

SAMHSA

**Disaster Technical Assistance Center
Supplemental Research Bulletin**

**Mental Health Issues and Conditions
in Children and Youth Exposed to
Human-caused Disasters**

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SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities.

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CONTENTS

INTRODUCTION.....	3
Mass Violence Definitions.....	3
THE CURRENT CONTEXT.....	4
MENTAL HEALTH AND SUBSTANCE USE ISSUES AND CONDITIONS IN EXPOSED YOUTH.....	5
Posttraumatic Stress (PTS) and Posttraumatic Stress Disorder (PTSD) Following Human-caused Disasters.....	5
Depression.....	6
Substance Use and Misuse.....	6
Anxiety Disorders.....	7
Other Issues and Conditions.....	7
Physical Consequences and Comorbidities.....	7
RISK AND PROTECTIVE FACTORS.....	7
Non-modifiable Risk and Protective Factors.....	7
Modifiable Risk and Protective Factors	8
Impact of Indirect Exposure to Disaster.....	8
POST-DISASTER APPROACHES AND INTERVENTIONS.....	9
CONCLUSION.....	12
REFERENCES.....	12

The focus of the *Supplemental Research Bulletin* is to provide an overview of the current literature on a specific topic and make it easy to understand for disaster behavioral health professionals who are not otherwise exposed to the research. The product aims to assist professionals and paraprofessionals involved in all-hazards planning, disaster behavioral health response and recovery, and/or Crisis Counseling Assistance and Training Program grant activities.

INTRODUCTION

This issue of the *Supplemental Research Bulletin* focuses on mental health and substance use issues and conditions in children and youth after human-caused disasters, such as oil spills, radiation disasters, public health emergencies, incidents of mass violence, and terrorism. This *Supplemental Research Bulletin* follows on the September 2018 *Supplemental Research Bulletin* (<https://www.samhsa.gov/sites/default/files/srb-childrenyouth-8-22-18.pdf>), which covers the effects of natural disasters on children and youth.

Research has consistently shown that exposure to human-caused disasters in people of all ages, including children and youth, increases the chances of having a host of mental health and substance use-related consequences, including posttraumatic stress disorder, major depressive disorder (MDD), substance use disorders, and other issues and conditions (Goldmann & Galea, 2014; Comer et al., 2010). Potentially traumatic events during a human-caused disaster include exposure (direct or indirect) to death, grief, injury, pain, or loss, as well as direct exposure to threats to personal safety (Mann, Farfel, Maslow, Osahan, & Stellman, 2015). Even children and youth who are indirectly exposed to disaster-related trauma and stress may exhibit increased rates of functional impairment and various psychopathologies (Comer et al., 2010).

As discussed in the September 2018 *Supplemental Research Bulletin*, after a natural disaster, children may develop symptoms of disorders that may be short-term and not as severe as symptoms that would be necessary to fully diagnose a psychiatric disorder. These stress-related symptoms are often able to be helped with natural supports such as family, friends, and social groups. Only a small percentage of children and youth will develop mental or substance use disorders (Pfefferbaum, Jacobs, Griffin, & Houston, 2015). As with the last issue of the *Supplemental Research Bulletin*, this issue focuses on diagnosable disorders that appear in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) (American Psychiatric Association, 2013). Most children and youth do not develop full psychiatric conditions due to disaster exposure. Please refer to the Common Stress Reactions in Children and Youth section on page 5 of the previous *Supplemental Research Bulletin* (<https://www.samhsa.gov/sites/default/files/srb-childrenyouth-8-22-18.pdf>) for more about how children and youth often react to disasters.

The purpose of this publication is to shed light on the mental health and substance use- and misuse-related effects of human-caused disasters for some children and youth. In it, we also aim to highlight approaches and interventions that may be useful in supporting children and youth, and full disaster-affected communities, after human-caused disasters.

