

ACUTE AND CHRONIC REACTIONS TO TRAUMA IN CHILDREN AND ADOLESCENTS

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Although the past few decades have seen important advances in the understanding and treatment of traumatic stress conditions, psychological stress reactions to trauma have been described from antiquity (Birmes et al, 2010). In his biography of famous lives, Plutarch wrote that the general and Roman consul Caius Marius (157-86 BC), when presented with a reminder of one of his dreaded enemies, was gripped with an “*overpowering thought of a new war, of fresh struggles, of terrors known by experience to be dreadful*” and “*was prey to nightly terrors and harassing dreams*” (Plutarch, 1920).

Deriving from the Greek τραῦμα meaning “wound,” the word “trauma” has been used for centuries as a medical term to designate “an injury to living tissue caused by an extrinsic agent.” Nonetheless, it was not until 1889 when Oppenheim first used the clinical descriptions of “traumatic neuroses” in victims of railroad accidents, that the word also encompassed a psychological meaning.

TRAUMATIC EVENTS

Historically, a traumatic event has commonly been described as presenting three characteristics:

- Sudden and unexpected occurrence
- Association with a threat to life or to physical integrity, and
- Being outside of the normal range of life experiences.

These three features differentiate “trauma” from other distressing events such as medical disease or relationship breakups. Lenore Terr defined two types of psychological trauma:

- Type I, associated with a time-limited single traumatic event (accident, disaster, etc.), and
- Type II, caused by long-standing or repeated exposure to traumatic events (abuse, torture, combat situation, etc.) (Terr, 1991).

The evidence for a Type II trauma category was considered too weak to be included in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (American Psychiatric Association 2013; Resick et al, 2012). While in the fourth edition (DSM-IV) (American Psychiatric Association, 1994) traumatic events were defined as “*events that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others*” that are accompanied by a feeling of “*intense fear, helplessness, or horror*,” DSM-5 dropped the subjective reaction to the trauma required in DSM-IV (criterion A2) because evidence did not support the need for it to make a diagnosis of acute stress disorder (ASD) and posttraumatic stress disorder (PTSD) (Stoddard et al, in press). In the DSM-5 definition, traumatic events include not only direct exposure (i.e., being a victim) and witnessing a traumatic event, but also learning that the traumatic event(s) occurred to a close family member or close friend. The DSM-5 definition also includes *extreme and repeated exposure* to aversive details of the traumatic events (e.g., first responders collecting human remains), but excludes exposure through the media unless it is work related (e.g., police officers repeatedly viewing pictures and recordings of assault).

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In relation to children, an important addition to DSM-5 is the new criterion: “negative alterations in cognitions and mood associated with the traumatic event(s).” The “intrusive”, “avoidance”, and “arousal” categories of PTSD symptoms are retained (see section on clinical features below and Table F.4.1).

ASD and PTSD are no longer listed under the chapter on anxiety disorders, but as a distinct category: *Trauma and stressor-related disorders* (see Chapter A.9). In addition to ASD and PTSD, this category includes *reactive attachment disorder*, *disinhibited social engagement disorder*, and quite importantly, *adjustment disorder*. Persistent complex bereavement disorder (also known as complicated grief or prolonged grief disorder) has been included in DSM-5 in the section on conditions for further study, but is also listed as a possible diagnosis as “*specified trauma and stressor-related disorders*” (APA, 2013).

The epidemiologic and clinical research data presented in this chapter is limited to studies utilizing DSM-IV or earlier criteria; little research using DSM-5 criteria is currently available.

THE SPECTRUM OF REACTIONS TO TRAUMA IN CHILDREN AND ADOLESCENTS

Exposure to a traumatic event in this age group may lead to the development of various reactions ranging from relatively mild, causing minor disruptions in the child’s life, to severe and debilitating consequences. Most children and adolescents exposed to traumatic events will develop some psychological distress, which is generally short lived. In some, however, symptoms do not remit spontaneously and instead become clinically significant, persistent and impairing.

Reactions to trauma exposure are defined according to their timeframe: immediate or peri-traumatic (lasting minutes to hours), ASD (lasting between two days and one month), and PTSD (when symptoms persist for more than one month).

In this chapter we will review the different types of psychopathological reactions specific to trauma. However, children and adolescents may develop other psychiatric conditions after trauma exposure including depression, panic disorder, specific phobias (distinctively related to some aspect of the trauma), as well as behavioral and attentional problems (e.g., oppositional defiant disorder). Among preschoolers, other clinical presentations include developmental problems such as loss of previously mastered skills (regression), as well as the onset of fears not specifically associated with aspects of the trauma. Of significance in DSM-5 is the addition of the developmentally modified PTSD subcategory of *posttraumatic stress disorder for children 6 years and younger*, which differs in important ways from the PTSD criteria for children older than 6 years. Especially significant for the diagnosis of PTSD in children aged 6 years and younger is that instead of the 7 symptoms required in older children and adults, only 3 symptoms are required, one each from the “intrusion”, “avoidance or negative cognitions” or “arousal” group of symptoms (see Table F.4.1).



Hermann Oppenheim, a German neurologist, was the first to conceptualize psychological trauma in his 1891 treatise on “traumatic neuroses” (*Weitere Mitteilungen über die traumatischen Neurosen*) based on clinical observations of railway, factory, and construction accident victims.

Regression

Regression is a defense mechanism common in children. When confronted by stressful events they revert to an earlier or less mature pattern of coping, feeling or behavior.

EPIDEMIOLOGY

Acute stress disorder (ASD)

Across studies of trauma-exposed adults, reported prevalence of ASD ranges from 7% to 59% (Bryant et al, 2008; Elklit & Christiansen, 2010) with a mean prevalence of 17.4% (Bryant, 2011). These figures, however, are somewhat lower among children, with reported rates around 8-10% in industrialized countries (Kassam-Adams & Winston, 2004; Bryant et al, 2007; Dalgleish et al, 2008).

Posttraumatic stress disorder (PTSD)

In the US, between 7% and 10% of individuals may suffer from PTSD in their lifetime, while reported 12-month prevalence among adults is approximately 4% (Kessler et al, 2005a; 2005b). In adults, incidence rate (percentage of new cases) of PTSD following a trauma vary greatly (Breslau et al, 1998), determined by a range of factors such as the type of trauma, trauma severity, previous exposure to trauma, the presence of prior mood or anxiety disorders, and elevated peri-traumatic reactions (Brewin et al, 2000; Ozer et al, 2003). Rates of PTSD among child and adolescent survivors of disasters vary widely depending on the studied population and the measures used to assess diagnosis, with rates ranging from 1% to 60% (Wang et al, 2013).

