Chapter 3
Resilience in Children Recovering From Trauma

Gail Hornor

Introduction

Trauma and Stress

The National Child Traumatic Stress Network (NCTSN, 2018) defines a traumatic event as a frightening, dangerous, or violent event perceived as posing a threat to a child's life of bodily security. Witnessing an event that threatens the life or physical integrity of a loved one can also be traumatic. Children, especially young children, are dependent upon their caregivers for survival, and witnessing trauma to a caregiver can be as triggering to the child as experiencing trauma themselves (NCTSN, 2020). Trauma may be experienced as a single event or take place repeatedly over years, both of which can negatively affect the child in similar ways. Traumatic experiences are out of the range of usual human experiences and can overwhelm an individual's ability to cope and frequently result in intense emotional and physical reactions and feelings of hopelessness and terror (NCTSN, 2018). These physical and emotional reactions experienced by trauma-exposed children can persist long after the traumatic event. Traumatic events can be accidentally/naturally occurring or inflicted. Traumatic events can originate outside the family or inside the family. Exposure to childhood trauma is truly an epidemic in the United States. Approximately one out of five American children will experience an inflicted traumatic event involving interpersonal violence, such as physical abuse, sexual abuse, or witnessing domestic violence. See Table 3.1 for examples of traumatic events as discussed by researchers at the National Child Traumatic Stress Network (2017).

G. Hornor (✉) (retired)
Nationwide Children's Hospital, Columbus, OH, USA
e-mail: hornorgail@gmail.com

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Table 3.1 Traumatic experiences

Setting	Traumatic experience	Subtypes of traumatic experience
Outside the family		
	Car accident or other serious accident	
	Natural disaster	
	Life-threatening illness	
	School shooting	
	Community violence	
	Terrorism	
	Refugee	
	War	
Inside the family		
	Domestic violence/interpersonal violence	
	Sudden or violent loss of loved one	
	Child maltreatment	
		Physical abuse
		Sexual abuse
		Emotional abuse
		Neglect
		Medical child abuse
		Child sex or labor trafficking
	Familial substance use disorder	
	Military family-related stressors	
		Deployment
		Parental loss or injury

Childhood trauma exposure has tremendous potential to negatively impact a child's future health and opportunity (Houry, 2019). Exposure to trauma results in stress. Some stress is normal and may actually encourage healthy growth. However, exposure to childhood traumas included in Table 3.1 can result in stress that becomes toxic, chronic, and/or unpredictable, and changes can occur to the developing brain and body (Kalmakis & Chandler, 2014).

Although nearly every child experiences some form of trauma (Hornor et al., 2019), not all traumatic events are equal in the stress resulting from that experience (Lancaster et al., 2014). Thus, screening and evaluation of the trauma and impact of traumatic events are important (National Center for Trauma-Informed Care, 2014). There are basically three levels of stress response. Brief exposures to stress with opportunities to return to baseline can be positive and yield growth (Cicchetti & Rogosch, 2009). Such exposures can help to prepare the child for stress exposure later in life. Neurobiologically, this type of exposure results in a mild elevation of stress hormones, and children learn to self- regulate (Hornor, 2017). The presence of a supportive caregiver facilitates the processing of such stress exposure in a manner resulting in positive growth for the child. Tolerable stress is serious but

temporary. Although stress hormone levels are elevated, buffering from genetics such as high cognitive ability or personality characteristics and supportive relationships aides in recovery for the child. Then there is toxic stress – ongoing, unpredictable stress over a long period of time (Hornor, 2015). Toxic stress results in chronic activation of the stress response yielding consistently high levels of stress hormones. In the absence of protective relationships and protective genetics, lifelong physical and psychological consequences can occur to the child. Toxic stress can harm the nervous, endocrine, and immune systems; alter brain structure and brain messaging systems impacting other body organs; and can change the physical structure of DNA (Houry, 2019). These brain changes can affect a multitude of functions such as attention, impulse control, decision-making, learning, emotional regulation, and responses to future stress (DeBellis, 2001; DeBellis & Zisk, 2014; Edwards et al., 2005).

The landmark Adverse Childhood Experiences (ACE) study, first published in 1998 (Felitti et al., 1998), solidified our understanding of the link between childhood trauma exposure and negative adult physical and psychological health consequences. More than 18,000 adult members of the Kaiser Permanente Health plan were surveyed regarding their childhood experiences, adult health behaviors, and adult health. The landmark ACE study (Felitti et al., 1998) divided adverse child experiences into the four levels presented in Table 3.2.

Exposure to ACEs was common within the study population with more than two-thirds (67.3%) reporting exposure to at least one ACE (Dong et al., 2004). If an individual reported one ACE, the likelihood of them reporting another was 2 to 18 times higher than those reporting no ACEs (Dong et al., 2004). Exposure to multiple traumas was very common within the ACE study population. Nearly all participants reporting one ACE (86.5%) also reported exposure to an additional ACE, and 52% reported at least three additional ACEs (Dong et al., 2004). Participants reporting exposure to one ACE were at a slightly increased risk for negative adult health behaviors and adult health consequences. Participants reporting at least three ACEs were at significant increased risk for negative adult health behaviors and adult health, both physical and psychological. The ACE study (Felitti et al., 1998) solidified our knowledge that exposure to trauma in childhood can result in lifelong negative life consequences in a graded, dose-response fashion (Traub & Boynton-Jarrett, 2017).