This issue of the *Supplemental Research Bulletin* is based on literature and scientific publications found through the National Center for Biotechnology Information, U.S. National Library of Medicine (PubMed), and Internet searches. All research cited in this issue was published in English, and the majority was conducted in the United States (with a few exceptions where investigations in other countries proved useful to the topic). We searched for literature on human-caused disasters such as incidents of mass violence; terrorist attacks; and chemical, biological, radiological, and nuclear disasters. We limited the literature we reviewed to studies of children who were no older than 18 years at the time of disaster exposure. We did not include literature on trauma related to living in war zones, as the ongoing exposure and associated challenges are different.

Mass Violence Definitions

One type of human-caused disaster we focus on in this issue is mass violence. Because there is no single, agreed-upon definition of an incident of mass violence or subtypes of these incidents such as mass shootings, in the research literature or elsewhere, it was important to consider how we would define these terms for the purposes of this *Supplemental Research Bulletin* (RAND Corporation, n.d.; U.S. Department of Justice [DOJ], Office of Justice

Programs [OJP], Office of Victims of Crime [OVC], 2015; Lowe & Galea, 2015; Shultz et al., 2014). DOJ's OVC defines mass violence as follows:

An intentional violent criminal act, for which a formal investigation has been opened by the Federal Bureau of Investigation (FBI) or other law enforcement agency, that results in physical, emotional, or psychological injury to a sufficiently large number of people to significantly increase the burden of victim assistance and compensation for the responding jurisdiction as determined by the OVC Director (DOJ, OJP, OVC, 2015).

Many government agencies and research efforts have focused on mass shootings in recent years and developed definitions of this type of incident. Definitions vary as to whether they specify or indicate intentionality, where incidents occur, how many people are injured and/or killed, whether victims are selected or random, how many people perpetrate the violence, and whether some types of incidents are excluded (Bjelopera, Bagalman, Caldwell, Finklea, & McCallion, 2013; Krouse & Richardson, 2015; Stanford Mass Shootings in America, courtesy of the Stanford Geospatial Center and Stanford Libraries. n.d.; Public Law 112-265, 2013).

For this *Supplemental Research Bulletin*, we adapted two mass shooting definitions to develop a definition of mass violence (Shultz et al., 2014; Stanford Mass Shootings in America, courtesy of the Stanford Geospatial Center and Stanford Libraries, n.d.). We defined an incident of mass violence as an intentional, planned event typically carried out in a public venue perpetrated by one or two people, involving the use of firearms or other devices to kill or injure one or more people. These incidents are unrelated to drugs, gangs, or organized crime.

THE CURRENT CONTEXT

In this issue, we examine the effects of all types of human-caused disasters, including nuclear disasters, oil spills, and public health emergencies, as well as incidents of mass violence. Nevertheless, it is important to address recent trends in mass violence, and mass shootings in particular. Some investigators have reported an increase in frequency of mass shootings in the United States. For example, Lowe and Galea cite a report noting an increase in such incidents over time in the United States (Blair & Martaindale, 2013; as cited in Lowe & Galea, 2015). Mass shootings in schools have been reported on extensively in the mainstream media. However, these incidents remain very rare relative to deaths by firearm in the United States. A team of researchers reports that from 1990 to 2012, 215 fatal school shooting incidents caused 363 deaths, which amounts to less than 1 percent (0.12 percent) of national firearm homicides during that period (Shultz, Cohen, Muschert, & Flores de Apodaca, 2013). Of the school shootings in the period they reviewed, only 25 of the 215 incidents fit the definition of mass violence used in this *Supplemental Research Bulletin*. The researchers conclude that “despite the high visibility and notoriety of [school shooting massacres], we have demonstrated that the numbers of incidents are few and the numbers of deaths represent a minute fraction of total firearm fatalities” (Shultz, Cohen, Muschert, & Flores de Apodaca, 2013, p. 97).

