issues, and uncertainty about evaluation. It is important that they have access to practical support for evaluation, impact measurement, and sharing of findings. Evidence suggests that national guidance should be developed to provide a framework for evaluation of practice (Turner and Mackay 2015; Chase et al. 2011). The government has recently commissioned work to examine evidence of good practice in evaluation and to develop a toolkit for evaluation of school nurse practice.

Health Champion
How to promote healthy living within your school, family and local community.

School Nurse
Learn how school nurses can help you to stay healthy

Stress Buster
What causes stress and what to do to help yourself if you are stressed

Stress Buster 2
Learn about where to find out about support for people suffering with stress and how they can be helped.

Healthy Teeth
Learn how to look after your teeth and how to spread the word about the importance of healthy teeth

My oral health
Learn the science behind healthy teeth and your responsibilities for your own oral hygeine

Flu
Get the lowdown on germs and how they spread, what to do to stop their spread and how to fight flu

Seasonal flu
Learn about the science behind germs, how they spread, how to stop them spreading and how to fight flu.

Fig. 26.5 Public health messaging. These digital badges are an innovative approach to addressing key public health issues with children and young people. School nurses, teachers and wider community services including youth workers can work together to promote health and wellbeing through safe social media. Further badges are currently being developed, for more information visit www.makewav.es

Making a Difference—Improving Outcomes for Children and Young People

Outcomes Frameworks

School nurses need to demonstrate to commissioners that evaluation of their services and outcomes impacts their work. This is supported through national policy requiring measurement of outcomes against key indicators in the NHS Outcomes Framework and the Public Health Outcomes Framework (Department of Health 2013b, 2014a), for example, immunization coverage, provision of sexual health services, and delivering PSHE. It is recognized that measuring and publishing information on outcomes can improve quality of delivery through the identification of priorities for improvement.

Experience

Young people and parents report satisfaction with the interventions school nurses deliver. They also have encouraging perceptions of the nurses' skills and attitudes. Young people appreciate nurses being non-judgmental, approachable, caring, and empathic listening (Pryjmachuk et al. 2011; Kelly et al. 2005; Attwood et al. 2012).

Access and Engagement

Access and engagement of young people with school nursing services has been increased, including through the use of technologies such as text messaging, websites, Facebook, and more traditional methods such as clinics and school assembly (Bhardwa 2013; France 2013; Butler 2013; Chilvers 2011; Atherton 2009; Clapp 2009; Department of Health, n.d.).

Positive Lifestyle Choices

School nursing has a positive impact in relation to lifestyle issues such as smoking (Thomson 2012), alcohol (Rose 2013), teenage pregnancy (Triggle 2014; Lynch 2008; Department of Health, n.d.), and intention to carry out self-examination (Atherton 2009).

Emotional and Mental Health

From the evidence (Brooks et al. 2015), emotional health and well-being is an important issue. School nurses have an important role in facilitating early help and access to specialist services.

Outcomes relating to emotional and mental health have also been positively impacted, for example, emotions and conduct (Buckland et al. 2005), and anxiety and self-esteem (Attwood et al. 2012; Stallard et al. 2007).

School Attendance

School nurse interventions can lead to positive outcomes for schools regarding pupil absence and Ofsted (Office for Standards in Education, Children's Services and Skills) attendance rating (Sprinks 2011). Emotional health interventions can lead to a more supportive classroom culture (Stallard et al. 2007).

Responding to Need: Innovation and Patient Experiences

The following case studies illustrate young people's experience of services, while demonstrating the complexity of the school nurse role and provide a rich picture of the impact of their work to compliment the numerical data on outcome measures.

Emotional Health in Hertfordshire

School nurses work closely with Step2 Early Intervention Child and Adolescent Mental Health Service to provide young people with good quality support for mental health issues such as anxiety and depression. Step2 provide specialist mental health training to school nurses and in partnership, they work with schools and other services to ensure that difficulties are identified early and the right support is provided at the right time, including an increase of appropriate referrals to specialist mental health services. School nurses work with a range of specially designed resources such as the 'Emotional Wellbeing Fitness Prescription' and 'The Brain Box'™ to empower young people and their families to take ownership of their difficulties while breaking the stigma of mental health in young people and professionals.

Migrant Health in Birmingham

The school nurse visited a new family from Libya, in their home, in response to concerns about the children's poor school attendance. Through a holistic assessment and the use of excellent communication skills, the school nurse enabled the parents to share their experiences of violence and use of weapons for survival in their home country. They expressed concerns about the impact on their three sons' behavior and current friendship group. Together, they developed a plan to support the boys so they would feel safe and could begin to deal with the experiences they had witnessed. The boys consented to a referral so that they could receive counseling to address their emotional health and well-being issues, and to help them adjust to school and living in England.

Technology and Health in Leicestershire

ChatHealth is a texting service that was co-designed by school nurses and young people to provide access to timely, age-appropriate, and confidential help. Young people no longer have to wait for a clinic appointment or ask a teacher's permission to attend. Students just send a discreet SMS text message at any time and get 1:1 support from a school nurse. The service incorporates quality assurance mechanisms through a computer-based risk management system. Evaluation of ChatHealth is novel; it uses focus groups, surveys, mystery shoppers, and peer review of conversation transcripts. Student contacts with school nurses have increased considerably, with half of the contacts being anonymously. Young people's experiences and outcomes have been improved including reduced stigma and improved self-confidence. ChatHealth successfully reaches male users with double the number accessing support by text, through the traditional face-to-face methods.

Complex Health Needs in Hampshire

Asha was diagnosed with juvenile idiopathic arthritis shortly before starting high school. Asha was experiencing difficulty coping with fatigue, pain, limited movement, having a new peer group, and coming to terms with her diagnosis. This led to absence and lateness in her new school. Asha's situation was made more difficult because of parental uncertainty about what help was available and how to get help from school.

The school nurse worked in partnership with Asha, her parents, the medical team, and school to assess need, and develop an individual healthcare plan, which included pain management. The school nurse acted as an advocate for Ash, helping school personnel to understand the implications of her condition. Together, they found practical solutions to her need to move about school with her belongings. Although Asha still has significant health problems, she has now settled in. Her attendance has improved. She is better able to participate in lessons. And importantly, she has access to ongoing emotional support from the school nurse.

Health of Young Caretakers in London

Sara aged 15 is a young caretaker for two younger siblings and her mother, who is suffering from depression. Sara attended her school's 'nurse drop-in session' many times before she disclosed her caretaker responsibilities. She had not said anything previously because she was embarrassed (due to the stigma) about her mother's depression. The school nurse worked with Sara and her mother on a holistic psychosocial health assessment. The assessment identified that Sara had issues with isolation, sleep, money worries, falling attendance, and poor academic performance. Together, they were able to identify support for Sara and her mother. Sara accepted a referral to a 'Young Caretakers' group. This was important for Sara. She learned how depression affects her mother and her entire family. She also became involved in more activities with the group, made new friends, and became more resilience. Sara was also empowered to talk with her mother's general practitioner if she notices her mother's depression starts to worsen.

Sara regularly attends the school's 'nurse lunchtime drop-in' sessions. Her self-confidence continues to grow. Most recently, Sara began to run in after-school competitions.

Conclusion

There is an increased focus on public health and the prevention agenda both nationally and locally in England. The emergence of new structures such as Public Health England and the shift in commissioning have supported local needs-led provision and evidence-based practice delivery. However, there are increasing challenges for young people and the way they lead their lives; while there is evidence to suggest health is improving, particularly with risk-taking behavior, new health issues are emerging. Emotional health and well-being, together with rising rates of obesity, is a cause for concern. School nurses, as highly skilled specialist practitioners, and leaders of public health delivery are well placed to improve health and well-being outcomes. The structured school nurse model provides a robust framework for local delivery, which offers clarity and role definition. This will ensure partner agencies such as schools and importantly young people understand the service and where school nurses can make a difference.