While prior data found that as many as 36% of children and adolescents exposed to a range of traumatic events were diagnosed with PTSD (Fletcher, 1996c), a recent meta-analysis reported that the rate of PTSD among children after trauma exposure is approximately 16% (Alisic et al, in press). A large epidemiological survey in the US found a lifetime prevalence rate for PTSD of 4.7% among adolescents (McLaughlin et al, 2013), with higher rates among females (7.3%) than males (2.2%).

Course and impact

It has been shown that PTSD symptoms in adults improve mostly during the first 12 months following the traumatic event (Bui et al, 2010b), however data suggest that the course of PTSD without treatment is largely a chronic one—individuals may experience significant levels of symptoms and impairment even decades later (e.g., O’Toole et al, 2009).

Similarly, data suggest that among pre-school children, the course of PTSD may be chronic, with limited improvement over the two years following the traumatic event (Scheeringa et al, 2004; 2005; 2006). Data among school-age children, however, are mixed with some reporting no long term impact of a disaster on PTSD rates (McFarlane & Van Hooff, 2009) and others reporting elevated rates (Morgan et al, 2003). Finally, the scarce data in adolescents also points to a possible chronicity of PTSD symptoms in this population (Yule et al, 2000).

Risk factors

A meta-analysis of 64 studies assessing risk factors for PTSD among children and adolescents aged 6 to 18 (Trickey et al, 2012) revealed that factors relating to



Click on the picture to view a short video describing PTSD



IACAPAP's Dr Yoshiro Ono, Japanese Child Psychiatrist providing help in the aftermath of the earthquake and tsunami that devastated Northern Japan on March 11, 2011

the subjective experience of the event (including peri-trauma fear and perceived life-threat) and post-trauma variables (including low social support, social withdrawal, psychiatric comorbidity, poor family functioning, and the use of certain cognitive strategies such as distraction and thought suppression) accounted for medium-to-large effect sizes in the prediction of PTSD, while pre-trauma factors (including female gender, low intelligence, low socioeconomic status, pre-trauma life events, pre-trauma low self-esteem, pre-trauma psychological problems in the youth and parents) accounted for only small-to-medium effect sizes.

CLINICAL FEATURES

Peritraumatic reactions

When confronted with a traumatic event, children and adolescents often show immediate psychological responses. Reactions experienced during and immediately after trauma are called peritraumatic and have been identified as robust predictors of the development of PTSD in adults (Brewin et al, 2000; Ozer et al, 2003). Two types of peritraumatic reactions have been described: peritraumatic distress and peritraumatic dissociation.

Peritraumatic distress was introduced as a measure of the intensity of DSM-IV PTSD (Brunet et al, 2001), and indexes emotional (e.g., fear, horror) and physical (e.g., loss of bowel control) reactions experienced during or immediately after exposure to a traumatic event. Peritraumatic distress can be measured with the

13-item *Peritraumatic Distress Inventory* (PDI) (Brunet et al, 2001) that evaluates feelings of helplessness, sadness, guilt, shame, frustration, fright, horror, passing out, worry for others, loss of bowel and bladder control, physical reactions, and thoughts of dying (Appendix F.4.1).

Peritraumatic dissociation refers to alterations in the experience of time, place and persons during or immediately after exposure to trauma (Marmar et al, 1994) and is assessed by the 10-item *Peritraumatic Dissociative Experiences Questionnaire* (PDEQ). The PDEQ includes items measuring blanking out, a feeling that one is on autopilot, time distortion (“slow motion”), depersonalization (feeling of watching oneself act while having no control over the situation), derealization (a feeling of strangeness and unreality of the external world), confusion, amnesia, and reduced awareness (Appendix F.4.2).

Both the PDI and the PDEQ have been validated in children (Bui et al, 2011), and both peritraumatic distress and dissociation have been shown to be associated with the development of PTSD symptoms in children (Bui et al, 2010a).

Acute stress reaction (ICD-10)/Acute stress disorder (DSM-5)

Early psychological reactions to trauma exposure are described under the label “acute stress reaction” (ASR) in the 10th edition of the International Classification of Diseases (ICD-10) (World Health Organization, 1992), and under “acute stress disorder” (ASD) in DSM-5. While both ASR and ASD descriptions are similar, they differ slightly on their timeframe (onset two days post-trauma exposure for ASR, three days for ASD). We focus on ASD as research and evidence-based recommendations have been mostly conducted using DSM criteria.

ASD was introduced in DSM-IV in order to differentiate short-lived distressing and impairing reactions to trauma from PTSD (Koopman et al, 1995), as well as to identify individuals at risk for PTSD one month later (Spiegel et al, 1996). In DSM-5, a diagnosis of ASD requires exposure to a traumatic event (i.e., exposure to death or threatened death, actual or threatened serious injury, or actual or threatened sexual violation) and the main diagnostic criterion requires meeting 9 of 14 symptoms (in any particular cluster), including symptoms of *intrusion* (i.e., recurrent distressing dreams, recurrent distressing memories of the trauma, intense or prolonged distress upon exposure to reminders, and physiological reactions to reminders); *dissociative symptoms* (i.e., derealization, emotional numbing and inability to remember an aspect of the trauma (typically dissociative amnesia)); *avoidance symptoms* (i.e., avoidance of internal or external reminders that arouse recollections of the traumatic event(s)); and *arousal symptoms* (i.e., irritable or aggressive behavior, exaggerated startle response, sleep disturbance, hypervigilance, and problems with concentration). The duration of the symptoms may run from three days to four weeks after trauma exposure, with clinically significant distress or impairment (see Table F.4.1).

Posttraumatic stress disorder (PTSD)

The diagnosis of PTSD, initially reserved for adults, was extended to youth in 1987 with DSM-III. In DSM-IV, diagnostic criteria for PTSD for children and adolescents are identical to those used for adults with a few caveats. There has

Peritraumatic reactions in an 11 year old child

Alan is an 11-year old boy who lives with his parents and one-year-old sister. One night, while his parents were arguing in front of him, his father stabbed his mother in the abdomen. His mother was taken to hospital and Alan, who came with her, was seen by the psychiatrist on call.

Alan told her what he had witnessed and said that during the fight, he had felt very frightened and that his heart was pounding. He remembered feeling as if he should do something to help his mother, but did not know how to help, and felt he couldn't move his legs. He also said that what had happened seemed unreal, almost as if he were in a movie. He told the psychiatrist that when he thought of the scene again, it seemed slowed down and out of focus. He remembered that he had screamed very loudly when his mother was injured, but could not remember anything after that.

been intense scientific debate over the use of adult DSM-IV criteria for PTSD in children and recent data suggest that youth might require fewer criteria based on functional impairment associated with PTSD symptoms, and may have somewhat different expressions of distress, especially in those who are very young (Scheeringa et al, 2003).