In response to these incidents, students in public K–12 schools routinely now undergo safety trainings and active shooter response drills in preparation for a possible school shooting (U.S. Government Accountability Office, 2016). In recent years, Federal Government offices and national professional associations have produced guidance for school personnel for developing emergency plans for active shooter scenarios and implementing trauma-informed drills to create safe learning environments for children (U.S. Department of Education, Office of Elementary and Secondary Education, Office of Safe and Healthy Students, 2013; National Association of School

Psychologists & National Association of School Resource Officers, 2017; National Child Traumatic Stress Network, 2018).

MENTAL HEALTH AND SUBSTANCE USE ISSUES AND CONDITIONS IN EXPOSED YOUTH

As noted, human-caused disasters can affect children and youth in many ways, from distress and symptoms of mental and substance use disorders in the short term, to ongoing issues in some over the longer term. Findings from two large-scale studies by the Substance Abuse and Mental Health Services Administration (SAMHSA) and the Centers for Disease Control and Prevention indicate that more than one-third of parents in the Louisiana and Mississippi coastal regions reported physical or mental distress in their children 3 months after the start of the Deepwater Horizon oil spill in 2010 (Gould, Teich, Pemberton, Pierannunzi, & Larson, 2015).

Posttraumatic Stress (PTS) and Posttraumatic Stress Disorder (PTSD) Following Human-caused Disasters

PTS is stress people experience after they have gone through, or seen someone else experience, a life-threatening event, such as a disaster, car accident, or sexual assault. PTS symptoms reflect this stress and fall into four categories:

- Intrusive thoughts. These may include nightmares. They may also include flashbacks, or the sense of going through the event again. Children may act out the event repeatedly in their play.
- Avoidance of reminders of the trauma. People may avoid situations or other people who remind them of the event, or they may avoid talking or thinking about the event.
- Negative changes in thoughts and feelings. People may not experience positive or loving feelings toward others. They may forget parts of the event that led to their symptoms.
- Arousal and reactivity. People may be more reactive to stimuli in their environment. They may react to sounds and smells that do not indicate danger as though they were signs of danger. They may feel keyed up or on edge, and they may experience increased anger and irritability, have trouble sleeping, and find it hard to concentrate (National Center for PTSD, 2019).

Examples of PTS symptoms in children include acting out the trauma repeatedly in play, limited play, social withdrawal, and, in adolescents, misuse of alcohol and other substances (American Psychiatric Association, 2013; American Psychiatric Association, 2017). If PTS symptoms continue for more than 1 month, the individual experiencing them may have PTSD (American Psychiatric Association, 2013). For a diagnosis of PTSD, an individual must have at least one intrusion symptom, at least one avoidance symptom, at least two symptoms related to negative changes in thinking and mood, and at least two arousal symptoms, all for more than 1 month. In children ages 6 years and younger, PTSD may be diagnosed if they have at least one intrusion symptom, at least one avoidance symptom or symptom related to negative changes in thinking and mood, and at least two arousal symptoms, also for more than 1 month (American Psychiatric Association, 2013).

PTS in children following disaster exposure has been studied extensively. Across studies, there is wide variation in prevalence estimates of PTS symptoms and PTSD among children and youth. In a paper on children's reactions to natural and human-caused disasters, the authors note that rates vary depending on the samples, the outcomes on which researchers focus, and research methodology used (Pfefferbaum, Jacobs, Griffin, & Houston, 2015).

It has been estimated that between 28 percent and 50 percent of children exposed to trauma develop PTSD (Saraiya, Garakani, & Billick, 2013). In research on children and youth exposed to terrorist attacks, the most consistently documented finding has been increased rates of symptoms of PTSD (Comer, Bry, Poznanski, & Golik, 2016). Six months after the 9/11 World Trade Center attacks, probable PTSD was identified in about 11 percent of New York City schoolchildren (Comer et al., 2010). Following the Boston Marathon bombing (2013), about 11 percent of the marathon-attending youth exhibited likely PTSD symptoms. This proportion of youth with likely PTSD was about six times higher among marathon-attending youth than non-attending youth (Comer, Dantowitz et al., 2014). In a review of studies on mass shootings, the researchers report that an estimated 30 percent to 40 percent of children and adolescents exposed to a life-threatening event such as a mass shooting will meet criteria for a PTSD diagnosis (Shultz et al., 2014).