More recent studies have explored potential traumatic results from other childhood exposures. Afifi et al. (2017) analyzed data from Wave II from the CDC-Kaiser ACE study. Over 8000 ($N = 8316$) adults were queried regarding the original ACE study questions (Table 3.2) and experiencing spanking as a child. More than half (54.8%) of study participants reported being spanked. Spanking was found to be highly correlated to physical and emotional abuse, and spanking was associated with an increased likelihood of suicide attempts, moderate to heavy alcohol use, and street drug use. Afifi et al. (2017) concluded that spanking should be considered an ACE.

Table 3.2 Adverse childhood experiences

Experience levels	Adverse experience	Subtypes of adverse experience
Child experiences		
	Maltreatment	
		Sexual abuse
		Physical abuse
		Emotional abuse
		Neglect
	Exposure to domestic violence	
	Household drug and alcohol concerns	
	Domestic violence/interpersonal violence	
	Household mental illness	
	Parental separation/divorce	
	Criminal behavior of a household member	
Adult health behaviors		
	Diet	
	Exercise Tobacco use	
	Alcohol use	
	Substance use	
Adult health		
	Physical	Heart disease Lung disease Liver disease
		Stroke
		Diabetes
		Cancer
		Early death
	Mental health	
		Substance use Suicidal ideation/suicide
		Depression/anxiety
		Personality disorders

Resilience

Pathology resulting from trauma exposure and toxic stress is not universal – some children appear to be more resilient than others experiencing similar or even apparently more severe traumas. Resilience, at its' essence, is an interactive concept to describe the combination of serious risk experiences and a relatively positive psychological outcome despite those experiences (Rutter, 2006). Greenberg (2006)

defines resiliency as protective or positive processes that decrease maladaptive outcomes under conditions of risk. Three broad categories of protective factors have been identified in the literature: individual (temperament and intelligence/cognitive ability), the quality of a child's relationships, and broader environmental factors (safe neighborhoods, quality schools, and regulatory activities (Greenberg, 2006).

In recent years research exploring the genetics and biology of resilience has exploded. A basic understanding of epigenetics is necessary to fully understand the concept of resilience. Epigenetics is the study of heritable, but modifiable, changes in gene expression that do not involve changes to the underlying DNA sequence (Gershon & High, 2015). Epigenetics explain how the human body has learned to adapt itself to its environment (Hornor, 2017). These changes have occurred over generations as a part of natural selection; however, changes can occur during the lifetime of an individual to maximize survival. Epigenetic mechanisms, such as DNA methylation and histone modifications, can change gene expressions, preparing the individual for future responses to environmental challenges (Hornor, 2017). Epigenetics offer an individual a means of adaptation, resilience, and survival, but sometimes epigenetic changes can have slow and devastating consequences. Trauma can trigger both adaptive and devastating epigenetic changes; however, it is important to remember that these changes are reversible.

Resilience research has been enhanced by the ability to study measured genes (G) and measured environment E and their interactions (G x E) (Sapienza & Masten, 2011). Genes have been identified that appear to convey risk or vulnerability, improving the ability to study genetic and environmental mitigating factors. Children with risk or vulnerability genes may also have other genes or experiences that can mitigate risk. Brody et al. (2009) in a ground-breaking test of a G x E hypothesis in a randomized prevention study showed a protective effect of the Strong African-American Families intervention. In this study young people with known environmental risk factors (exposures to psychosocial traumas) and identified as being at genetic risk for depression and risky behaviors were randomized into the intervention group (receiving the intervention) and control group (not receiving the intervention). Young people in the intervention group with similar environmental and genetic risk to those who did not receive the intervention were less likely to develop internalizing and externalizing behaviors (Brody et al., 2009). Understanding the biology of resilience and risk as well as the neural plasticity for resilience allows for studies to promote resilience by targeting a group with genetic risk markers and attempting to cause a protective G x E effect (Sapienza & Masten, 2011). There is evidence to suggest that the genetic polymorphisms that are associated with vulnerability to negative life events may also be associated with greater responsivity to positive events/environments brought about by therapeutic interventions due to neural plasticity (Rutter, 2013).

Individual and environmental factors contribute to resilience in terms of vulnerability factors, risk factors, and protective factors. See Table 3.3.

Vulnerability is the inability to withstand the effects of a hostile environment (Skala & Bruckner, 2014). Vulnerability factors render a child less resistant to trauma and increased risk of developing psychological or physical symptomology.