In DSM-5, the diagnosis of PTSD includes the same exposure criteria as ASD (i.e., exposure to death or threatened death, actual or threatened serious injury, or actual or threatened sexual violation). In addition, the adult and adolescent PTSD diagnosis requires:

- *One symptom of intrusion* (criterion B) including recurrent distressing dreams, recurrent distressing memories of the trauma, dissociative reactions (e.g., flashbacks), or intense psychological or physiological reactivity to reminders of the trauma;
- *Persistent avoidance of internal or external stimuli* associated with the trauma (criterion C);
- *Two symptoms of negative alterations in cognitions and mood* associated with the trauma (criterion D) including persistent, distorted blame of self or others, persistent negative emotional state (e.g., fear, horror, anger, shame or guilt), diminished interest or participation in significant activities, detachment or estrangement from others, or persistent inability to experience positive emotions (e.g., emotional numbing); and
- *Two symptoms of alterations in arousal and reactivity* (criterion E), including irritability or aggressive behavior, reckless or self-destructive behavior, hypervigilance, exaggerated startle, problems with concentration, or sleep disturbance.

The diagnosis also requires symptoms to last more than one month, to be associated with clinically significant distress or impairment, and not to be associated with the effects of a substance or medical condition. In addition, DSM-5 includes a subtype of PTSD for preschool children aged six or younger that highlights significant differences including the still developing abstract cognitive

Relationship of ASD with PTSD

ASD was introduced to identify individuals at risk for PTSD. So far, the literature has reported that ASD symptoms significantly increase the likelihood of developing PTSD (McKibben et al, 2008; Bui et al, 2010b; Yasan et al, 2009). However, according to recent empirical data among adults, while the positive predictive power of ASD was reasonable, its sensitivity (proportion of people meeting ASD criteria who eventually develop PTSD) was poor (20-72%), suggesting that most trauma survivors who subsequently develop PTSD do not meet full criteria for ASD (Bryant, 2011).

In line with this, a large study of child and adolescent survivors of motor vehicle accidents failed to show that dissociation symptoms independently predicted subsequent PTSD (Dalgleish et al, 2008).

ASD is therefore to be considered as a clinical entity that captures a significant level of distress and impairment, may help identify youth who might require clinical attention, and may be indicative of a possible subsequent PTSD.



Participants in the 1st Steering Committee Meeting, Jakarta September 19, 2012 of the Asian Partnership to Support Mental Resilience During Crises.

and verbal expression capacities (Scheeringa et al, 2011a; Scheeringa et al, 2001b). Three main modifications are made for this subtype:

- Changes in the re-experiencing symptoms include rewording the criterion B1 (i.e., recurrent and intrusive distressing recollections of the event) which does not require the recollections to be distressing, as a number of traumatized children feel either neutral or excited by the recollection.
- With regard to avoidance symptoms and negative alterations in cognitions and mood, the criteria for preschool children only requires one symptom from these two clusters to be met, as it is usually difficult in this population to identify certain symptoms including “restricted range of affect” and “detachment from loved ones.” In addition, two symptoms were removed as they were not developmentally sensitive: “sense of a foreshortened future” and “inability to recall an important aspect of the event.” Finally, in this cluster, two symptoms were reworded to improve validity among preschool children: diminished interest in activities may take the form of constricted play, while feelings of detachment may manifest as social withdrawal.
- With regards to hyperarousal, only one small change of wording was made with “irritability or outbursts of anger” being modified to include “extreme temper tantrums.” (Table F.4.1)

Differential Diagnosis

Table F.4.1 summarizes the symptoms used for the diagnosis of ASD and PTSD according to DSM-5. PTSD shares symptoms with numerous other conditions, such as substance intoxication, which should be ruled out as the cause or should be excluded from a PTSD diagnosis. Also, PTSD can present concurrently with mood and anxiety symptoms, and the presence of mood and anxiety disorders should be ascertained. The main differential diagnoses to be considered are:

- Adjustment disorder
- ASD
- Anxiety disorder
- OCD
- Major depression
- Dissociative disorders
- Conversion disorder
- Psychosis
- Substance intoxication
- Traumatic brain injury.

In contrast with PTSD, which requires symptoms to be present for at least one month after trauma exposure, ASD is diagnosed during the first month. In addition, PTSD diagnosis requires the presence of at least six symptoms from four clusters (re-experiencing, avoidance, persistent negative alterations in cognitions and mood, and hyperarousal), while ASD diagnosis requires only the presence of nine out of 14 symptoms (see Table F.4.1).

Posttraumatic stress disorder in a 6-year old child

Dolores, a 6-year-old girl, was admitted to hospital with a 40% burn from a house fire in which a younger sibling died. Her mother is at the bedside, her father has been absent for several years. She has a history of early deprivation due to homelessness and is in the 1st grade at school.

Dolores was in her bedroom when she started smelling smoke and saw the door catch fire. She remembered she was very frightened, wet herself, and screamed loudly. She could not remember anything else after that.

She was initially sedated after the grafting of her burn wounds. When she was weaned from IV morphine and midazolam she became tearful and screamed when her mother was absent for short periods. She also appeared anxious whenever nurses in uniform entered the room fearing they would hurt her. She developed insomnia as well as nightmares in which she re-experienced the fire, including episodes of sleep terror. She became upset when her mother did not stay with her even at night. The mother reported that Dolores had changed since the fire; she was no longer interested in playing with dolls, was withdrawn, edgy, and often displayed angry outbursts.

She began to improve when given control over some of her dressing changes, and with careful attention to encouraging her mastery of her fear and pain related to burn dressings, as well as adequate, though reduced, analgesia.



Iranian soldier during Iran-Iraq War.

Similar to PTSD and ASD, adjustment disorders require exposure to a stressful event, which results in clinically significant distress or impairment. However, in adjustment disorders, the stressor does not need to be “traumatic” (i.e., as severe as for ASD or PTSD). Further, adjustment disorder does not specify required symptoms and the patient’s condition should not be explained by another disorder.

Although exposure to a traumatic event may precipitate the onset of a range of mood or anxiety disorders, these diagnoses are not as tightly conditioned by the traumatic event as is the case with ASD and PTSD. While ASD and PTSD share with anxiety disorders (including panic, general anxiety and social anxiety disorders) symptoms of hyperarousal and avoidance, the clinical presentation

Table F.4.1 Comparison of symptoms used for the diagnosis of ASD, PTSD, and PTSD in children <6 years according to DSM-5.