The changes to the commissioning arrangements and austerity present both challenges and opportunities. There is an opportunity to work differently and maximize resources to achieve the greatest impact. Evaluation of outcomes is an essential element of service delivery and future planning. School nurses and commissioners need to work together to determine priorities and to identify where they can make the biggest improvements. The advances in technology provide opportunity for school nurses to engage more readily with young people and to find creative ways to address key public health issues.

References

Action for Children. (2016) *'Unplugging' from technology.* Retrieved from https://www.actionforchildren.org.uk/news-and-opinion/latest-news/2016/january/unplugging-from-technology/

AYPH. (2015). *Key data on adolescence.* London: Association for Young People's Health. Retrieved from http://www.youngpeopleshealth.org.uk/key-data-on-adolescence

Atherton, C. (2009). On hand, in school. *Community Practitioner, 82*(7), 32–33.

Attwood, M., Meadows, S., Stallard, P., & Richardson, T. (2012). Universal and targeted computerised cognitive behavioural therapy (think, feel, do) for emotional health in schools: Results from two exploratory studies. *Child and Adolescent Mental Health, 17*(3), 173–178.

Ball, J. (2009). *School nursing in 2009*. London: Royal College of Nursing. Retrieved from https://www2.rcn.org.uk/__data/assets/pdf_file/0007/275857/003552.pdf

Barlow, J., & Calam, R. (2011). A public health approach to safeguarding in the 21st century. *Child Abuse Review, 20*, 238–255.

Bhardwa, S. (2013). Mental health in young people. *Independent Nurse,* September 6, 2013. Retrieved from http://www.independentnurse.co.uk/news/mental-health-in-young-people-news-feature/63145/

British Youth Council. (2011). *Our school nurse: Young people's views on the role of the school nurse.*

Retrieved from http://www.byc.org.uk/media/75447/byc_school_nurse_report_web.pdf

Brooks, F., Magnusson, J., Kiemera, E., Chester, K., Spencer, N., & Smeeton, N. (2015). *HBSC England national report: Health behaviour in school aged children (HBSC): World Health Organization collaborative cross national study*. Retrieved from http://www.hbscengland.com/wp-content/uploads/2015/10/National-Report-2015.pdf

Buckland, L., Rose, J., & Greaves, C. (2005). Making a difference to families: Tackling challenging behavior. *Community Practitioner, 78*(2), 50–55.

Butler, R. (2013). 'School health matters': A web-based health resource for the school community. *Community Practitioner, 86*(10), 30–33.

Chase, E., Chalmers, H., Warwick, I., Thomas, F., Hollingworth, K., & Aggleton, P. (2011). Shifting policies and enduring themes in school nursing. *British Journal of School Nursing, 5*(10), 492–500.

Chilvers, J. (2011). Implementation of a Facebook page by school nurses. *Community Practitioner, 84*(4), 33–35.

Clapp, A. (2009). Reducing the rate of teenage pregnancy. *Practice Nurse, 37*(2), 32–35.

Dennison, C., Warwick, I., & Aggleton, P. (2010). Evaluating health and well-being in schools. In P. Aggleton, C. Dennison, & I. Warwick (Eds.), *Promoting health and well-being through schools* (pp. 162–170). New York: Routledge.

Department for Children, Schools and Families. (2010). *Teenage pregnancy strategy: Beyond 2010*. London: Author. Retrieved from http://webarchive.nationalarchives.gov.uk/20130401151715/http://www.education.gov.uk/publications/standard/publicationdetail/page1/DCSF-00224-2010

Department for Education. (2015). *Statistical first release: Schools, pupils and their characteristics: January 2015*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/433680/SFR16_2015_Main_Text.pdf

Department for Education. (2011). *Munro review of child protection: Final report—A child centred system*. London: Author. Retrieved from https://www.gov.uk/government/publications/munro-review-of-child-protection-final-report-a-child-centred-system

Department for Education & Department of Health. (2015). *Special educational needs and disability code of practice: 0 to 25 years—Statutory guidance for organisations which work with and support children and young people who have special educational needs or disabilities*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/398815/SEND_Code_of_Practice_ January_2015.pdf

Department of Health. (2016). *Best start in life and beyond: Improving public health outcomes for children, young people and families: Commissioning guide 3: Measuring performance and outcomes*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/493624/Service_specification_0_to_19_CG3_FINAL_19Jan2016. pdf

Department of Health. (2015a). *Future in mind: Promoting, protecting and improving children's mental health and wellbeing*. London: Author. Retrieved from https://www.gov.uk/government/publications/improving-mental-health-services-for-young-people

Department of Health. (2015b). *Speech: Improving children and young people's mental health care*. London: Author. Retrieved from https://www.gov.uk/government/speeches/improving-children-and-young-peoples-mental-health-care

Department of Health. (2014a). *The NHS outcomes framework 2015/16*. London: Author. Retrieved from https://www.gov.uk/government/publications/nhs-outcomes-framework-2015-to-2016

Department of Health. (2014b). *School nurse programme: Supporting the implementation of the new service offer: Supporting the health and wellbeing of young carers*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299270/Young_Carers_pathway_Interactive_FINAL.pdf

Department of Health. (2013a). *Chief medical officer's annual report 2012: Our children deserve better: Prevention pays*. London: Author. Retrieved from https://www.gov.uk/government/publications/chief-medical-officers-annual-report-2012-our-children-deserve-better-prevention-pays

Department of Health. (2013b). *Improving outcomes and supporting transparency: Part 1A: A Public Health Outcomes Framework for England: 2013–2016*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/263658/2901502_PHOF_Improving_Outcomes_PT1A_v1_1.pdf

Department of Health. (2013c). *Improving children and young people's health outcomes: A system wide response*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/214928/9328-TSO-2900598-DH-SystemWideResponse.pdf

Department of Health. (2012a). *Getting it right for children, young people and families: Maximising the contribution of the school nursing team: Vision and call to action*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216464/dh_133352.pdf

Department of Health. (2012b). *Report of the children and young people's health outcomes forum*. London: Author. Retrieved from https://www.gov.uk/government/publications/independent-experts-set-out-recommendations-to-improve-children-and-young-people-s-health-results

Department of Health. (2011a). Health visitor implementation plan: 2011–2015. London: Author. Retrieved from https://www.gov.uk/government/publications/health-visitor-implementation-plan-2011-to-2015

Department of Health. (2011b). *You're welcome quality criteria for young people friendly health services.* London: Author. Retrieved from https://www.gov.uk/government/publications/quality-criteria-for-young-people-friendly-health-services

Department of Health. (2011c). *UK physical activity guidelines.* London: Author. Retrieved from https://www.gov.uk/government/publications/uk-physical-activity-guidelines.

Department of Health. (2010). *Healthy lives, healthy people: Our strategy for public health in* England. London: Author. Retrieved from https://www.gov.uk/government/publications/healthy-lives-healthy-people- our-strategy-for-public-health-in-england

Department of Health. (2009). *Healthy child programme: From 5–19 years old.* London: Author. Retrieved from https://www.gov.uk/government/publications/healthy-child-programme-5-to-19-years-old

Department of Health. (n.d.). *Promoting effective health services for school aged children and young people: A good practice guide.* London: The Stationery Office.

Ellard, D., & Parsons, S. (2010). Process evaluation: Understanding how and why interventions work. In M. Thorogood & Y. Coombes (Eds.), *Evaluating health promotion* (pp. 87–101). Oxford University Press.

France, J. (2013). New texting service for teenagers has all-round benefits. *Nursing Standard, 28*(5), 13.

Hadley, A., Chandra-Mouli, V., & Ingham, R. (2016). Implementing the UK Government's ten-year teenage pregnancy strategy for England (1999–2010): Applicable lessons for other countries. *Journal of Adolescent Health.*

HSCIC. (2016a). *Maternity and children's data set.* West Yorkshire: Health and Social Care Information Centre. Retrieved from http://www.hscic.gov.uk/maternityandchildren

HSCIC. (2016b). *NHS workforce statistics—November 2015, Provisional statistics.* Yorkshire: Health and Social Care Information Centre. Retrieved from http://www.hscic.gov.uk/searchcatalogue?productid=20107&topics=1%2fWorkforce%2fStaff+numbers&sort=Relevance&size=10&page=1#top

HSCIC. (2015). *National Child Measurement Programme: 2014–2015.* Yorkshire: Health and Social Care Information Centre. Retrieved from http://www.hscic.gov.uk/catalogue/PUB19109

HM Government. (2015). *Working together to safeguard children: A guide to inter-agency working to safeguard and promote the welfare of children.* Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/419595/Working_Together_to_Safeguard_Children.pdf

Jones, L., & MeEwan, A. (2012). Reducing second-hand smoke exposure at home. *British Journal of School Nursing, 7*(8), 389–393.