Children and youth who develop PTS symptoms or PTSD after a human-caused disaster may be at increased risk of other mental and substance use disorders, and symptoms of these disorders, as well as physical health problems. Comer et al. report that children and adolescents who develop PTSD symptoms after a terrorist attack are at risk for a range of problems such as depression, substance misuse, suicidality, and overall reduced quality of life (2016).

Some research has highlighted elements or aspects of human-caused disasters that are associated with PTS symptoms or PTSD in children and youth. Among adolescents who had been exposed to the 9/11 World Trade Center attacks as children, researchers found that PTSD was strongly associated with direct attack exposure; of the 5.4 percent of their sample with probable PTSD, 92.3 percent reported two or more direct exposures (Mann et al., 2014). In school-age children affected by the Gulf oil spill (2010), there was a causative association between those affected by stress related to the spill and development of PTSD symptoms (Osofsky, Osofsky, Weems, Hansel, & King, 2016).

Depression

A review of recent literature concluded that prevalence of depression among youth after human-caused disasters ranges from 2 percent to 34 percent (Boer, Smit, Morren, Roorda, & Yzermans, 2009; Bolton, O’Ryan, Udwin, Boyle, & Yule, 2000; as cited in Lai, Auslander, Fitzpatrick, & Podkowirow, 2014). One study found that 6 months after the 9/11 World Trade Center terrorist attacks, about 8 percent of New York City schoolchildren were experiencing MDD (Hoven et al., 2005; as cited in Comer et al., 2010). It is important to note that this percentage is not out of the ordinary in general population samples; the DSM-5 reports that 12-month prevalence of MDD in the United States is approximately 7 percent across all age groups (American Psychiatric Association, 2013). In another study, more than half of students surveyed a year after a mass shooting reported impaired well-being, which included anxiety/depression, among other issues, such as sleep problems, PTS, and lower life satisfaction (Stene, Schultz, & Dyb, 2018).

Substance Use and Misuse

Research has found increased rates of substance use and misuse among adolescents affected by human-caused disasters. In a needs assessment following the 9/11 World Trade Center terrorist attacks, about 5.4 percent of New York City high school students reported starting smoking cigarettes or increasing use, and 10.9 percent reported increased alcoholic beverage consumption (Wu et al., 2006). Prior trauma and PTSD were associated with increased smoking, and direct exposure to the attack was significantly associated with increased alcohol consumption (Wu et al, 2006).

Anxiety Disorders

Following trauma, younger children may have separation anxiety upon leaving their parents, while older children may develop other, unrelated fears (Saraiya et al., 2013). Anxiety disorders other than PTSD were reported in 25.4 percent of a sample of children in New York City public schools 6 months after the 9/11 terrorist attacks (Comer et al., 2010). In addition, high rates of generalized anxiety were found in studies examining area youth in the aftermath of the Oklahoma City bombing (1995) and Boston Marathon bombing, and in Washington, DC, youth following the 9/11 attacks (Comer et al., 2016).

Other Issues and Conditions

After exposure to trauma associated with a human-caused disaster, some children may behave aggressively and be unable to control anger impulses, while others may struggle with lack of control or sense of hopelessness (de Jong et al., 2015; Saraiya et al., 2013). In a paper on the effects of the *Exxon Valdez* oil spill, the author reported that the disaster was linked to a decline in children's grades in school, as well as declining relations with other children in the community, increased fighting, distress upon hearing someone talk about the spill, bedwetting, and fear of being left alone (McLees-Palinkas, 1994; as cited in Palinkas, 2012).

Physical Consequences and Comorbidities

After a trauma, some children may experience physical symptoms such as frequent headaches or stomachaches or sleep problems (Saraiya et al., 2013). Researchers found sleep difficulties among children affected by the *Exxon Valdez* oil spill, in addition to the other issues described in the preceding paragraph (McLees-Palinkas, 1994; as cited in Palinkas, 2012). In a study involving more than 8,000 children in New York City public schools 6 months after the 9/11 attacks, researchers found eight patterns of comorbid psychiatric disorders involving conditions such as agoraphobia, separation anxiety, and MDD (Geronazzo-Alman et al., 2018).