Table 3.3 Vulnerability factors, risk factors, and protective factors

Vulnerability factors	Risk factors	Protective factors
Neuropsychological deficit Psychopathological factors Genetic factors Chronic disease Difficult temperament characteristics Unsure obligation organization Low cognitive abilities Low abilities to self-regulate tension and relaxation	Chronic poverty Adverse residential environment Chronic familial disharmony Parental divorce Frequently alternating partner of at least one parent Parental unemployment Parental substance abuse Parental mental illness Criminal parent Homelessness Low education level of parents Absence of one or both parents Teenage parents Frequent relocation or change of school Immigrant Familial social isolation Adoption, foster family Loss of sibling or close friend	Stable emotional attachment to one parent or another adult Flexible and little impulsive temperament Realistic perspective of future Psychological hardiness Self-esteem and social skills Sense of hope Respect and esteem for others Sense of control over life Support people (in and out of family – Teachers) Higher cognitive ability Good peer relationships Hobbies and creative pursuits Supportive community Positive school climate

Note. The factors in Table 3.3 represent factors discussed by Rutter (2013), Skala and Bruckner (2014), and the Centers for Disease Control (CDC, 2014)

Vulnerability factors can be primary (present at birth) or secondary (which develop during interaction with the environment; *see* Table 3.3). Examples of secondary vulnerability factors include chronic diseases or neurologic sequelae from accident or disease. A risk factor is an attribute that increases the probability of psycho- or physical pathology. Risk factors do not cause pathology; rather they increase the probability of an individual developing pathology. However, protective factors are individual, family, or community characteristics that mitigate stressful life events (trauma) and help individuals deal more effectively with traumatic life events (CDC, 2014).

Research into factors associated with resilience continues to evolve. Yule et al. (2019) in a meta-analysis of resilience in children exposed to violence (child maltreatment, domestic violence, and community violence) found certain factors at the individual, family, school/peer, and community level to be protective across all three levels of violence exposure. The individual factor most strongly associated with resilience was that of self-regulation followed by a positive self-perception and cognitive ability. Self-regulation, the ability to manage one's own emotions, impulses, and behavior, is conducive to the mastery of key developmental tasks that lead to competence in social, emotional, and academic functioning, thus nurturing resilience (Russell et al., 2016). Warm and caring relationships with parents, other

family members, teachers, and peers were also found to be a critical protective factor for children exposed to violence. These findings underscore the potential for teachers and peers to foster resilience, crucial for children whose parents and other family members are unable to be supportive or nurturant (Grych et al., 2015; Yule et al., 2019). Protective community factors include involvement in a religious organization, community cohesion, and extra-curricular activities outside of school. There are risk factors that appear to increase risk for psychopathology in children exposed to diverse forms of violence (Hamby & Grych, 2013), and at the same time there appear to also be common protective factors at play as well (Yule et al., 2019).

McLaughlin and Lambert (2017) examined protective factors in children exposed to domestic violence (DV). Exposure to DV is common in childhood. It is estimated that one in four children witness DV during childhood (Finkelhor et al., 2015). Childhood exposure to DV has been linked to a variety of negative consequences affecting both psychological and physical health (Bogat et al., 2006; Evans et al., 2008; Holt et al., 2008; Howell et al., 2016). Despite this risk, many children exposed to DV demonstrate resilience (Graham-Bermann et al., 2009; Howell, 2011). Caregiver support, especially maternal, was found to promote resilience by buffering threat processing after a traumatic event (McLaughlin & Lambert, 2017). Although DV complicates parenting, certain maternal parenting strategies have been found to enhance resilience in children exposed to DV (Fogarty et al., 2019). These maternal strategies include role monitoring, stable and consistent parenting, and talking to children about healthy relationships (Fogarty et al., 2019). Children who demonstrate higher sensitivity to positive and rewarding stimuli at both the neural and behavioral levels also appear to be more resilient against the development of trauma-related psychopathology (McLaughlin & Lambert, 2017). Although the exact mechanism of this protective effect remains unknown, high ventral striatum reactivity to reward is thought to be associated (McLaughlin & Lambert, 2017). Mature prefrontal-amygdala circuitry, a marker for mature emotional regulation, has also been found to be a buffer against the onset of psychopathology in trauma-exposed children.

Lavore et al. (2016) conducted a meta-analysis to determine the influence of protective and vulnerability factors on the physical health of trauma-exposed children. Protective factors were found to have a stronger influence upon resilience than vulnerability factors. These results suggest that the focus of professional intervention for trauma-exposed children should focus on enhancing protective factors rather than a deficit-focused model. A strengths-based approach may foster greater resiliency than a harms-reduction approach.