Kelly, N., Greaves, C., Buckland, L., & Rose, J. (2005). School nurses: Well placed to address challenging behaviour. *Community Practitioner, 78*(3), 88–92.

Local Government Association. (2013). *Must know 5: What you need to know about early help.* Retrieved from http://www.local.gov.uk/c/document_library/get_file?uuid=50e58128-e1e3-4e66-bfaa-7cdd852a9-8d8&groupId=10180

Lynch, E. (2008). School of thought. *Nursing Standard, 22*(27), 22–23.

Mackay, S. (2010). Evidence based practice in health promotion. In D. Whitehead & F. Irvine (Eds.), *Health promotion and health education in nursing: A framework for practice*. (pp. 121–143). New York: Palgrave Macmillan.

Manning, V., Best, D., Faulkenern, N., & Titherington, E. (2009). New estimates of the number of children living with substance misusing parents: Results from UK national household surveys. *BMC Public Health, 9*(1), 377.

Munro, E. (2011). *The Munro review of child protection interim report: The child's journey.* Retrieved from https://www.gov.uk/government/publications/munro-review-of-child-protection-interim-report-the-childs-journey

NHS. (2016). *The routine immunisation schedule from summer 2015.* Redditch, England: National Health Service. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/500214/9406_PHE_2016_Complete_Immunisation_Schedule_A4_02.pdf

NHS England. (2014). *Five year forward view.* Redditch, England: National Health Service. Retrieved from https://www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf

NHS Future Forum. (2012). *The NHS's role in the public's health.* Redditch, England: National Health Service. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/216423/dh_132114.pdf

NMC. (2015). *The code: Professional standards of practice and behaviour for nurses and midwives*. London: Nursing and Midwifery Council.

NMC. (2004). *Standards of proficiency for specialist community public health nurses*. London: Nursing and Midwifery Council.

Ofcom. (2013). *Children and parents: Media use and attitudes report.* London: Author. Retrieved from http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/october-2013/research07Oct2013.pdf

Office for National Statistics. (2016). *Statistical bulletin: Conceptions in England and Wales: 2014.* London: Author. Retrieved from http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/conceptionandfertilityrates/bulletins/conceptionstatistics/2014

Office for National Statistics. (2015). *Population estimates for UK, England and Wales, Scotland and Northern Ireland: Mid-2014.* London: Author. Retrieved from http://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/

populationestimates/datasets/populationestimates-forukenglandandwalesscotlandandnorthernireland

Office for National Statistics. (2011). *2011 Census*. London: Author. Retrieved from https://www.ons.gov.uk/census/2011census

Pryjmachuk, S., Graham, T., Haddad, M., & Tylee, A. (2011). School nurses' perspectives on managing mental health problems in children and young people. *Journal of Clinical Nursing, 21*(5–6), 850–859.

Public Health England. (2016). *Public health contribution of nurses and midwives: Guidance*. London: Author. Retrieved from https://www.gov.uk/government/collections/developing-the-public-health-contribution-of-nurses-and-midwives-tools-and-models#school-aged-children-and-young-people-age-5-to-19

Public Health England. (2015a). *Health Visiting and School Nursing Programmes: Supporting implementation of the new service model: Health visiting and school nursing partnership—pathways for supporting health visitor and school nurse interface and improved partnership working*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/465412/2903820_PHE_School_Nursing_Accessible.pdf

Public Health England. (2015b). *National Child Measurement Programme Operational Guidance 2015 to 2016*. London: Author. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/487707/NCMPguidance201516FINAL.PDF

Public Health England. (2014). *From evidence into action: Opportunities to protect and improve the nation's health*. London: Author. Retrieved from https://www.gov.uk/government/publications/from-evidence-into-action-opportunities-to-protect-and-improve-the-nations-health

Rose, S. (2013). Nit nurse to nitty gritty. *Community Practitioner, 86*(7), 42–43.

Royal College of Nursing. (2014). *An RCN toolkit for school nurses: Developing your practice to support children and young people in educational settings* (Updated 2nd ed.) London: Author. Retrieved from https://www2.rcn.org.uk/__data/assets/pdf_file/0012/201630/003223.pdf

Sprinks, J. (2011). Nurse-led initiative focuses on parents to lessen health-related school absences. *Nursing Children and Young People, 23*(10), 6–7.

Squires, C. (2013). How can we make a difference? Delivering quality health education. *British Journal of School Nursing, 8*(9), 452–454.

Stallard, P., Simpson, N., Anderson, S., Hibbert, S., & Osborn, C. (2007). The FRIENDS emotional health programme: Initial findings from a school-based project. *Child and Adolescent Mental Health, 12*(1), 32–37.

Streeting, J. (2015). Still small voice. *Journal of Family Health, 25*(6), 45–47.

Streeting, J. (2010). Observations from QK. *Community Practitioner, 83*(4), 38–39.

Thomson, H. (2012). A successful approach to reduce youth smoking in Leicestershire. *British Journal of School Nursing, 7*(9), 441–447.

Triggle, N. (2014). Helping traveller families to brush up on health facts. *Nursing Children and Young People, 26*(2), 8–9.

Turner, G., & Mackay, S. (2015). The impact of school nurse interventions in England—Behaviour change, emotional health & wellbeing, mental health interventions: A literature review. *British Journal of School Nursing, 10*(10), 494–506.

Whitehead, D. (2010). A systematic approach to health promotion. In D Whitehead & F. Irvine (Eds.), *Health promotion and health education in nursing: A framework for practice* (pp. 60–94). New York: Palgrave Macmillan.

WHO. (2016). *School and youth health: What is a health promoting school*. Geneva: World Health Organization. Retrieved from http://www.who.int/school_youth_health/gshi/hps/en/

School Health Services to Meet Adolescent Needs in the USA

27

Erin D. Maughan and Martha Dewey Bergren

Introduction

Adolescents may not regularly visit healthcare providers unless required for sports, camp physicals, or urgent matters. The one consistent place they do frequent, however, is school. School health services (SHS) programs meet adolescents where they are, and provide the care and health prevention they need for adolescents to stay in school, graduate and become productive, healthy citizens. Interventions in schools impact adolescent behavior (Busch et al. 2013). This chapter will explain current SHS in the USA, as well as challenges and future initiatives to address the needs of adolescents.

The purpose of SHS in the USA has always focused on the health needs of students and fits within the larger schema of where education and health meet. During the early 1980s, the Coordinated School Health Model, a three-pronged approach, was introduced to meet student health needs by providing health education, health services, and a healthy environment (Lewallen et al. 2015; Institute of Medicine 1997). This idea was not new and was the implicit emphasis of SHS since it was developed in the late 1800s.

The Coordinated School Health Model was expanded in 1987 to include a comprehensive eight-pronged approach of essential public health principles of school health (Lewallen et al. 2015). This comprehensive model included the following: (1) health education, (2) physical education, (3) nutrition services, (4) school health services, (5) counseling and psychological services, (6) staff promotion, (7) healthy school environment, and (8) parent/community involvement. The model illustrates how each of these areas works together to meet the needs of the student.