SYMPTOM GROUP	SYMPTOM DESCRIPTION	ASD	PTSD	PTSD in children ≤ 6 years
Exposure to a traumatic event	• Experienced the traumatic event directly	✓	✓	✓
	• Witnessed a traumatic event occurring to others	✓	✓	✓
	• Finding out family or close friend have experienced a traumatic event	✓	✓	✓ [parent or caregiver]
	• Repeated or extreme exposure to upsetting details of a traumatic event	✓	✓	
Intrusion symptoms	• Recurrent intrusive memories of event	✓	✓	✓ [e.g., in play]
	• Recurrent nightmares related to the event	✓	✓	✓
	• Flashbacks or other dissociative reactions	✓	✓	✓ [e.g., re-enacting the event in play]
	• Distress brought about by internal or external cues related to the event	✓	✓	✓
	• Marked physiological reactions to internal or external cues		✓	✓
	• Of distressing memories or feelings associated with event	✓	✓	✓
Avoidance	• Of external reminders of the event such as related people, places or situations	✓	✓	✓
	• Not able to remember aspects of event		✓	
Negative mood & cognition symptoms	• Negative perception of the world, oneself, or others		✓	
	• Distorted impressions about the cause or effects of event		✓	
	• Persistent negative emotions such as horror, anger, or shame		✓	✓
	• Distinctly reduced interest in everyday activities or pastimes		✓	✓
	• Feelings of detachment		✓	✓ [e.g., social withdrawal]
	• Inability to experience positive emotions		✓	✓

Table F.4.1 (Continuation) Comparison of symptoms used for the diagnosis of ASD, PTSD, and PTSD in children <6 years according to DSM-5.

SYMPTOM GROUP	SYMPTOM DESCRIPTION	ASD	PTSD	PTSD in children ≤ 6 years
Arousal symptoms	• Irritability and outbursts of anger	✓	✓	✓ [e.g., extreme temper tantrums]
	• Recklessness or self-destructiveness		✓	
	• Hypervigilance	✓	✓	✓
	• Exaggerated startle response	✓	✓	✓
	• Difficulty concentrating	✓	✓	✓
	• Problems with sleep	✓	✓	✓
Dissociation symptoms	• Depersonalisation	✓		
	• Derealisation	✓		
Requirement for diagnosis		9 out of 14 symptoms	Trauma + 1 intrusion + 1 avoidance + 2 mood/cognitions + 2 arousal	Trauma + 1 intrusion + 1 avoidance or mood/cognitions + 2 arousal
Duration of symptoms after trauma exposure		3 days to 1 month	>1 month	>1 month

Assesment and treatment of refugee children and adolescents exposed to war-related trauma

Child and adolescent refugees who have fled war zones have been frequently exposed to multiple trauma (including witnessing someone being injured, killed or tortured), as well as multiple losses (Rutter, 2003). Although they are often resilient, many experience PTSD as well as other mental health problems, including depression, anxiety and complicated or prolonged grief. Refugee-processing practices, life in refugee camps, and the response of receiving countries, particularly if their entry is illegal, further compound these problems. There seems to be a dose-effect relationship between cumulative trauma and symptoms of emotional distress in refugee children and adolescents exposed to war (Heptinstall et al, 2004; Mollica et al, 1997). Unaccompanied asylum-seeking children (i.e., individuals under 18 separated from both parents and not cared for by a responsible adult) display higher psychological distress than those who are accompanied (Mckelvey & Webb, 1995).

Issues of loss are particularly important among these children because of the social isolation in the host country. Challenges in assessing the impact of trauma among child and adolescent refugees exposed to war include working with interpreters, medico-legal report writing, vicarious trauma exposure (among health care providers), and cross-cultural variations in clinical presentations (Ehnholt & Yule, 2006). Among adults, it has been consistently shown that trauma-related distress can manifest by culturally bound symptoms. For example, in Asian and Southeast Asian cultures, traumatized individuals often fear dysregulation of a “wind flow” in their body. It has thus been found that such culture-bound syndromes as well as somatic complaints were prominent aspects of the experience of PTSD among traumatized Cambodian refugees, which were much more salient than many of the traditional PTSD symptoms (Hinton et al, 2013). Clinicians should therefore not only consider DSM or ICD criteria as relevant.

Although evidence-based treatment approaches including CBT adapted to culture-bound syndromes, eye movement desensitization and reprocessing (EMDR) and narrative exposure therapy are useful to alleviate PTSD symptoms among young refugees, a holistic approach is usually also necessary (Papadopoulos, 1999). Because they are under important social and material stress, young refugees frequently need to discuss current practical difficulties rather than past experiences. Finally, they may also wish to focus on the future rather than reflect on the past, and such a focus should not be discouraged (Beiser & Hyman, 1997).



A freezer truck containing fish is left leaning against a tree in the front yard of a destroyed residence after Hurricane Katrina in Plaquemines Parish, Louisiana, US. FEMA photo/Andrea Booher

of ASD and PTSD includes both a focus around a traumatic event and re-experiencing emotions and images of the trauma. A major depressive episode triggered by a stressful experience may include concentration difficulties, insomnia, social withdrawal or detachment similar to those found in PTSD; however the clinical presentation of depression will lack re-experiencing the trauma or related avoidance.

DIAGNOSIS

Conducting the interview

Evaluation of young persons with possible PTSD should generally begin with open-ended questions to elicit a narrative account of the trauma. For younger children this will often be in a play context, including drawings; for adolescents, in their own words with minimal input from the interviewer. While in adults this non-directive segment may be useful to minimize the risk of making an incorrect PTSD diagnosis in malingering individuals who want to achieve some gain (e.g., compensation), it can be helpful in young children also; it has been reported that children's reports of exposure to trauma and symptoms may be influenced by the way questions are asked (Bruck & Ceci, 1999). In particular, this is important in the context of potential sexual or physical abuse, with significant legal implications. Thus, it is recommended when assessing possible sexual or physical abuse, to use open-ended questions, avoid suggesting answers, and avoid even asking the same question twice as children might change their answer believing they have answered incorrectly the first time. Videotaping interviews is often advised in cases of possible child abuse testimony for the clinician to show that questions were non-directive.

Children and adolescents are usually dependent on their parents to access clinical care. It is therefore important to engage and maintain a therapeutic alliance with caregivers. If caregivers are not aware the child has been exposed to trauma, they are unlikely to present the child for evaluation. Guidelines from the American Academy of Child and Adolescent Psychiatry (AACAP) have recommended that *“Even if trauma is not the reason for referral, clinicians should routinely ask children about exposure to commonly experienced traumatic events (...), and if such exposure is endorsed, the child should be screened for the presence of PTSD symptoms”* (Cohen et al, 2010).