Evidence-Based Interventions

Resilience building is critical for trauma-exposed children. Resilience is not a stagnant concept but rather something that is dynamic and responsive to intervention. Promoting resilience is a complex problem that involves interventions at both the

macro- and micro-levels (Greenberg, 2006). Macro-level interventions provide the framework for micro-level interventions aimed at the community, family, and individual (Oral et al., 2016). The focus of macro-level interventions occurs at the level of economic and social policy to create community environments, attitudes, and behaviors that are safe, supportive, and healthy (Hornor, 2017). Macro-level interventions aim to strengthen resilience within the entire population by focusing on the primary prevention of childhood trauma exposure while maximizing community strengths. These interventions are targeted at the population level and will have the broadest individual and societal impact (Oral et al., 2016). Examples of resilience promotion at the societal level include legislation and policy aimed at reducing resource disparity such as raising the minimum wage, improving the universal affordability of higher education, and improving access to mental health services.

The child advocacy center (CAC) movement is an example of intervention at multiple levels, macro- and micro-level, that has resulted in resilience building (Hornor, 2008). Legislation and funding at the federal level have resulted in state and community development of CACs aimed at improving the multidisciplinary assessment of children for concerns of child maltreatment, thus decreasing the trauma of the investigative process and facilitating the linkage of abused children and their families with resources to promote healing and resilience (Hornor, 2017). CACs promote resilience-building interventions at the community, family, and individual levels.

The integration of trauma-informed care (TIC) into systems providing care for children and families is another example of multi-level intervention to address trauma exposure. Legislation and funding at the national level have allowed for micro-level intervention. Professionals working with children and families, including healthcare providers, counselors, social workers, psychologists, and child protective services workers, can promote resilience in trauma-exposed children and families by ensuring that concepts of trauma-informed care are consistently reflected within their organizations as well as within their individual practice behaviors (Hornor et al., 2019). TIC aims to decrease the impact of emotional and psychological trauma on all participants within a system of care (Weiss et al., 2017). TIC requires a comprehensive multi-level approach that changes the way organizations and individual practitioners view and approach trauma (Oral et al., 2016). Four essential elements of TIC are realizing the significant impact of trauma; recognizing how trauma may affect children, families, and staff; applying TIC knowledge into practice; and preventing re-traumatization (Substance Abuse & Mental Health Services Administration, 2015). Implementation of an effective TIC model of care within a system requires a tiered approach including universal, targeted, and specialty levels. See Table 3.4 for an example of a pediatric healthcare trauma-informed model of care at the three tiers, with examples for action/intervention.

TIC involves the universal screening of child and caregivers regarding potential trauma exposure. A psychosocial history can be gathered by asking parents/caregivers questions to better determine not only trauma exposure but also familial strengths. See Table 3.5 for an example of questions adapted from Hornor (2017) to

Table 3.4 Pediatric healthcare trauma-informed model of care: tiers with a comparison of usual care and trauma-informed suggestions for action/intervention

Tiers	Usual care	Trauma-informed care	Suggestions for action/ intervention
Universal	Medical and surgical history	Screening for trauma exposure	Psychosocial history Safe environment for every child Adverse childhood experiences
Targeted	Referral to counseling for behavioral concerns	Referral to trauma-focused mental health therapy	Trauma-focused cognitive behavioral therapy Eye movement desensitization & reprocessing
Specialized	Counseling and medications	Targeted intervention plus specific familial interventions to address trauma noted in screening (parental drug/alcohol; domestic violence)	Case management services to insure follow-through with recommendations Referral to child protective services when concern for child maltreatment arises

Note. Information in Table 3.4 is adapted from Sperlich et al. (2017)

ask to obtain a thorough psychosocial assessment and references to validated screening tools for assessing child and family trauma exposure.

TIC involves targeted interventions to address trauma symptoms in children coupled with specialized interventions to address specific familial traumas noted in screening such as domestic violence, parental drug/alcohol concerns, or parental mental health concerns. TIC care builds resilience at the community, family, and individual levels.

Micro-level resilience-building interventions attempt to improve the culture, attitudes, and relations in communities, schools, peer groups, and families by building communication skills and values that encourage positive development processes, such as parenting classes, anti-bullying policies and programs, and drug education programs (Greenberg, 2006). Such interventions often focus on strengthening children's relationships with parents, siblings, other relatives, and peers. Healthy relationships build resilience (Oral et al., 2016). Evidence-based programs that have shown to positively affect the parent-child relationship while reducing trauma-exposure, especially child maltreatment, include Circle of Security (Cassidy et al., 2011), Incredible Years (Webster-Stratton & McCoy, 2015), and Nurse Family Partnership (Jack et al., 2015). Interventions strengthening communities in which children live also promote resilience, for example, community programs that focus on violence reduction in at-risk neighborhoods and increased access to food pantries, homeless shelters, and domestic violence shelters.