In 2014, the US Centers for Disease Control and Prevention (Center for Disease Control and Prevention) and Association of Supervision and Curriculum Development (formally known as the Association of Supervision and Curriculum Development) introduced a new model that incorporated new evidence and knowledge developed since the 1980s (Lewallen et al. 2015). The new model, 'The Whole School, Whole Community, Whole Child (WSCC)', expanded the comprehensive model to include 10 components (see Fig. 27.1). The 10 components include the following: (1) health education; (2) physical education and physical activity; (3) nutrition environment and services; (4) health services; (5) counseling, psychological, and social services; (6) social and emotional climate; (7) physical environment; (8) employee wellness; (9) family engagement; and (10) community

E.D. Maughan (✉)
National Association of School Nurses, Silver Spring, MD, USA
e-mail: emaughan@nasn.org

M.D. Bergren
Advanced Population Health, Health Systems Leadership and Informatics, University of Illinois Chicago College of Nursing, Chicago, USA

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2_27

Fig. 27.1 Whole school, whole community, whole child model. *Source* Center for Disease Control and Prevention & Association of Supervision and Curriculum Development (2014)

involvement. Throughout the various models of school health, SHS has remained an important component of student health.

The purpose of SHS is to address actual health problems by providing first aid or emergency care, or management of chronic conditions, as well as to address potential health problems (Center for Disease Control and Prevention & Association of Supervision and Curriculum Development 2014, 2015). SHS includes screenings, health promotion and preventive care, and ensuring access to healthcare providers (including insurance). SHS also work with the community to ensure adequate resources to address both student and school staff needs, as well as address the emotional stressors of students and staff. SHS staff may include school nurses, dentists, nurse practitioners, physicians, physician assistants, health educators, and allied health providers.

Brief History of SHS

SHS have served schools since the 1800s. Schools were used as an extension of public health efforts to control and prevent communicable disease outbreaks (Institute of Medicine 1997). Medical doctors provided medical screenings/inspections in the schools, excluding infected students from school. Yet due to poor sanitation, close living quarters, and large immigrant populations who spoke a variety of languages, students were continually reinfected and missed long periods of school, which concerned the boards of education. In 1902, Lillian Wald suggested nurses be utilized in New York City to return students to school. Lina Rogers was chosen for this experimental program in four schools with the greatest rates of absenteeism. Nurse Rogers addressed sanitation needs, educated families regarding student infections, and assisted the families obtain medical treatment, so the students could recover and return to school. Within one year, 98 % of students who had been excluded for health concerns were back in school (Rogers 1908). School nursing was born, and by 1911, 102 cities had employed school nurses.

During this same time period, medical and dental clinics were also introduced, usually in poverty-stricken and immigrant populations where free care was offered. Visiting teachers (forerunners of school social workers) were also introduced to help immigrant families adjust to America and obtain the resources needed (Institute of Medicine 1997). Rural America also lacked access to care and suffered outbreaks of communicable diseases. The American Red Cross (through the Visiting Nursing Services) and Frontier Nursing Service brought nurses to rural schools to address as well as prevent future health concerns.

Beginning with World War I, military recruits were found to be underweight, and so increased emphasis was placed on school health programs to provide lunch programs and expanding other health services (Institute of Medicine 1997). However, in the 1920s and 1930s medical doctors began lobbying for school health services to be eliminated, along with efforts to discourage universal health coverage, calling SHS 'socialized medicine.' Medical associations pushed for care to be given by individual physicians outside of school. Yet the onset of World War II and underweight draftees once again put the emphasis back on school health programs (Woodfill

1986). By the 1940s, schools were invested in not just instructing students but in the general health and well-being of students.

The investment in school health as a component of the education system led to a change in funding support of school nurses. Originally, school nurses were predominantly employed by public health and community organizations. However, by the 1940s school nursing services were primarily funded with education dollars. School nurses' responsibilities addressed the current needs of the time, focusing on health screenings, and education on topics such as hygiene and nutrition. Over time, school nurses also focused on prevention of communicable disease through immunizations as well as addressing chronic conditions and high-risk behaviors (Institute of Medicine 1997). Budget restraints and competing educational priorities impacted the number of school nurses funded and the extent of SHS at various times during the twentieth century.

During the 1960s due to an increased understanding of how students' physical, mental, and emotional well-being influenced academic success and a race to increase the graduation of science- and math-oriented students who could influence the space program, additional education dollars were devoted to school support services. This led to increased funding for school health services programs including mental health workers and school nurses (Paisley and McMahon 2001; Woodfill 1986).

During the 1970s, federal legislation such as Individuals with Disabilities Act and the 1973 Rehabilitation Act, focused on educating students with disabilities in the least restrictive school environment. However, cuts in education budgets and shortages of nurses led a decrease in school health services during the 1980s–1990s. It was not until 1999 when the Supreme Court ruled in *Cedar Rapids versus Garrett* that boards of education had a responsibility to support and fund services for students who require skilled nursing care in order to attend school. This strengthened the need for nurses in the schools.

As well, during the 1970s, advanced practice nurses (nurse practitioners) were beginning to become available to provide primary care for children and students (physician assistants began in the 1960s to meet a physician shortage). With mid-level providers in the community, neighborhood clinics expanded. School-based health centers housed directly in the school for easy access were proposed and piloted. The first school-based clinic was in a high school in Minnesota, which focused on reproductive health needs of students to decrease teen pregnancy (Berg et al. 1979). The clinics in the school were controversial due to the focus on reproductive health, and soon clinics were providing other services. Elementary school clinics were established where reproductive health services were not included. Clinics were often funded through donations of healthcare systems and non-profit organizations, but also billed insurances for individual student visits.

US Healthcare Structure

In order to understand SHS, it is important to understand that in the USA, access to health care has not traditionally been a universal right (Department for Professional Employees 2014). The structure and culture of the US healthcare system support individualized care, not the role of school nurses as population-based care providers. The US healthcare system is based on employers providing private healthcare coverage for employees and their families; and is focused on reimbursement of individual services, or 'fee for service.' During the 1960s when the 'War on Poverty' programs such as Medicaid were established, which funds health care for all members of very low-income families. Legislation in the 1990s expanded to include publicly funded individual health insurance coverage for children whose parents were unable to afford health insurance. Population-based health care is not covered within the US healthcare system.

In addition, the traditional 'culture' of the US healthcare system is based on sickness and curing, rather than prevention and wellness. The USA spends more than any other nation for health care, with emphasis on developing new

technologies and medications to cure disease (Department for Professional Employees 2014). Although there has been a shift in attention on and importance of prevention and health promotion, the structure of the US system does not support this approach. The passage of the Patient Protection and Affordable Care Act (ACA) in 2010 provides incentives to change this culture, but spending and emphasis on sick care is so ingrained and accepted by both providers and clients, it will take time for a complete shift to a focus on well care and disease prevention.

The structure of the US government also defers health and education funding and delivery decision making to state governments. Thus, state and local laws and guidelines govern mandate activities, the role of nursing practice, and if certain procedures can be delegated to non-nursing personnel. The 2015 Every Student Succeeds Act (ESSA) allows even more local control of plans to address local needs. The structure of the system at the local/state level has created flexibility in how SHS are conducted in schools.

Current Health Concerns of Children in the USA

Nearly 14 % of the US population is between the ages 10 and 19 years (US Census Bureau 2013). The leading causes of death of US adolescents (aged 15–19 years) include unintentional injuries/accidents, suicide, homicide, all of which are preventable (Heron 2016). There are also racial and ethnic disparities, especially among low-income youth in many chronic health conditions, not limited to teen pregnancy, oral health, and obesity (US Department of Health and Human Services 2016). Adolescents are developmentally more at risk for choices and behaviors that endanger health. Population health problems that peak during the adolescent years are homicide, suicide, motor vehicle accidents, substance abuse (drugs, tobacco, alcohol), sexually transmitted infections, and unplanned pregnancies (US Department of Health and Human Services 2016).

The Youth Risk Behavioral Surveillance System (YRBSS) is conducted in secondary schools throughout the USA every other year that asks youth to self-report behaviors related to injury, violence, substance use, diet, physical activity, and sexual activity. The 2013 survey reports that 47 % of high school students have had sexual intercourse, with 6 % prior to age 13 years and 15 % with four or more partners (Center for Disease Control and Prevention 2013a). Despite high levels of sexual activity, 41 % did not use a condom during last sexual intercourse and 14 % did not use any method of birth control during their last sexual intercourse (Center for Disease Control and Prevention 2013a, b). Although tobacco use is decreasing, 15.7 % of teens currently smoke cigarettes (Center for Disease Control and Prevention 2013d). Most teens (66.2 %) have ever used alcohol, with 34.9 % currently drinking, 18 % started drinking before age 13, and 20.8 % reported binge drinking in the previous 30 days (Center for Disease Control and Prevention 2013c).