As is the case for other mental disorders, children and adolescents' posttraumatic symptoms influence and are influenced by the family and immediate environment. Assessment of posttraumatic symptoms in this age group should therefore include an assessment of their family (or environment). This is particularly important as other family members may have been exposed to the same traumatic event and may also be suffering from posttraumatic symptoms.

Finally, parents have been consistently found to under-report their children's traumatic experiences and posttraumatic symptoms (Meiser-Stedman et al, 2007; Dyb et al, 2003; Shemesh et al, 2005) particularly among younger children (Dyb et al, 2003). It is therefore not only important but also necessary to directly assess children's symptoms and behaviors and not to rely solely on parental reports of symptoms.



Click on the image to access the American Academy of Child & Adolescent Psychiatry's practice parameter for the assessment and treatment of children and adolescents with posttraumatic stress disorder.

Maternal postpartum, PTSD and developmental issues

Research has shown that childbirth is a stressful event that may lead to negative psychological responses and psychiatric disorders including postpartum depression (Robertson et al, 2004). A growing body of research has focused on PTSD related to childbirth. Reported rates of childbirth-related PTSD vary from 2.8% to 5.6% at six weeks postpartum (Creedy et al, 2000; Goutaudier et al, 2012). When considering sub-threshold PTSD, rates as high as 30% have been reported at 4–8 weeks postpartum (van Son et al, 2005). Further, a stressful delivery, such as preterm birth, significantly increases the likelihood of developing PTSD (Jotzo & Poets, 2005). However, prevalence rates may not be reliable as most studies in the perinatal field used self-report measures to diagnose PTSD when a valid diagnosis cannot be made based solely on scale scores. Furthermore, as some studies use a cut-off score on a self-report questionnaire to make a diagnosis and do not confirm exposure to trauma (unless childbirth by itself is considered a “traumatic event” as required for PTSD), it is likely that some cases might be misdiagnosed as postpartum PTSD when in fact suffering from other disorders such as postpartum depression. It is also important to note that higher rates of postpartum PTSD have been found in at risk samples (e.g., women with gynecological problems or a history of psychiatric disorder).

Nevertheless, childbirth-related PTSD is a potentially important problem as symptoms might negatively impact the mother–infant relationship (Ballard et al, 1995), infants’ development, and their future mental health (Pierrehumbert et al, 2003). In particular, PTSD following childbirth has been found to be associated with attachment disorders. For example, symptoms of avoidance may lead mothers not to bond with the infant, while hypervigilance may result in an over-anxious or over-protective attachment (Bailham & Joseph, 2003). Postpartum PTSD symptoms are also associated with less sensitive parenting and greater worries about intimacy with the baby (Schechter et al, 2004). Children of depressed mothers have been found to be at risk for developing behavioral disturbance, and social and achievement deficits (Anderson & Hammen, 1993). Several authors have hypothesized that there may be a similar link between maternal postpartum PTSD and the infant’s social and behavioral development (e.g., Bailham & Joseph, 2003). Finally, postpartum PTSD symptoms may also have a negative impact on the infant’s cognitive development (Parfitt et al, 2013). Systematic assessment of the psychological impact of delivery on mothers may help identify those at increased risk for significant PTSD symptoms and problematic parenting. Further, since fathers do not usually experience childbirth as traumatizing, psychotherapeutic approaches involving the father in the postpartum might be helpful in dealing with postpartum maternal PTSD symptoms.



Click on the image to access the Health Care Toolbox website that has information about how to provide trauma-informed care.

Assessment tools

A number of assessment instruments are available to assist in the evaluation of ASD and PTSD in children and adolescents (Hawkins & Radcliffe, 2006; March et al, 2012), however some have the limitation of having been adapted from adult measures. Measures based on DSM-5 criteria are not yet available. A detailed review of these instruments is beyond the scope of this chapter. Table F.4.2 summarizes some of the more commonly used measures, whether they are freely available and where they can be found.

The most widely used instrument is the clinician-administered *PTSD Scale for Children and Adolescents* (CAPS-CA) (Nader et al, 1996), an interview-based instrument derived from the adult CAPS that is limited by the duration of the assessment and the requirement for the interviewer to receive training. Another option is the *Child Stress Disorders Checklist* (CSDC) (Saxe et al, 2003).

A few diagnostic interviews that assess a range of disorders are available and can be helpful in assessing PTSD (Scheeringa & Haslett, 2010; Egger et al, 2006). For example, the *Preschool Age Psychiatric Assessment* (Egger et al, 2006) or the *Diagnostic Infant and Preschool Assessment Instruments* may be used in preschoolers (Scheeringa & Haslett, 2010), while the *Diagnostic Interview for Children and Adolescents* (DICA) can be used for both children and adolescents (Reich, 2000).

Table F4.2 Instruments to assess posttraumatic reactions in children and adolescents

MEASURES	AGE RANGE	DURATION (MINUTES)	PSYCHOMETRIC PROPERTIES	FREE TO USE	WHERE TO FIND IT
Interviews					
Child PTSD Reaction Index (CPTSD-RI) (Nader et al, 1990)	6-17	15-20	Good	Yes	Contact author: rpynoos@mednet.ucla.edu
Clinician-Administered PTSD Scale for Children & Adolescents (CAPS-CA) (Nader et al, 1996)	7-18	30-120	Good	Yes	http://www.ptsd.va.gov/professional/assessment/ncptsd-instrument-request-form.asp
Children's Impact of Traumatic Events Scale-Revised (CITES-2) (Wolfe et al, 1991)	6-18	30-45	Moderate to Good	Yes	http://www.clintools.com/victims/resources/assessment/ptsd/cites-r.pdf
Children's Posttraumatic Stress Disorder Inventory (CPTSDI) (Saigh et al, 2000)	7-18	15-20	Good	No	http://www.pearsonclinical.com/
Trauma Symptom Checklist for Children (TSCC) (Briere, 1996)	3-12	20-30	Good	No	http://www4.parinc.com/Products/Product.aspx?ProductID=TSCC
Traumatic Events Screening Inventory (TESI) (Ribbe, 1996)	4+	10-30	N/A	Yes	http://www.ptsd.va.gov/professional/pages/assessments/assessment-pdf/TESI-C.pdf
Self-Reports					
Child PTSD Symptom Scale (CPSS) (Foa et al, 2001)	8-18	10-15	Good	No	http://www.performwell.org/index.php?option=com_mtree&task=att_download&link_id=500&cf_id=24
My Worst Experiences Survey (National Center for Study of Corporal Punishment and Alternatives in Schools, 1992)	9-18	20-30	Good	No	http://www.wpsublish.com/app/
UCLA PTSD Index for DSM-IV (Pynoos et al, 1998)	7-12, 13+	15-20	Excellent	No	Contact author: rpynoos@mednet.ucla.edu
When Bad Things Happen Scale (WBTH) (Fletcher, 1996b)	8-13	10-20	Moderate to Good	Yes	Contact author: Kenneth.Fletcher@umassmed.edu