Individual-level interventions are crucial; attributes inside the individual may be able to be molded to promote resilience. Identifying individual strengths and interests and encouraging/supporting them build resilience. Participation in academics, athletics, the arts, or other activities that children are passionate about and excel in

Table 3.5 Psychosocial assessment questions and validated screening tools for assessing trauma exposure

Area	Sub-area
Family tree	Parents' names and ages Names and ages of siblings Living arrangement of child
Parental employment/financial stressors	
Parental drug/alcohol concerns	
Parental diagnoses	Cognitive delay Anxiety Depression Other diagnosis Psychiatric medications or admissions
Interpersonal violence	
Mother/father/family	Sexual abuse as a child Physical abuse as a child Child protective services involvement as a child
Involvement with child protective services	Past or current involvement
Involvement with law enforcement	Past or current involvement
Support systems	
Strengths	
Validated screening tools for assessment of trauma in children and families Safe Environment for Every Kid https://seekwellbeing.org/seek-materials/	
Adverse Childhood Experiences https://www.ncjfcj.org/sites/default/files/Finding%20Your%20ACE%20Score.pdf	
Child and Adolescent Trauma Screen https://depts.washington.edu/hcsats/CBT/Assessment/Child%20and%20Adolescent%20Trauma%20Screen%20(CATS)%20Youth-Self%20Report%20(7-17%20years).pdf	
Domestic Violence Screening http://www.domesticviolence.nsw.gov.au/__data/assets/file/0020/301178/DVSAT.pdf	

can give them a sense of accomplishment and confidence (Hornor, 2017). Peer relationships are also strengthened by these pursuits which also supports resilience growth. Table 3.6 presents ideas for building skills that foster resilience in children which were adapted from Block (2016).

Mindfulness is an evidence-based intervention that builds resilience at the individual level. Mindfulness can be used as a healthy coping mechanism to build self-regulation and resiliency in children and adolescents (Iacona & Johnson, 2018; Leventhal et al., 2016). Numerous studies have proven the effectiveness of the use of mindfulness programs and modalities in managing trauma triggers, providing resilience, and improving emotional regulation for children and adolescents (Allen

Table 3.6 Skills that build resilience

Skill	Intervention
Confidence that they can handle a situation	Focus on individual strengths Academic Athletic Arts Personality
Confidence in their own abilities	Honest praise Point out skills
Connection	Parents Siblings Family Other adults Faith/spiritual community School Peers
Morals and values	Understanding how their behavior affects others
Contribution	Work as a team Service to others
Coping	Ability to make sound decisions
Planning	Working through a process to reach a goal

et al., 2012; Frewen et al., 2015; Ortiz & Sibinga, 2017). Mindfulness involves the use of a present-focused, non-judgmental awareness in life (Ortiz & Sibinga, 2017). Although all individuals have the capacity for mindfulness (non-reactivity, awareness, focus, attention, and non-judgment), variability exists in the amount and quality of mindfulness among individuals. Mindfulness has been found to aide trauma-exposed individuals (Ortiz & Sibinga, 2017) by negating the acute response to trauma and stress while inhibiting underlying consequences of toxic stress such as psychiatric, metabolic, and cardiovascular disease by influencing health behaviors, underlying biochemistry, and neurobiology. Studies indicate that mindfulness may mitigate mental health symptoms and behaviors, improve quality of life, decrease somatic symptoms, and improve coping in children and adolescents, especially those who have been trauma-exposed. Studies suggest multiple benefits resulting from mindfulness programs for children and adolescents: decreased anxiety (Jee et al., 2015; Sibinga et al., 2013); decreased rumination (Sibinga et al., 2013); flatter cortisol curve (Jee et al., 2015; Sibinga et al., 2013); less somatization (Biegel et al., 2009; Sibinga et al., 2016); decreased depression (Kuyken et al., 2013; Sibinga et al., 2016); improved social gains (Jee et al., 2015); decreased hostility (Biegel et al., 2009; Sibinga et al., 2014); decreased suicidal ideation and self-harm (Britton et al., 2014); improved conflict avoidance (Sibinga et al., 2014); improved attention (van de Weijer-Bergsma et al., 2012); and greater well-being (Kuyken et al., 2013).

Mindfulness training can be unstandardized and offered in formats such as educational sessions, art therapy, group therapy, yoga, or other mind-body interventions (Ortiz & Sibinga, 2017; Leventhal et al., 2016). Yoga programs in schools have been

Table 3.7 Examples of evidence-based mindfulness programs for children

Program	Website
Inner Resilience Program	http://www.innerresilience-tides.center.org/
Mindful Schools	http://www.mindfulschools.org
Learning to Breathe	http://www.learning2breathe.org
Mindfulness in Schools Project	http://www.mindfulneeinschools.org
Still Quiet Place	http://www.stillquietplace.com
Stressed Teens	http://www.stressedteens.com
Wellness Works in Schools	http://www.wellnessworksinschools.com/
Center for Mindful Awareness	http://www.centerformindfulawareness.org

Note. Source: Ortiz and Sibinga (2017)

found to have benefit in developing resiliency skills (Brodie et al., 2018). Yoga has been found to improve self-regulation, mindfulness, stress reduction, self-esteem, and other aspects of emotional well-being (Wang & Hagins, 2016). Mindfulness programing can also be structured and standardized with evidence-based efficacy. Table 3.7 provides guidance on mindfulness-based interventions for youth.