RISK AND PROTECTIVE FACTORS

Children's vulnerability to stress reactions after disasters involves multiple factors such as level and dose of trauma, preexisting psychopathology, coping resources, social support, genetic factors, and socioenvironmental adversity (Carpenter et al., 2017). Current literature indicates that some parent-related variables as well as aspects of the family environment likely constitute risk or protective factors for children (Cobham, McDermott, Haslam, & Sanders, 2016). In a review of research on the effects of mass shootings on children and adolescents, researchers report that risk factors for the development of post-disaster psychological disorders include proximity to the scene of the incident, degree of exposure, emotional sensitivity, lack of expressive ability, female gender, immigrant status, and lack of perceived family and social supports (Shultz et al., 2014).

Non-modifiable Risk and Protective Factors

Children who are from an ethnic minority may be at higher risk for adjustment issues after disaster exposure, but this may relate to differences in socioeconomic status between ethnic minorities and non-ethnic minorities, as well as less access to needed resources during and after disasters, resulting in more stressful disaster experiences (Mann et al., 2015; La Greca & Silverman, 2006; as cited in Pfefferbaum et al., 2015). Lower socioeconomic status and

poverty have been linked with higher rates of psychopathology among children following an incident of terrorism (Comer et al., 2016). Youth with disabilities may also be disproportionately affected by and experience greater exposure to disasters (Stough, Ducey, & Kang, 2017).

Among children who experienced the 9/11 attacks, direct exposures consisting of injury or death of a family member were significantly associated with probable mental disorders (Mann et al., 2015). A meta-analysis found that mass-fatality disasters (in which more than 100 people lose their lives) are associated with higher PTSD levels in youth than those with fewer fatalities (Furr, Comer, Edmunds, & Kendall, 2010; as cited in La Greca et al., 2016).

Modifiable Risk and Protective Factors

Parenting and the family environment are modifiable risk factors, as it is widely supported that children's post-disaster mental health is partially affected by the disaster's impact on parents, parenting, and the family environment (Cobham et al., 2016). Children whose parents had post-disaster or current major depression 7 years after the Oklahoma City bombing (1995) were more likely to have any post-disaster psychiatric disorder than children whose parents did not have depression (Pfefferbaum, Tucker, North, Jeon-Slaughter, & Nitiéma, 2014). In addition, negative trauma-specific appraisals and encouragement of avoidance coping by parents were associated with higher child-reported PTSD. However, it is recognized that there is limited research related to parental response to trauma and the influence of this response on PTSD in children (Hiller et al., 2018). Having a parent or a relative working in law enforcement and called to participate in the manhunt following the Boston Marathon bombing was associated with higher risk of PTSD in children after the attack (Comer, Kerns et al., 2014). Children who had family members who were first responders in the 9/11 attacks had a high prevalence of probable PTSD (Duarte et al., 2006). In a survey of New York City schoolchildren in grades 4 through 12 after the 9/11 attacks, researchers found that children who reported that their parents had restricted their travel after the attacks or that someone in their family had lost his or her job as a result of the attacks were significantly more likely to have probable PTSD (Comer et al., 2010).