Chronic health conditions affect a significant proportion of adolescent youth in the USA. Parents report that 18 % percent of adolescents have at least one moderate or severe chronic condition (Child and Adolescent Health Measurement Initiative 2014). Those chronic conditions include asthma (13 %), overweight (31 %), and obesity (14 %). While the overall prevalence of diabetes is low, from 2001 to 2009, the prevalence of type 1 diabetes increased 21 % among all children, and the prevalence of type 2 diabetes increase 30 % among youth ages 10–19 (Dabelea et al. 2014). The National Institute of Mental Health reports approximately 13 % of children 8–15 years old have mental health problems, which include attention-deficit/hyperactivity disorder (ADHD) (8.5 %), mood disorders (3.7 %, and major depression 2.7 %) (Perou et al. 2013). Adding to the burden, adolescents with chronic conditions are more likely to suffer from low self-esteem and negative self-image than their peers (Yeo and Sawyer 2005). They often struggle with frustration from the self-care and management required of the condition. Adolescents do not typically adhere to

the program of care prescribed by their health professionals, causing concern and conflicts with their parents. Adolescents are at a pivotal point in their lives where lifestyle, unhealthy choices, and risky behaviors can lead to early death or lifelong health preventable conditions.

SHS Activities in the USA

The Centers for Disease Control and Prevention (Center for Disease Control and Prevention) conducts a regular School Health Policies and Practices Survey (SHPPS) that tracks the SHS provided at the state, district, and local elementary and secondary (middle and high) schools (Center for Disease Control and Prevention 2015b). For the SHPPS study, elementary schools are defined as schools that include kindergarten through grade 4; middle schools are defined as schools that include grades 7 and 8; and high schools are schools that include grades 10, 11, or 12. Although SHPPS does not indicate who provides the service, it acknowledges a registered nurse ideally carries out school health services. Table 27.1 highlights SHS provided by school level.

SHPPS found that 9.6 % of schools have at least a part-time physician providing services (15.1 % of high schools and 8.8 % of middle schools). School districts may contract for a medical provider to provide oversight or consultation for the health of students in the district. The Center for Disease Control and Prevention (2015b) SHPPS found this to be true for 35.7 % of schools (34.5 % middle school; 42 % high school). School nurses were identified as the most common provider of SHS. School-based health centers (SBHCs) were also reported. Each of these models and specific activities they perform, as well as new emerging SHS models will be described below.

School Nurses

School nurses are registered nurses (RNs) who provide health services to the entire school community and include programs that prevent disease, educate about and promote health, manage acute and chronic health conditions, and mitigate emergencies. There are over 65,000 practicing school nurses (US Department of Health and Human Services, Health Resources and Services Administration 2013), with 82 % of all schools (and 78.4 % of middle schools and 78.4 % of high school) reporting access to at least a part-time school nurse (Center for Disease Control and Prevention 2015b). A 2015 survey indicated that 45.3 % of respondents had a bachelor's degree (BS) in nursing and 11.5 % had a master's degree (MS/MSN) (Mangena and Maughan 2015).

School nurses have traditionally been employed and funded by education dollars, with 83 % of school nurses employed by public education and 90 % of the funding for their position comes from education dollars (Mangena and Maughan 2015). Over half (57 %) of school nurses report their employer bills US government-funded Medicaid for some services provided to low-income children. Nearly three-fourths (73.0 %) of school nurses reported partnering with a health department, and 41.2 % partner with community clinics.

Many models of school nursing practice exist. Some school nurses work in just one school; other school nurses may cover multiple schools. School nurses may work with licensed practical/vocational nurses (LPNs/LVNs) and healthcare aides to deliver care. In all models, 98 % of school nurses reporting they provide direct services to students.

School nurses provide a variety of services for students and staff in the school based on their assessment of the school population and individual assessment of students with chronic conditions or at risk concerns. Most school nurses have an open door policy for students to visit them without appointments, yet school nurses may also set aside time for facilitating support groups and education. Most US school districts do not allow students, especially those in elementary school, to self-medicate. Medication that is regularly prescribed or needed to address symptoms or discomfort must be administered by

Table 27.1 Results from Center for Disease Control and Prevention SHPPS, percentage of schools providing specific health services (Center for Disease Control and Prevention 2015a, b)

Services	Elementary	Middle	High
Administration of medication	98.0	96.8	97.0
Alcohol or other drug use treatment	NA[a]	16.6	33.3
Alcohol or other drug use prevention	26.5	27.7	54.8
Assistance enrolling in Medicaid or state Children's Health Insurance	47.5	37.4	48.3
Case management for students with chronic health conditions	73.2	71.6	77.3
Contraceptives	NA	3.6	11.0
Counseling for emotional or behavioral disorders	77.3	71.7	76.4
HIV counseling, testing, and referral	NA	18.0	40.2
HIV prevention	NA	17.7	47.2
Identification of emotional or behavioral disorders	79.2	69.2	83.9
Identification of or referral for eating disorder	NA	18.0	40.2
Identification of or referral for physical, sexual, or emotional abuse	87.2	82.0	83.9
Identification or school-based management of acute illness	73.1	62.7	68.4
Identification or school-based management of chronic health conditions	86.1	76.9	80.3
Identification or referrals for oral health problems	65.4	53.8	58.0
Identification, treatment of, or referral for STD	NA	21.9	53.8
Injury prevention and safety counseling	45.0	34.1	43.0
Instruction of self-management of chronic health conditions	73.3	66.7	69.2
Nutrition and dietary behavior counseling	35.9	35.1	42.1
Pregnancy prevention	NA	16.5	41.3
Referrals for chronic health conditions	67.7	66.3	74.2
Season influenza vaccine	17.0	15.0	16.5
Services for gay, lesbian, or bisexual students	NA	20.2	34.6
STD prevention	NA	18.6	44.7
Stress management	60.8	52.2	61.5
Suicide prevention	41.4	36.7	64.5
Tobacco use cessation	NA	19.4	39.2
Tobacco prevention	21.9	27.7	44.0
Tracking students with chronic health conditions	83.2	76.6	81.1
Violence prevention (bullying, fighting, dating violence)	68.5	60.1	66.5
Vision screening conducted	91.5	81.7	58.7
Weight management	35.3	25.7	42.7

[a]*NA* not asked in elementary schools

a provider (74 % of the time a school nurse; 21 % by healthcare aides) in the school health office (Center for Disease Control and Prevention 2015b). Students must leave their classrooms, often multiple times a day, to be given medication required for chronic health conditions.

The National Association of School Nurses (NASN) has developed a framework for school nursing practice in the twenty-first century. The Framework includes 5 non-hierarchal principles of practice for school nurses: Care Coordination, Leadership, Quality Improvement, Public Health,

and Standards of Practice. Each principle includes various practice components that help explain activities of a school nurse. The list is not all encompassing but rather provides guidance of major practice activities. A large focus of school nurses is to identify students where social determinants and health disparities impact health outcomes (National Association of School Nurses 2016).

A 2013 NASN survey asked school nurses how they spent the majority of their time by identifying their top five activities (National Association of School Nurses 2013). The activities were not distinguished for elementary or secondary schools but still provide insight into school nursing activities. Close to 100 %, 96.4 % of school nurses address illnesses and 94.1 % address injuries. Care coordination of chronic conditions is also a large component of school nursing activities, with 83.5 % manage chronic health conditions (National Association of School Nurses 2013).

Although many adolescents are able to understand their condition and manage it with independence, the adolescent years bring new concerns. Many school nurses indicate that often students rebel and make choices not optimal for managing their health condition (Yeo and Sawyer 2005). Youth do not want to be 'different' than their peers and they may be frustrated about their situation, or they want to be in control of their bodies and health. Whatever the reason, school nurses help students manage the conditions and empower youth. Nurses prepare students for the transition to young adulthood and full independence.