Mindfulness is a safe, economical, and effective modality that can be used as an adjunct to therapy to build resiliency and emotional regulation in trauma-exposed children.

Cognitive behavior therapy (CBT) is well-established as a treatment for child trauma-related psychopathology (McLaughlin & Lambert, 2017). CBT for trauma-exposed children targets social information processing biases with cognitive coping techniques, emotional learning, emotional reactivity with relaxation training, and emotion regulation affective modulation skills. Parents are also included in CBT treatment with the aim of improving parenting skills and enhancing the parent-child relationship. A crucial new direction for future research into the efficacy of CBT is to determine whether the intervention techniques targeting threat processing and caregiver support can prevent the onset of symptoms in trauma-exposed children, thus providing resiliency against post-traumatic stress disorder and anxiety (McLaughlin & Lambert, 2017).

School provides an excellent environment to promote resilience in trauma-exposed children. However, time spent in school is not always positive. Trauma-exposed children are at risk for a negative school experience (Brodie et al., 2018). Additionally, school misbehavior is often punished by out-of-school suspensions, with 7% of public school students receiving a suspension in the 2011–2012 school year (US Department of Education for Civil Rights, 2014). The American Academy of Pediatrics (2013) recommends schools identify at-risk children early and ensure supports and make referrals to mental health and social service agencies as well as involving parents and healthcare providers. A modification of the student's school environment or educational program is often needed to best support the trauma-exposed child's educational needs. Pediatric providers of all disciplines should advocate for supportive school environments for students at the local level (Brodie et al., 2018). Advocacy fosters resilience by reducing the negative effects of

Table 3.8 Examples of evidence-based, school-based self-regulation interventions

Author	Intervention	Website
	Tools of The Mind	https://toolsofthemind.org/ and https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_toolsofmind_091608.pdf
	Student Success Skills Program	https://studentsuccessskills.com/our-evidence-based-curriculums/student-success-skills-classroom-manual/ and https://studentsuccessskills.com/research/
Flook et al. (2015)	Kindness Curriculum	https://centerhealthyminds.org/join-the-movement/lessons-from-creating-a-kindness-curriculum
Feinberg et al. (2013)	Siblings are Special	https://hhd.psu.edu/hdfs/siblings-are-special-program
O'Connor et al. (2014)	INSIGHTS	https://psycnet.apa.org/record/2014-14386-001

suspensions and expulsions on the student, school, and community. Pandey et al. (2018) conducted a meta-analysis examining self-regulation interventions in children aged 2–17 years, many of which took place in a school setting. The ability to self-regulate one's emotions is key to resilience in trauma-exposed children. Over three fourths (76%) of the included curriculum-based interventions improved self-regulation, and nearly half were found to also enhance long-term effects, such as academic achievement, decreased substance use, and positive social or behavioral indicators. Table 3.8 provides examples of school-based interventions to promote self-regulation in children.

Ungar (2013) discusses the importance of effective social service intervention in facilitating resilience in children who have experienced child maltreatment or other forms of trauma. Trauma-exposed children often receive interventions by multiple service providers including child welfare, special education, mental health, addictions, healthcare, and juvenile justice. Ungar (2013) suggests that the resilience of trauma-exposed children can be enhanced by the inclusion of three elements into the design and implementation of targeted interventions: improve the availability and accessibility of social supports and formal services; design programs with flexibility to enable the ability to respond to the differential impact specific types of interventions have on children who have experienced different forms of trauma; and design interventions that are more focused on subpopulations of children who have experienced trauma rather that diffuse population-wide initiatives.

Another example of macro-level legislation and policy mandating a micro-level practice intervention is that of mandatory reporting of child maltreatment which is required by a variety of professionals working with children and adolescents. Wekerle (2013) discussed the concept of mandated reporting of child maltreatment in terms of resilience building for children and families. The United Nation's Convention on the Rights of the Child states that children have the right to be protected from violence (United Nations Human Rights Office of the High Commissioner, 1989). Nearly every country, including the United States, has

enacted legislation protecting children from violence in the form of child maltreatment. Children and adolescents are dependent upon adults for safety and survival. Children and adolescents are not developmentally capable of separating themselves from harmful situations; they must be protected from violence. Child victims of all forms of child maltreatment are at risk to experience a variety of short- and long-term negative consequences (Wekerle, 2013). Mandatory reporting of child maltreatment is not, as yet, considered an evidence-based intervention promoting resilience in maltreatment children; however, Wekerle (2013) argues that mandatory reporting does indeed build resilience in trauma-exposed children. Mandatory reporting laws reinforce the wrong of the act against the child and the right of the child. Laws requiring mandatory reporting of child maltreatment, a major source of childhood trauma exposure, are designed to prevent the child from ongoing/additional abuse while linking the child with effective interventions to decrease sequelae. Reporting laws may promote resilience by official acknowledgment of the wrong of the abuse to the child, the perpetrator of the abuse, and the non-offending caregiver; protection from violence, protecting the index child from re-victimization and other children, including siblings, from abuse; and the opportunity to provide interventions to children and families to address not only the abuse but also other identified familial psychosocial risk factors such as domestic violence, parental mental health concerns, etc. (Wekerle, 2013). Additional research is needed to identify mandatory reporting of child maltreatment as an evidence-based intervention promoting resilience in victims of child maltreatment.