Impact of Indirect Exposure to Disaster

Exposure to human-caused disaster can have devastating consequences for children and youth. Although not as apparent, indirect exposure (exposure to disasters through television, radio, or social media, or parents' discussions) also can have lasting effects. One study found that 20 percent of youth living 100 miles from the Oklahoma City bombing attack reported dysfunction related to the attack, including symptoms of PTSD, presumably owing to indirect exposure (Pfefferbaum et al., 2010; as cited in Garbarino, Governale, Henry, & Nesi, 2015). Other studies have reported that indirect exposure to disasters such as the 9/11 attacks through media images or indirect post-attack life disruptions could lead to the development of PTSD or anxiety symptoms in children (Comer, Dantowitz et al., 2014; Saraiya et al., 2013). In addition, the amount of television viewing after the 9/11 attacks was linked to an increase in PTSD symptoms among young children (Otto et al., 2007). Children who watched more than 3 hours of television on the day of the 2013 Boston Marathon bombing were more likely to experience PTSD symptoms and conduct problems (Comer, Dantowitz et al., 2014). Evidence of secondhand effects of exposure to disaster was reported, with significant association between caregiver distress and various domains of child functioning, following the Boston Marathon bombing (Kerns et al., 2014). Another study found that more than 75 percent of children whose parents were directly exposed to the 9/11 attacks had at least one disaster-related PTSD symptom 3 years after the attack, and more than half experienced at least one post-disaster behavior change (Pfefferbaum, Simic, & North, 2018). For young children who are indirectly exposed to a human-caused disaster, minimizing media exposure may be important (Otto et al., 2007).

POST-DISASTER APPROACHES AND INTERVENTIONS

A variety of approaches and interventions are available to support children and communities after exposure to disasters. For in-depth coverage, see pages 11–14 in the *September 2018 Supplemental Research Bulletin* (<https://www.samhsa.gov/sites/default/files/srb-childrencyouth-8-22-18.pdf>).

Some research has focused on community-level needs and approaches after human-caused disasters. In an assessment of services for children and families after the Sandy Hook Elementary School shooting in Newtown, Connecticut, researchers found a need for more evidence-based practices among mental health and substance use agencies and medical providers; greater individualization of services; and much greater availability of bereavement or grief counseling, which was offered by only one of 28 agencies they interviewed (Hoagwood et al., 2017). Following the Deepwater Horizon oil spill, a program was developed with integration of mental health and substance use services (Osofsky, Osofsky, Wells, & Weems, 2014). The program placed psychiatrists and psychologists in primary care clinics, used a team-based approach with centralized care management to coordinate mental health and substance use treatment practitioners in the field, and featured multiple levels of care to address the different degrees of need that survivors had. Initial evaluation results, focused on adult survivors, were promising. From intake to follow-up at 1 and 3 months, researchers found significant decreases in PTSD and anxiety symptoms, as well as significant improvement in somatic symptoms (Osofsky, Osofsky, Wells, & Weems, 2014).

For children and youth who have experienced trauma as part of human-caused disaster, several interventions have been developed. A sampling of these interventions is provided in Table 1.

Table 1. Sampling of Interventions for Children and Youth Who Have Experienced Trauma and Traumatic Stress

Intervention	Description	Publications on Research With Child and Adolescent Trauma Survivors
Bounce Back	Designed for children in elementary school, Bounce Back is a group intervention to help address symptoms of child traumatic stress, depression, anxiety, and functional impairment associated with exposure to traumatic events, including disasters (National Child Traumatic Stress Network [NCTSN], 2017a). It involves 10 sessions led by a clinician, as well as 2 to 3 individual sessions. It is an adaptation of the Cognitive Behavioral Intervention for Trauma in Schools, which is for slightly older children (NCTSN, 2017a).	Langley, A. K., Gonzalez, A., Sugar, C. A., Solis, D., & Jaycox, L. (2015). Bounce back; Effectiveness of an elementary school-based intervention for multicultural children exposed to traumatic events. <i>Journal of Consulting and Clinical Psychology</i> , 83(5), 853–865.