Table F4.2 (continuation) Instruments to assess posttraumatic reactions in children and adolescents

MEASURES	AGE RANGE	DURATION (MINUTES)	PSYCHOMETRIC PROPERTIES	FREE TO USE	WHERE TO FIND IT
Parent Reports					
Child Stress Disorders Checklist (CSDC) (Saxe et al, 2003)	2-18	10	Excellent	Yes	http://www.ncitsnet.org/hctsn_assets/acp/hospital/CSDC.pdf
Parent Report of Child's Reaction to Stress (Fletcher, 1996a)	N/A	30-45	Good	Yes	Contact author: Kenneth.Fletcher@umassmed.edu
Trauma Symptom Checklist for Young Children (TSCYC) (Briere, 2005)	3-12	20-30	Good	No	http://www.w4.parinc.com/Products/Product.aspx?ProductID=TSCYC

TREATMENT

Immediate interventions for all (less than 24 hours after trauma)

Psychological approaches

Most children and adolescents will experience some psychological or somatic symptoms in the immediate aftermath of trauma. These symptoms do not necessarily indicate a need for intervention as they generally resolve spontaneously without professional help.

Critical incident debriefing, which requires individuals to discuss details of the trauma—sometimes in a group setting—has been found to provide very little or no benefit (Australian Centre for Posttraumatic Mental Health, 2013). Some data in adults suggest that group debriefing increases PTSD symptomatology and may even increase rates of PTSD (Rose et al, 2002; van Emmerik et al, 2002). Data from two randomized controlled trials among children revealed that debriefing was not superior to usual care in reducing rates of PTSD or other negative outcomes including behavioral problems, depression or anxiety (Stallard et al, 2006; Zehnder et al, 2010). Thus while children and adolescents in distress or seeking assistance should be offered the opportunity to ventilate individually about the trauma if they wish to do so, unrequested debriefing (in particular in a group setting) is not recommended.

Recent data suggest that a 3-session exposure-based intervention started in the emergency department within 12 hours of a traumatic event may be helpful in decreasing rates of PTSD among adults (Rothbaum et al, 2012), however, no data are yet available on children and adolescents.

In conclusion, *debriefing should not be routinely provided to traumatized children and adolescents at risk for PTSD*. Exposure-based interventions delivered immediately after trauma may help prevent PTSD in youth exposed to trauma, based on their efficacy in treating PTSD in children and adolescents (see below) and in preventing PTSD among adults. Finally, it is recommended to provide *psychological first aid*, including education about the usual course and normal reactions to trauma, and ensure that basic medical and safety needs are met, including shelter and food, increase social support, and provide appropriate referral.

Pharmacological approaches

A possible approach to the prevention of PTSD could be the administration of a medication immediately after

trauma exposure; however, few data support the efficacy of any pharmacological agents for this indication. Immediate treatment with propranolol has yielded mixed results in adults (Vaiva et al, 2003; Pitman et al, 2002; Hoge et al, 2012), and a trial in children and adolescents was negative (Nugent et al, 2010). More promising, several studies of injured children and adults support the preventive benefit of higher levels of early post-injury administration of opiates for pain on later emergence of PTSD symptomatology (Saxe et al, 2001; Stoddard et al, 2009; Holbrook et al, 2010; Bryant et al, 2009).

Finally, despite their wide clinical use in seeking to relieve acute stress symptomatology, minimal evidence in the adult literature—but more in animal studies—suggests that *benzodiazepines* may not be helpful in the immediate aftermath of trauma and may even worsen outcomes in trauma-exposed individuals (Gelpin et al, 1996; Mellman et al, 2002). As a result, several guidelines recommend avoiding the use of benzodiazepines in the immediate aftermath of trauma.

Benzodiazepines should be avoided in the immediate aftermath of trauma

Early intervention for ASD (symptoms lasting more than two days but less than one month)

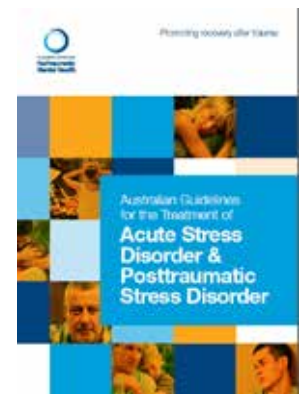
Psychotherapeutic approaches

For adults presenting with symptoms that do not remit rapidly, brief (four to five sessions) trauma-focused cognitive behavioral therapy (CBT) may be effective in treating ASD and in preventing the development of PTSD (Australian Centre for Posttraumatic Mental Health, 2013). These CBT interventions include education, breathing training, relaxation training, exposure-based exercises, and cognitive processing. In children and adolescents, these approaches may be useful as early psychological intervention for ASD based on their efficacy in treating PTSD. In any case, administration of these early psychological interventions is limited by the scarcity of professionals trained to administer them, particularly in low income countries.

Other early interventions tested among children with limited or inconclusive favorable results include self-help websites for children and information booklets for parents (Cox et al, 2010), narrative exposure therapy, and relaxation meditation (Catani et al, 2009). A study reported that a caregiver-child psychosocial and stress management intervention (child and family traumatic stress intervention) was superior to child supportive counselling and psychoeducation in reducing rates of PTSD and PTSD symptom severity among children with at least one cluster of traumatic stress symptoms (Berkowitz et al, 2011).

Pharmacological approaches

A trial of sertraline initiated in the hospital in the few days after trauma (and for a duration of 24 weeks) in burnt children and adolescents (Stoddard et al, 2011) yielded mixed results: no significant improvement in youth-rated PTSD symptoms but significant reduction on parental reports of children's PTSD symptoms. Based on these as well as on the mixed results for antidepressants in the treatment of PTSD, antidepressants are not generally recommended for the treatment of ASD.



Click on the image to access the Australian Guidelines for the Treatment of Acute Stress Disorder and Posttraumatic Stress Disorder.

Interventions for PTSD (symptoms lasting one month or more)

Pharmacological treatment

No large or definitive pharmacological trials in pediatric PTSD are available to date. Overall, trauma-focused psychotherapeutic approaches should be favored in childhood PTSD.