Nurturing Positivity and Well-Being in Children

Ideas for Promoting Resilience of Families

It is difficult to separate interventions that stimulate resilience in children from those that stimulate familial resilience; both are intricately inter-woven. Interventions promoting familial resilience also promote the resilience of children and vice versa. The normal development of children can be negatively impacted by exposure to trauma, including poverty, domestic violence, child maltreatment, and harsh or inconsistent parenting (Felitti et al., 1998; Moffitt & Klaus-Grawe Think Tank, 2013). Fundamental to preventing trauma exposure in children is creating safe, stable, nurturing relationships and environments for all children and families (Merrick et al., 2019). The CDC's (2019) comprehensive approach to preventing trauma exposure in children and strengthening families includes promoting social norms that protect against violence and adversity (education campaigns to encourage positive parenting) and intervention to lessen the impact of trauma exposure by screening, referral, and support.

Parenting is the most important modifiable influence upon a child's mental and physical health, general well-being, and life course pathway (Sanders &

Mazzucchelli, 2018). Parenting impacts many aspects of child development including cognition, emotional regulation, language, social skills, personal values, and academic achievement (Center on the Developing Child at Harvard University, 2016). Improving parenting skills can enhance the development and well-being of all children and promote resilience in trauma-exposed children while strengthening the parent-child relationship (Sander et al., 2020; Turner et al., 2020).

The Triple-P Positive Parenting Program is an evidence-based preventively oriented multilevel system of parenting support. Positive parenting is defined as the continual relationship of a parent (s) and a child that includes caring, teaching, leading, communicating, and providing for the needs of a child consistently and unconditionally (Seay et al., 2014). The Triple-P Program was developed with the goal to improve the population-level reach and impact of parenting interventions. Triple-P aims to prevent and treat social, emotional, and behavioral problems in children by enhancing the knowledge, skills, and confidence of parents (Sanders, 2012). The core positive parenting practices of this program are ensuring a safe and engaging environment; creating a positive learning environment; using consistent, nonviolent discipline; having realistic expectations; and taking care of oneself as a parent (Sanders, 2012).

Triple-P incorporates five levels of intervention on a tiered continuum of increasing strength and narrowing population reach for parents of children from birth to age 16 (Sanders et al., 2014). Triple-P includes both universal and targeted interventions which have been developed to meet the varying needs of parents within a comprehensive system of supports to parents. The levels differ in intensity, contact with practitioners, and delivery method. Level 1 involves using the media and positive communication strategies to promote positive parenting. Level 2 involves brief interventions of approximately one to three sessions to teach positive parenting skills, while level 3 contains three to four sessions. Level 4 includes eight to ten sessions, and the sessions can be individualized or in groups and may be delivered in a workbook format. Level 5 interventions are "enhanced" and encompass level 4 services and possible adjunct individual or group sessions to address additional problems (Sanders et al., 2014).

Universal (level 1) interventions can be easily incorporated into a variety of settings where children receive care including healthcare, daycare, and schools. Parents often look to professionals working with their children for advice and guidance (Taylor et al., 2017). Providing education, modeling, and encouragement of positive parenting practices can aid parents in improving their parenting skills. Professionals working with children can also enhance access to more targeted interventions (levels 2–5) to address identified parenting concerns. Triple-P is an evidence-based intervention that has been proven to improve social, emotional, and behavioral outcomes for children while enhancing parenting practices and confidence (Sanders et al., 2014).

It is critical that clinicians working with children possess knowledge regarding interventions that promote resilience of the family. Family resilience can be defined as the functioning of the family system when dealing with adversity (Walsh, 2016). True resilience is more than coping or surviving trauma; rather it involves positive

adaptation, finding the ability to thrive, with resulting personal and relational change and positive growth forged through the experience of recovery. Fundamental to the concept of family resilience is that serious traumatic events and chronic adverse life experiences affect the entire family, their relationships, and the family unit (Walsh, 2016). At the core of family systems, research is an exploration of effective family functioning in dealing with adverse conditions. Familial strengths and vulnerabilities must be assessed and addressed in relation to a family's trauma exposure (Walsh, 2016).

It is crucial that professionals working with children and families, especially those exposed to trauma, assess for parental and child exposure to adverse childhood experiences (trauma) as well as individual and familial strengths and support systems. See Tables 3.5 and 3.6 for examples of psychosocial assessment tools and trauma screens. The American Academy of Pediatrics (AAP, 2018) also supports the importance of screening for adverse childhood experiences and trauma as an essential first step in the prevention of childhood trauma exposure and strengthening families. The AAP suggests assessment tools at this website: https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/resilience/Pages/Clinical-Assessment-Tools.aspx.