School nurses also conduct group meetings for adolescents to discuss their concerns, obtain peer support, and learn more about their condition (Newman 2012). These groups are often specific to a chronic condition such as asthma and diabetes, or medication management. Whereas healthcare providers usually only see adolescents with chronic conditions every few months, school nurses are with students daily and make a difference in health outcomes. In an emerging trend, school nurses use electronic health records (EHRs) that are interoperable with other healthcare providers to communicate healthcare plans and progress for all parties involved. The EHRs also allow for school nurse to track students with chronic conditions and evaluate the student's response to the treatment plan.

NASN, along with the National Association of State School Nurse Consultants (NASSNC), are working on a joint initiative to develop a minimum data set for all school nurses to collect specific data points the same way (Maughan et al. 2014). The data set will eventually include data points critical to adolescent health, but at this time more universal data such as workforce, chronic conditions, and health office disposition are the focused collection points (Bergren et al. 2016).

School nurses perform many screenings for depression, substance use, and other health concerns. School nurses also spend much of their time addressing behavioral health (72.6 %) and mental health concerns (59.9 %) (National Association of School Nurses 2013). School nurses build relationships with students, so youth will trust the nurses when sensitive health conditions arise. School nurses are perceptive of youth at risk who are hesitant to seek services. School nurses may use motivational interviewing or individualize education to address student needs (Sypneiwski 2016).

Although only 31.3 % of school nurses indicated the majority of their time was spent addressing substance/alcohol abuse, 70.7 % would like to spend more. A growing number of school nurses are being trained in Screening, Brief Intervention, and Referral to Treatment (SBIRT). SBIRT is evidence-based interventions that identify students with potential substance abuse concerns, provides a brief intervention, and then assists them receive further treatment (Substance Abuse and Mental Health Service Administration 2016).

Although only 27.3 % schools address violence as one of their top five activities, 74.1 % of school nurse reported that they would like to prioritize interventions for violence. Only 34.8 % of school nurses spent a majority of their time managing or preventing pregnancy, compared to

60 % who would like to spend the majority of their time on those issues (National Association of School Nurses 2013). Misunderstandings by educators as to their role and workload were reasons school nurses currently do not devote the time they would like on these concerns. Other literature indicates school nurses appropriately identify students at risk for many behaviors including self-harm and suicide and appropriately intervene (Russell and Hartung 2016). They also have effectively used evidence-based interventions that focused on protective factors to improve outcomes for students with disabilities (Vessey and O'Neill 2011).

School nurses effectively address chronic absenteeism, oral health, obesity/weight concerns, and provide other individual and group health teaching on substance use (tobacco, alcohol, and other drugs). In fact, in 30.5 % of schools (29.7 % of middle schools; 31.4 % of high schools), nurses deliver content as instructors during health education classes (Center for Disease Control and Prevention 2015b). School nurses also conduct individual and group classes. They also use social media to connect with students, staff and colleagues to bring about changes in self-care or healthy behaviors (Wysocki 2015).

School nurses prevent communicable disease by ensuring children who attend school have received mandatory vaccinations. Ninety-five percent (95 %) of school nurses track or provide immunizations for vaccine-preventable diseases (National Association of School Nurses 2013).

School nurse address physical, social, or emotional needs of students so they can stay in school ready to learn. Researchers report school nurse efforts successfully impact the academic and health outcomes of students. School nurses decrease absenteeism and early dismissal of students so students stay in school ready to learn (Hill and Hollis 2012; Pennington and Delaney 2008; Telljohann et al. 2004). School nurses also assist students manage chronic conditions to improve outcomes and decreased attendance due to illness (Engelke et al. 2011; Moricca et al. 2013). In addition, schools with school nurses have better immunization rates and assist students lose weight, stop smoking, improve mental health, and avoid pregnancy (Bohnenkemp et al. 2015; NASN 2015; Salmon et al. 2004).

School nurses provide a persuasive return on investment. Wang et al. (2014) found that for every dollar spent on school nursing in Massachusetts, the community saved $2.20. Additionally, the study did not measure the value of school nurses' prevention activities. Baisch et al. (2011) found a school nurse saved principals nearly one hour and clerical staff approximately 46 min every day.

Satisfaction

Satisfaction surveys are not routinely conducted for school nurse services and often focus on input of parents' and teachers' perspectives. These surveys indicate overall satisfaction with school nurses who are professional and members of the school health team (Maughan and Adams 2011). In situations where there is not a full-time school nurse, staff often express the need for additional nurses (Winland and Shannon 2004; Biag et al. 2015). Yet, many parents do not understand what school nurses do, focusing on their role providing first aid and immediate care instead of the school nurse's role in health population-based prevention (Kirchofer et al. 2007). Educators and school administrator often misunderstand the role school nurses as well (Green and Reffel 2009).

US healthcare has placed increased to emphasize on 'patient-focused' care. The focus of patients has been on those who are sick, but for SHS it is critical that preventative care and case management for all students are integrated. The National Association of School Nurses was awarded a grant in 2015 from Patient-Centered Outcomes Research Institute (PCORI) to develop partnerships with students with special healthcare needs, their caregivers, and other SHS and community health providers in order to identify and address the needs of students and their families. The grant focuses on research, but the case management techniques are being adopted by other school nurses, especially the techniques related to approaching students and their families for the best healthcare outcomes.

School-Based Health Centers

School-based or linked health centers are medical clinics that provide primary care to students enrolled in the center utilizing a multi-disciplinary team. School-based health centers (SBHC) are located within the school, whereas school-linked health centers are located near by a school for easy access. SBHCs are found in both rural and urban areas. According to the latest 2013–2014 census, there are nearly 2315 school-based or linked health centers in the USA (School-based Health Alliance 2015) with 3 % of middle schools and 7.7 % of high schools report having SBHCs (Center for Disease Control and Prevention 2015b). Of these centers, 94 % of the centers were in schools, with 23.4 % serve high schools, and 8.8 % serve middle schools. An additional 27.9 % serve pre-k through grade 12. Well over half (66 %) of SBHC serve traditional public schools. Although they may also serve private/parochial schools, charter schools, and community schools, three percent (3 %) of SBHC are mobile centers, which are clinics in vans or large vehicles that travel to different locations.

Many SBHC also receive reimbursement from students' insurance (often Medicaid). SBHC, however, are not sustainable from reimbursements. Funding of SHBCs comes from multiple sources including hospitals, public health, private donations, and state tax dollars. Recent federal legislation, including the Affordable Care Act (ACA), has also provided funding for SBHC (Keeton et al. 2012).

SBHC operate as primary care provider offices. Students enrolled in the SBHC receive health care at the center. Some SBHCs require appointments; others allow walk-ins. Parents provide signed permission for their youth to go to the clinic at enrollment, at the beginning of each school year.

Many SBHC provide prevention and manage chronic conditions including mental health, with 67.2 % of SBHCs being staffed by primary care provider and a behavioral health provider (School-based Health Alliance 2015). Over 75 % of SBHC provide screenings for depression and 71 % provided screening for anxiety. Some SBHC may administer immunizations, provide dental service, health education, and conduct health fairs for the schools where they are based. Over 70 % of SBHC in middle/high schools provide prevention counseling on subjects such as substance abuse, violence prevention, suicide prevention, dating violence, as well as, positive youth development. In addition, 80 % of SBHC provide abstinence counseling, while 80 % provide pregnancy testing, and close to 70 % provide sexually transmitted infection testing. Yet, 90 % of SBHC indicate district policy restricts them from dispensing contraceptives. Many adolescents report high levels of satisfaction using SHBCs (Keeton et al. 2012).

A systematic review of the literature found that SBHC deliver positive student academic and health outcomes (Community Preventive Services Task Force 2015). Students who were enrolled in SBHC, especially those from low-income areas, progressed in school with an average 11 % increase in grade promotion than those not participating in SBHCs. In addition, students' immunization rates increased by a median of 15.5 %, while emergency department visits for asthma decreased by 15.8 %, while non-asthma hospitalizations decreased by 51.6 %. SBHC who provide preventive services have effectively decreased alcohol and other substance use by a median of 14.8–27.2 %. Contraceptive use increased by 7.8 %; while pregnancy rates decreased by 40 %.