Antidepressants

In adults, selective serotonin reuptake inhibitors (SSRIs) are the recommended first-line pharmacological treatment for PTSD. Their efficacy is well documented; they are usually well tolerated and may be useful in treating comorbid depression. However, there is little evidence to support their effectiveness in treating PTSD in the young. While the efficacy of sertraline and fluoxetine has been examined in young people, both failed to prove superior to placebo (Cohen et al, 2007; Robb et al, 2010; Robert et al, 2008). Thus, to date, evidence supporting the use of SSRIs for the treatment of PTSD in children and adolescents is lacking.

The effectiveness of other antidepressants has not been investigated in randomized controlled trials (e.g., serotonin–norepinephrine reuptake inhibitors) or trials yielded limited or inconclusive results (e.g., monoamine oxidase inhibitors). Given this lack of empirical evidence and their unfavorable side effect profile, including agitation and irritability, they are not recommended in the treatment of childhood PTSD.

Other pharmacological treatments

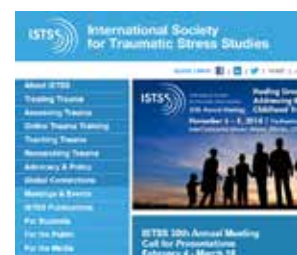
Although it might be tempting to prescribe benzodiazepines for PTSD because of their anxiolytic effects, there are no robust data supporting their efficacy. In addition, given that they may interfere with the extinction of learning processes—important for the effectiveness of cognitive behavioral therapy particularly when benzodiazepines are prescribed on an “as needed” basis—and that individuals with PTSD are at elevated risk for substance abuse and dependence, they are generally not recommended in the treatment of PTSD in the young.

Building on the fact that PTSD is associated with increased autonomic arousal, recent data suggest that anti-adrenergic medications including α - and β -adrenergic receptor blockers, may be useful (Management of Post-Traumatic Stress Working Group, 2010). Results from open label studies conducted in children suggest that the α -adrenergic blocker clonidine (Harmon & Riggs, 1996), and the β -adrenergic blocker propranolol (Famularo et al, 1988) might be effective in treating PTSD symptoms, although randomized controlled data is still needed.

Second generation antipsychotics have been studied with regards to their potential efficacy in treating PTSD in adults; a review suggests they may have a modest benefit (Ahearn et al, 2011). However to date, no randomized controlled data support their use in children with PTSD and their side effects are significant.

Finally, several controlled trials of antiepileptic mood stabilizers on PTSD have been conducted in adults. Overall, results have been mixed. Lamotrigine may have some benefit (Hertzberg et al, 1999), but topiramate, tiagabine, and divalproex have not been shown to be effective (e.g., Tucker et al, 2007; Hamner

In spite of important advances in the pharmacological treatment of adults with PTSD, to date there are no data supporting the use of psychotropic medications in the management of PTSD in children and adolescents.



Click on the image to access the website of the International Society for Traumatic Stress Studies

et al, 2009). Data for children are more limited; so far only one randomized controlled trial has shown some efficacy of sodium valproate for PTSD symptoms in adolescents with comorbid conduct disorder (Steiner et al, 2007).

In summary, although the field has seen important advances in the pharmacological treatment of adults with PTSD, to date there are no data supporting the use of psychotropic medications in the management of PTSD in children and adolescents.

Psychotherapeutic treatments

The most effective psychotherapeutic approaches to the treatment of PTSD symptoms are those based on cognitive-behavioral principles, specifically exposure and remodeling of cognitive processes. Treatments specifically designed for children and teens first became available in the late 1990s, and have been shown in randomized controlled studies to be more effective than supportive and non-directive therapies (Gerson & Rappaport, 2013; Schneider et al, 2013).

The best studied and most widely used is *Trauma-Focused Cognitive Behavioral Therapy* (TF-CBT) (Schneider et al, 2013). TF-CBT has been shown to reduce PTSD symptoms, trauma-related depression, and improve adaptive functioning in a variety of populations, including children and teens traumatized by sexual abuse, terrorism, domestic and community violence, and traumatic loss (Kowalik et al, 2011; Cary & McMillen, 2012). An adaptation of TF-CBT (*Pre-School PTSD Treatment*) has been tested in a sample of children ages three to six, with positive results (Scheeringa et al, 2011a).

TF-CBT is a time-limited (12-16 sessions) therapy that combines exposure, cognitive processing remodeling and enhancement of coping skills, delivered sequentially in 10 components: psycho-education, parenting skills (parent), relaxation skills, affect regulation skills, cognitive coping skills, trauma narrative, processing cognitive distortions, *in vivo* mastery of trauma triggers, parent-child sessions, and skills to increase safety from future exposures to trauma. Pre-School PTSD Treatment consists of 12 conjoint child-parent sessions and uses drawing as a developmentally appropriate expressive modality for the child to identify thoughts and feelings and to process the child's trauma narrative (see Box in page F.4.20).

As with adults, young people with PTSD may have co-occurring mental health conditions such as substance abuse, aggression, delinquency, and psychosis. TF-CBT may be effectively combined with substance abuse treatment to reduce PTSD symptoms in adolescents abusing drugs or alcohol (Cohen et al, 2006; 2010). There are no data currently to guide psychotherapeutic treatment for children or adolescents with PTSD and comorbid conduct, bipolar, or psychotic disorder. Practice guidelines (e.g., Cohen et al, 2010) recommend integrating the treatment for both the PTSD and the co-occurring condition.

In contrast to adult psychotherapy, psychotherapies for children and adolescents raise the question of whether to involve the parents in the treatment. Evidence suggests that, when compared with treatment of the child or adolescent alone, parental involvement leads to better outcomes (Cohen et al, 2010). Further, parents' involvement may reduce drop-outs (Chowdhury & Pancha, 2011) and provide children an ally when completing homework assignments, in maintaining

Cognitive-behavioral principles for the treatment of PTSD

CBT approaches basically target cognitive processes and avoidance.

Cognitive processing

A traumatized person's inaccurate beliefs (cognitions) about the causes and consequences of the traumatic event (e.g., "I should have known the car was not going to stop when my friend was riding a bike across the street") play a significant role undermining the natural recovery from trauma. Cognitive processing targets these maladaptive cognitions and the negative feelings associated with them with the goal of achieving a more accurate appraisal of events, thereby facilitating progress toward recovery from the traumatic experience.