The intergenerational cycle of trauma exposure requires professionals working with children to undergo a paradigm shift in service provision (Dube, 2018). Healing and recovery in adult survivors of trauma (parents and other caregivers) are a crucial step to the primary and secondary prevention of trauma exposures in children (Dube & Rishi, 2017). Trauma-informed care recognizes the importance of screening for trauma exposure, followed by a more focused follow-up assessment when trauma exposure is revealed (Dube, 2018). A key clinical intervention is to provide child/family education and targeted anticipatory guidance regarding the identified trauma exposure (Gilgoff et al., 2020). Anticipatory guidance has been shown to have positive outcomes in improving child and family functioning in a variety of ways including parent-child interactions (Hsu et al., 2018) and violence prevention (Sege et al., 2006). Anticipatory guidance should always be developmentally appropriate, culturally sensitive with an understanding of implicit bias. Anticipatory guidance involves helping children/families understand trauma and toxic stress and to be aware of what types of home, school, or other settings may be resulting in trauma exposure for the child. Possible symptoms of trauma exposure in children should be discussed including sleep disturbance, anxiety, focusing difficulties, and other behavioral indicators. Anticipatory guidance can also aid the parent/caregiver in understanding what they can do to buffer their child's stress and how to use positive parenting skills to build resilience in their child. A discussion of trauma exposure is not intended to elicit feelings of blame or shame in children or caregivers, rather insight into healing-centered and strengths-based approaches to reduce/eliminate trauma exposure while promoting resilience in children and families. Clinicians must have knowledge of local, accessible evidence-based interventions to provide children and families to address identified trauma exposures. Working with children and families to ensure that the trauma exposure needs of all family members are

addressed can do much to foster resilience in children and their families (Dube, 2018; Gilgoff et al., 2020).

Ideas for Growth in the Field

The relationship between psychosocial trauma exposure in childhood and negative lifelong physical and psychological health outcomes was solidified by the landmark ACE study (Felitti et al., 1998). While we have a beginning understanding of trauma and resilience, additional research is needed to solidify our understanding of resilience in trauma-exposed children and interventions that enhance that resilience. We are at a critical juncture to better prevent trauma exposure in children and to intervene appropriately when trauma exposure occurs.

Several strategies to expand our current knowledge have been suggested. Yule et al. (2019) suggest that further exploring protective factors most consistently linked to resilience building in children will aid in the design of interventions to better prevent or reduce the negative impact of trauma exposure on children. Current research suggests the importance of loving caregiving and strong family relationships in both the prevention of trauma exposure in children and the reduction of trauma exposure impact. It would be interesting to explore the impact of the institution of a widespread public service media campaign aimed at educating the public regarding principles of positive parenting emphasizing the use of consistent, nonviolent discipline upon trauma exposure in children. Previous educational campaigns touting the importance of the use of seatbelts in cars and safe sleep for infants have resulted in positive public health outcomes.

Further research is also needed to explore the impact of universal screening of children and families for trauma exposures in settings such as healthcare, mental health, and social service on trauma prevention and resilience building (Finkelhor, 2018). Dubowitz et al. (2016) emphasize the need for further research into how some children cope with adversity and factors that predict positive outcomes. This knowledge could be used to guide clinical practice and interventions (Lavore et al., 2016).

Mindfulness has demonstrated promise in preventing the negative outcomes related to childhood trauma exposure (Ortiz & Sibinga, 2017). Additional research is needed to explore the mechanisms of mindfulness along with the long-term outcomes of mindfulness interventions across the life span, from childhood to adulthood, including outcomes in subsequent generations.

Schools provide another setting for promoting resilience in children by creating healthy relationships and building individual strengths (Yule et al., 2019). Historically, schools have focused on interventions to reduce disruptive student behaviors, often via punitive discipline practices. However, in recent years schools have instituted programs to promote mental health and well-being in children and teachers via social emotional learning (SEL). SEL is at the heart of trauma-sensitive schools. Trauma-sensitive schools represent a whole-school approach that

incorporates a SEL curriculum with supports to students, families, and staff (Plumb et al., 2016). A trauma-sensitive model recognizes the significant impact trauma exposure can have on human behavior and learning and provides a multi-tiered system of intervention (Dorado et al., 2016; Kataoka et al., 2018). Primary or universal interventions are included in the model (staff education regarding trauma exposure prevalence and impact), selected or secondary interventions (skill building interventions to promote student empowerment), and also targeted or tertiary interventions (trauma-based individual, group, and family therapy). Further research is needed to evaluate the efficacy of trauma-sensitive schools.

Conclusion

Trauma exposure is a significant and prevalent problem for children and their families. It is crucial that professionals working with children and families be knowledgeable regarding trauma and resiliency as well as evidence-based interventions that prevent trauma exposure and those that promote resilience building in trauma-exposed children and families. This chapter explored several evidence-based interventions that provide promise in promoting resilience in trauma-exposed children as well as ideas for future research to increase current knowledge.

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