Having a SBHC does not replace the need for a school nurse. SBHC serve the students who enroll in their clinic and provide primary care. School nurses provide care for all students within the school. School nurses can triage students and help those who need care to enroll in the SBHC or to locate a primary healthcare provider. In some schools, the school nurse's office is housed within the SBHC. Working together SBHCs and school nurses provide comprehensive SHS.

Other Emerging Models

With the increased use of technology, new models of SHS have arisen that use telemedicine

or telehealth in the schools to address health concerns from chronic disease management to health education. Telehealth in the schools may include web cameras, telephones, or videoconferencing, along with other technology to connect school nurses with primary health providers, or to connect with a school nurse in schools without a full-time school nurse on site.

Models vary but outcomes are promising because telehealth allows increased communi cation/collaboration, improves convenience of services, while also decreasing absenteeism, and it is cost-effective (Reynolds and Maughan 2015). In some schools, school nurses triage students and then use the telehealth technology to consult on particular students with healthcare providers in other areas. They may have stethoscopes or otoscopes that transmit images to the remote healthcare provider. SBHCs may also use telehealth to connect with a remote provider. Telehealth may also be used by an instructor to provide group health education to staff, and individual students, or groups in a remote location. Like SBHCs, telehealth is not sustainable from insurance reimbursement. Additional funding comes from grants, non-profit organizations, and hospital systems (Reynolds and Maughan 2015). Participants are satisfied with telehealth services and appreciate the time saved by not having to travel long distances.

Future Challenges

One of the biggest challenges of SHS for adolescents is to focus on the current needs of adolescents versus traditional services. Adolescents are not just 'bigger kids.' School nurses and other providers of SHS for adolescents require specialized training to work with adolescents. Outreach to vulnerable youth and those at highest risk are critical. As racial and ethnic diversity increase among adolescents, it is also critical for SHS to become increasingly culturally sensitive, while also identifying and addressing social determinants and health equities. In addition increased evidence shows that improving youth protective factors (such as positive home, school, and community environment) assist to reduce life stressors, which often decrease risky behaviors (Center for Disease Control and Prevention 2015a). SHS need to apply these principles and focus on the whole child in their practice.

The average age of school nurses is 57 years old, which means most will be retiring in the next 10 years. The profession of school nursing will be losing great wisdom and experience, and so developing mentorship programs and providing professional development for school nurses will be critical to meet the need of adolescents and ensure practice is evidence-based. At the same time, a new generation of nurses with current skills in population health and evidence-based practice have a lot to offer for innovative delivery models and financing strategies.

Many other programs and organizations exist who are stakeholders in adolescent health. With new SHS models coming into the schools, it is important that activities and resources are coordinated and do not duplicate existing SHS. Schools are inundated with requests by often outside agencies that wish to conduct programs targeting youth. Yet, these programs may not understand existing SHS or district policies. In addition, the programs that are in the schools should be sustainable beyond a research project and so it is important to coordinate with existing SHS for long-term sustainability. Keeping the focus of activities on the needs of the individual adolescent and the population in that school and not the individual goals of outside agencies is critical.

A challenge beyond the schools is how to connect the larger healthcare system of the USA, university researchers with good intentions, the public health departments, and other groups so that resources are coordinated and efficiently used. Technology and the use of EHR may help improve communication between providers, but only if the programs are interoperable and relationships are protected.

The USA is going through a healthcare funding revolution. It is critical for SHS and advocates of adolescent health to be part of the discussions related to care across the continuum, value-based funding, population-based funding,

accountable care organizations, and other discussions related to funding of SHS. It is critical that school nurses, public health, SBHCs, and others interested in adolescent health work together to advocate for models that meet the needs of adolescents. The teens themselves may have creative solutions that could be directed to meet their personal needs and empower them to improve their generation's health and academic outcomes. They are our future.

References

Baisch, M. J., Lundeen, S. P., & Murphy, M. K. (2011). Evidence-based research on the value of school nurses in an urban school system. *Journal of School Health, 81*, 74–80. doi:10.1111/j.1746-1561.2010.00563.x

Berg, M., Taylor, B., Edwards, L. E., & Hakanson, E. Y. (1979). Prenatal care for pregnant adolescents in a public health school. *Journal of School Health, 49*, 32–35.

Bergren, M. D., Maughan, E. D., Wolfe, L. C., Patrick, K. H., Watts, E. S., Pontius, D. J., et al. (2016). What's Up with "Step up"? Step up and be counted: The national uniform school nurse data set. *NASN School Nurse, 31* (1), 29–32. doi:10.1177/1942602X15619936

Biag, M., Srivastava, A., Landau, M., & Rodriguez, E. (2015). Teachers' perceptions of full-and part-time nurses at school. *Journal of School Nursing, 31*(3), 183–195. doi:10.1177/1059840514561863

Bohnenkemp, J. H., Stephan, S. H., & Bobo, N. (2015). Supporting student mental health: The role of the school nurse in coordinated school mental health care. *Psychology in the Schools, 52*(7), 714–727. doi:10.1002/pits.21851

Busch, V., de Leeuw, J. R. J., de Harder, A., & Schrijvers, A. J. R. (2013). Changing multiple adolescent health behaviors through school-based interventions: A review of the literature. *Journal of School Health, 83*(7), 514–523. doi:10.1111/josh.12060

Center for Disease Control and Prevention. (2013a). *HIV and other STD prevention in US students*. Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/pdf/us_hiv_combo.pdf

Center for Disease Control and Prevention. (2013b). *Teen pregnancy prevention and US students*. Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/pdf/us_hiv_combo.pdf

Center for Disease Control and Prevention. (2013c). *Youth risk behavior survey. Trends in the prevalence of alcohol use National YRBS: 1991–2013*. Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/pdf/trends/us_alcohol_trend_yrbs.pdf

Center for Disease Control and Prevention. (2013d). *Youth risk behavior survey. Trends in the prevalence of tobacco use National YRBS: 1991–2013*. Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyyouth/data/yrbs/pdf/trends/us_tobacco_trend_yrbs.pdf

Center for Disease Control and Prevention. (2015a). *Protective factors.* Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyyouth/protective/index.htm

Center for Disease Control and Prevention. (2015b). *Results from the school health policies and practices study 2014.* Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyyouth/data/shpps/pdf/shpps-508-final_101315.pdf

Center for Disease Control and Prevention. (2016). *Healthy people 2020: Adolescent health.* Atlanta, GA: Author. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/Adolescent-Health

Center for Disease Control and Prevention & Association of Supervision and Curriculum Development. (2014). *The whole school, whole community, whole child model.* Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyyouth/wscc/pdf/wscc_fact_sheet_508c.pdf

Center for Disease Control and Prevention & Association of Supervision and Curriculum Development. (2015). *Components of the whole school, whole community, whole child (WSCC).* Atlanta, GA: Author. Retrieved from http://www.cdc.gov/healthyschools/wscc/components.htm

Child and Adolescent Health Measurement Initiative; The Data Resource Center for Child and Adolescent Health. (2014). *National survey of children's health*. Portland, OR: Retrieved from http://childhealthdata.org/browse/survey/results?q=2473&r=1&g=448

Community Preventive Services Task Force. (2015). Promoting health equity through education programs and policies: School-based health centers. *The Guide to Community Preventive Services: The Community Guide.* Atlanta, GA: Retrieved from http://www.thecommunityguide.org/healthequity/education/RRschoolbasedhealthcenters.html

Dabelea, D., Mayer-Davis, E., Saydah, S., Imperatore, G., Linder, B., Divers, J. …. Hamman, R. (2014). Prevalence of Type 1 and Type 2 diabetes among children and adolescents from 2001 to 2009. *The Journal of the American Medical Association 311*(17), 1778–1786. doi:10.1001/jama.2014.3201

Department for Professional Employees AFL-CIO. (2014). The U.S. health care system: An international perspective. Washington, D.C. Retrieved from http://dpeaflcio.org/programs-publications/issue-fact-sheets/the-u-s-health-care-system-an-international-perspective/

Engelke, M. K., Swanson M., Guttu, M., Warren, M. B., & Lovern, S. (2011). School nurses and children with diabetes: A descriptive study. *North Carolina Medical Journal, 72*, 351–358. Retrieved from http://www.ncmedicaljournal.com/wp-content/uploads/2011/09/725-complete-issue.pdf

Green, R., & Reffel, J. (2009). Comparison of administrators' and school nurses' perceptions of the school nurse role. *Journal of School Nursing, 24*, 62–71. doi:10.1177/1059840508324248

Heron, M. (2016). Deaths: Leading causes for 2013. *National Vital Statistics Reports, 65*(2), 1–95. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_02.pdf

Hill, N. J., & Hollis, M. (2012). Teacher time spent on student health issues and the school nurse presence. *Journal of School Nursing, 28*, 181–186. doi:10.1177/1059840511429684

Institute of Medicine. (1997). *Schools and health: Our nation's investments.* Washington, DC.: National Academy Press.