Intervention	Description	Publications on Research With Child and Adolescent Trauma Survivors
<p>Cognitive Behavioral Intervention for Trauma in Schools (CBITS)</p>	<p>CBITS is a skills-based group intervention designed to help students in 5th through 12th grades with symptoms of PTSD, depression, and general anxiety after experiencing trauma, including school violence and human-caused disasters (NCTSN, 2012). It comprises 10 sessions and includes psycho-education, parent education sessions, skills in management of emotion, cognitive coping skills, and trauma narrative development and processing (Cohen & Mannarino, 2010).</p>	<p>Kataoka, S. H., Stein, B. D., Jaycox, L. H., Wong, M., Escudero, P., Tu, W., Zaragoza, C., & Fink, A. (2003, March). A school-based mental health program for traumatized Latino immigrant children. <i>Journal of the American Academy of Child and Adolescent Psychiatry</i>, 42(3), 311–318. https://doi.org/10.1097/00004583-200303000-00011</p> <p>Stein, B. D., Jaycox, L. H., Kataoka, S. H., Wong, M., Tu, W., Elliott, M. N., & Fink, A. (2003). A mental health intervention for schoolchildren exposed to violence: A randomized controlled trial. <i>JAMA</i>, 290(5), 603–611. https://doi.org/10.1001/jama.290.5.603</p>

Intervention	Description	Publications on Research With Child and Adolescent Trauma Survivors
<p>Trauma-Focused Cognitive Behavioral Therapy (TF-CBT)</p>	<p>“TF-CBT . . . targets both the child and a primary caregiver to treat youth PTS symptoms (Cohen, Mannarino, & Deblinger, 2006). TF-CBT involves gradual exposure to trauma reminders over three phases: (1) stabilization and skills-building, (2) trauma narration and processing, and (3) integration and consolidation. Outcome trials suggest that the involvement of a supportive caregiver is an important aspect of effective treatment” (Yasinski et al., 2016, p. 1068).</p>	<p>Jensen, T. K., Holt, T., & Ormhaug, S. M. (2017, November). A follow-up study from a multisite, randomized controlled trial for traumatized children receiving TF-CBT. <i>Journal of Abnormal Child Psychology</i>, 45(8), 1587–1597. https://doi.org/10.1007/s10802-017-0270-0</p> <p>de Arellano, M. A., Lyman, D. R., Jobe-Shields, L., George, P., Dougherty, R. H., Daniels, A. S., Ghose, S. S., Huang, L., . . . Delphin-Rittmon, M. E. (2014). Trauma-focused cognitive-behavioral therapy for children and adolescents: assessing the evidence. <i>Psychiatric Services</i>, 65(5), 591–602.</p> <p>Murray, L. K., Skavenski, S., Kane, J. C., Mayeya, J., Dorsey, S., Cohen, J. A., Michalopoulos, L. T., Imasiku, M., & Bolton, P. A. (2015, August). Effectiveness of trauma-focused cognitive behavioral therapy among children in Lusaka, Zambia: A randomized clinical trial. <i>JAMA Pediatrics</i>, 169(8), 761–769. https://doi.org/10.1001/jamapediatrics.2015.0580</p>
<p>Support for Students Exposed to Trauma (SSET)</p>	<p>An adaptation of CBITS that can be delivered by school personnel who are not mental health professionals, SSET is an intervention delivered to small groups of 10- to 16-year-old students. SSET was developed to support children and adolescents with moderate to severe PTS symptoms after experience of natural or human-caused disasters and other traumatic events (NCTSN, 2017b).</p>	<p>Jaycox, L. H., Langlely, A. K., Stein, B. D., Wong, M., Sharma, P., Scott, M., & Schonlau, M. (2009). Support for Students Exposed to Trauma: A pilot study. <i>School Mental Health</i>, 1(2):49–60.</p>

CONCLUSION

Human-caused disasters such as mass shootings, terrorist attacks, and technological disasters may cause children and adolescents to experience distress; negative mental health consequences such as anxiety, depression, and PTSD; physical symptoms; and substance use or misuse. These incidents can cause symptoms of mental and substance use disorders in children and youth, particularly in the acute post-disaster period, with a subset of children and youth going on to develop diagnosable disorders. Recognizing modifiable risk and protective factors can inform strategies and tactics for helping children and their families recover and increase the likelihood that they respond and recover effectively after future disasters. Approaches and interventions at community and individual levels have been developed to support young people and communities in coping after disasters.

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