Keeton, V., Soleimanpour, S., & Brindis, C. D. (2012). School-based health centers in an era of health care reform: Building on history. *Current Problems in Pediatric Adolescent Health, 42*(6), 132–158. doi:10.1016/j.cppeds.2012.03.002

Kirchofer, G. M., Telljohann, S. K., Price, J. H., Dake, J. A., & Ritchie, M. (2007). Elementary school parents'/guardians' perceptions of school health service personnel and the services they provide. *Journal of School Health, 77*, 607–614. doi:10.1111/j.1746-1561.2007.00240.x

Lewallen, T. C., Hunt, H., Potts-Datema, W., Zaza, S., & Giles, W. (2015). The whole school, whole community, whole child model: A new approach for improving educational attainment and healthy development. *Journal of School Health, 85*(11), 729–739. doi:10.1111/josh.12310

Mangena, A. S., & Maughan, E. D. (2015). The 2015 NASN school nurse survey: Developing and providing leadership to advance school nursing practice. *NASN School Nurse, 30*(6), 328–335. doi:10.1177/1942602X15608183

Maughan, E. D., & Adams, R. (2011). Educators' and parents' perception of what school nurses do: The influence of school nurse/student ratios. *Journal of School Nursing, 27*(5), 355–363. doi:10.1177/1059840511416368

Maughan, E. D., Johnson, K. H., Bergren, M. D., Wolfe, L. C., Cole, M., Pontius, D. J., et al. (2014). Standardized data set for school health services: Part 1-getting to big data. *NASN School Nurse, 29*(4), 182–186. doi:10.1177/1942602X14538414

Moricca, M. L., Grasska, M. A., Marthaler, M. B., Weismuller, P. C., & Galant, S. T. (2013). School asthma screening and case management: Attendance and learning outcomes. *Journal of School Nursing, 29*, 104–112. doi:10.1177/1059840512452668

National Association of School Nurses. (2013). *2013 School nurse survey* (unpublished data). Silver Spring, MD: NASN.

National Association of School Nurses. (2015). *The role of the school nurse in combatting chronic absenteeism.* Retrieved from https://www.nasn.org/portals/0/advocacy/whitepaperabsenteeism.pdf

National Association of School Nurses. (2016). Framework for 21st century school nursing practice: National Association of School Nurses. *NASN School Nurse, 31*(1), 45–53. doi:10.1177/1942602X15618644

Newman, D. (2012). School nurse-facilitated group meetings for adolescents with diabetes. *NASN School Nurse, 27*(1), 15–17. doi:10.1177/1942602X11426460

Paisley, P. O., & McMahon, H. G. (2001). School counseling for the 21st century: Challenges and opportunities. *Professional School Counseling, 5*(2), 106–115.

Pennington, N., & Delaney, E. (2008). The number of students sent home by school nurses compared to unlicensed personnel. *Journal of School Nursing, 24*, 290–297. doi:10.1177/1059840508322382

Perou, R., Bitsko, R. H., Blumberg, S. J., Pastor, P., Ghandour, R. M., Gfroerer, J. C. … Huang, L. N. (2013). Mental health surveillance among children—United States, 2005–2011. *Morbidity and Mortality Weekly Report (MMWR), 62*(02), 1–35. Retrieved from http://www.cdc.gov/mmwr/preview/mmwrhtml/su6202a1.htm

Reynolds, C. R., & Maughan, E. D. (2015). Telehealth in the school setting: An integrative review. *The Journal of School Nursing, 31*(1), 44–53. doi:10.1177/1059840514540534

Rogers, L. L. (1908). Some phases of school nursing. *American Journal of Nursing, 8*, 966–974.

Russell, K. R., & Hartung, S. Q. (2016). Identifying the signs of self-harm in students. *NASN School Nurse, 31*(2), 121–124. doi:10.1177/1942602X15574776

Salmon, D. A., Moulton, L. H., Omer, S. B., Chace, L. M., Klassen, A., Talbien, P., et al. (2004). Knowledge attitudes and beliefs of school nurses and personnel and association with nonmedical immunization exemptions. *Pediatrics, 113,* e552–e559. doi:10.1377/hlthaff.2015.1172. PubMed.

School-based Health Alliance. (2015). *2013–14 Digital census report.* Retrieved from http://censusreport.sbh4all.org/#adolescentcare

Substance Abuse and Mental Health Service Administration (SAMHSA). (2016). *Screening, Brief Intervention, and Referral to Treatment (SBIRT) [web-page].* Retrieved from http://www.samhsa.gov/sbirt

Sypneiwski, R. (2016). Motivational interviewing. *NASN School Nurse, 31*(1), 40–44. doi:10.1177/1942602X15576777

Telljohann, S. K., Dake, J. A., & Price, J. H. (2004). Effect of fulltime versus part-time school nurses on attendance of elementary students with asthma. *Journal of School Nursing, 20,* 331–334. doi:10.1177/10598405040200060701

U.S. Census Bureau. (2013). *Age and sex composition in the United State: 2012* [table 1]. Retrieved from http://www.census.gov/population/age/data/2012comp.html

U.S. Department of Health and Human Services, Health Resources and Services Administration. (2013). *The U.S. nursing workforce: Trends in supply and education.* http://bhpr.hrsa.gov/healthworkforce/reports/nursingworkforce/nursingworkforcefullreport.pdf

U.S. Department of Health and Human Services, Office of Disease Prevention and Health Promotion. (2016). *Healthy People 2020—Adolescent health*. Washington, D.C.: Author. https://www.healthypeople.gov/2020/topics-objectives/topic/Adolescent-Health

Vessey, J. A., & O'Neill, K. M. (2011). Helping students with disabilities better address teasing and bullying situations: A MASNRN study. *Journal of School Nursing, 27*(2), 139–148. doi:10.1177/1059840510386490

Wang, L. Y, Vernon-Smiley, M., Gapinski, M. A., Desisto, M., Maughan, E., & Sheetz, A. (2014). Cost-benefit study of school nursing services. *Journal of the America Medical Association (JAMA) Pediatrics, 168*(7), 642–648. doi:10.1001/jamapediatrics.2013.5441

Winland, J., & Shannon, A. (2004). School staff's satisfaction with school health services. *Journal of School Nursing, 20*(2), 101–106. doi:10.1177/10598405040200020801

Woodfill, M. M. (1986). *The role of the nurse in the school setting: An historical view as reflected in the literature from 1902 through 1982* (dissertation). Columbus, OH: Ohio State University.

Wysocki, R. (2015). Social media for school nurses: Promoting school health in the 21st century. *NASN School Nurse, 30*(3), 180–188. doi:10.1177/1942602X15578286

Yeo, M., & Sawyer, S. (2005). ABC of adolescence: Chronic illness and disability. *BMJ, 330*, 721–723. doi:10.1136/bmj.330.7493.721

Index

Note: Page numbers followed by *b*, *f*, and *t*, refer to boxes, figures, and tables, respectively

A.L. Cherry et al. (eds.), *International Handbook on Adolescent Health and Development*,
DOI 10.1007/978-3-319-40743-2

J

K

L