Avoidance

A traumatized individual's fear and avoidance of reminders of the traumatic event (e.g., avoiding the physical location where the traumatic event occurred), prevent recovery from trauma and maintain PTSD over time. Exposure consists of two procedures, imagined exposure to the trauma memory and in-vivo exposure to trauma-related situations. Exposure is implemented in a gradual manner after the therapist and patient collaboratively develop a severity hierarchy of such situations. Systematic exposure aims to reduce the distressing emotional and physiological reactions evoked by traumatic memories ("triggers"), thereby preventing the avoidance behaviors that maintain PTSD symptoms.

a positive outlook, and practicing skills to maintain gains post-treatment. Parent involvement in the treatment of younger children is critical since an empathic, emotionally attuned relationship to parents or other primary caregivers is essential to a child's recovery from trauma (Lieberman et al, 2011).

Finally, although the mechanism of action is unclear, *eye movement desensitization and reprocessing* (EMDR) has been found to be effective in adult PTSD. EMDR integrates elements of psychodynamic, cognitive-behavioral, cognitive, interpersonal, systems, and body-oriented therapies, as well as a bilateral brain stimulation component (e.g., eye movements). The current literature suggests that EMDR is effective in adult PTSD (Bisson et al, 2007). In youth, the evidence for the effectiveness of EMDR is not as strong as it is for CBT (Gillies et al, 2012).

CONCLUSION

Since the formal introduction of the diagnosis of PTSD in children in 1981, research has increased our understanding of the risk factors, phenomenology, neurobiology, prevention, and treatment. It is now widely accepted that PTSD is a common condition in youth that causes much distress and disability.

Although significant advances in treatment have been made, particularly with cognitive behavioral approaches, the stigma and avoidance associated with PTSD, as well as children being dependent on their parents to seek care is still a problem. In most countries, but particularly in low income ones, lack of trained professionals is another, often insurmountable barrier. Nonetheless, with continued research and progress in the field, the current barriers to treatment will presumably decrease

- Do you have questions?
- Comments?

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PLEASE GO TO APPENDIX F.4.3 FOR SELF-DIRECTED LEARNING EXERCISES AND SELF-ASSESSMENT QUESTIONS

Components of Trauma-Focused Cognitive Behavioral Therapy

- **Psycho-education**

Provision of information about current symptoms, common emotional and behavioral reactions to the type of trauma experienced, the relationship between thoughts, feelings, and behavior, current treatment, and strategies to manage current symptoms.

- **Parenting skills**

Teaching caregivers effective use of praise, selective attention, time-out, and behavior charts to assist with contingency reinforcement.

- **Relaxation skills**

Teaching focused breathing, progressive muscle relaxation, positive imagery, and aerobic activity.

- **Affect regulation**

Aims to assist the young persons in identifying their feelings more effectively through activities such as feeling charts or games, and then help them develop a greater regulation of feelings through acquisition of skills such as thought interruption, positive imagery, positive self-talk, problem-solving and social skills.

- **Cognitive coping skills**

Provides coaching on "internal self-talk," the influence between cognition, feelings and behavior, and helping to create alternative, more realistic thoughts in order to address and correct unhelpful beliefs about the traumatic event, (e.g., If I had gone to the park with my brother, I could have stopped the car that hit him).

- **Trauma narrative**

Aims to create a more consistent, coherent understanding of the traumatic experience through gradual exposure to traumatic memories through reading, writing, and expressive modalities such as drawing, leading to a decrease in symptoms; the narrative is shared with parents as an additional source of exposure and of relationship restoration and enhancement between the parent and child

- **Processing cognitive distortions**

Seeks to further process and correct inaccurate and unhelpful thoughts noted in the trauma narrative.

- **In vivo mastery of trauma triggers**

Aims to address anxiety and avoidance developed as a protective response to inherently innocuous trauma triggers through gradual exposure to the situations themselves.

- **Parent-child sessions**

Seek to increase young persons' comfort in discussing the traumatic experiences with parents through conjoint meetings that typically occur after cognitive processing and coping skills have been mastered by the young persons and the parents.

- **Increase safety for the future**

Teaching skills that will enhance their preparedness and self-efficacy when facing situations with inherent risk to safety (e.g., practicing how to communicate with adults about situations and experiences that are frightening or confusing; paying attention to "gut reactions"; identifying trustworthy adults; practicing how to ask for help).

REFERENCES

- Ahearn EP, Juergens T, Cordes T et al. (2011) A review of atypical antipsychotic medications for posttraumatic stress disorder. *International Clinical Psychopharmacology* 26:193-200.
- Alisic E, Zalta AK, van Wesel F et al (in press). PTSD rates in trauma-exposed children and adolescents: A meta-analysis. *British Journal of Psychiatry*.
- Anderson CA, Hammen CL (1993). Psychosocial outcomes of children of unipolar depressed, bipolar, medically ill, and normal women: A longitudinal study. *Journal of Consulting and Clinical Psychology* 61:448-454.
- American Psychiatric Association (2013). *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition*. Arlington VA: American Psychiatric Association.
- American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders Fourth Edition*. Washington DC: American Psychiatric Association.
- Australian Centre for Posttraumatic Mental Health (2013). *Australian Guidelines for the Treatment of Acute Stress Disorder and Posttraumatic Stress Disorder*. Melbourne: ACPMH.
- Bailham D, Joseph S (2003). Post-traumatic stress following childbirth: A review of the emerging literature and directions for research and practice. *Psychology, Health & Medicine* 8:159-168.
- Ballard CG, Stanley AK, Brockington IF (1995). Post-traumatic stress disorder (PTSD) after childbirth. *British Journal of Psychiatry* 166:525-528.
- Beiser M, Hyman I (1997). Refugees' time perspective and mental health. *American Journal of Psychiatry* 154:996-1002.
- Berkowitz SJ, Stover CS, Marans SR (2011). The Child and Family Traumatic Stress Intervention: Secondary prevention for youth at risk of developing PTSD. *Journal of Child Psychology and Psychiatry* 52:676-685. Doi:10.1111/j.1469-7610.2010.02321.x
- Birmes P, Bui E, Klein K et al (2010). Psychotraumatology in antiquity. *Stress & Health* 26:21-31. Doi: 10.1002/smi.1251
- Bisson JI, Ehlers A, Matthews R et al (2007). Psychological treatments for chronic post-traumatic stress disorder. Systematic review and meta-analysis. *British Journal of Psychiatry* 190:97-104.
- Breslau N, Kessler RC, Chilcoat HD et al (1998). Trauma and posttraumatic stress disorder in the community. *Archives of General Psychiatry* 55:626-632.
- Brewin CR, Andrews B, Valentine JD (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology* 68:748-766. Doi: 10.1037/0022-006X.68.5.748
- Briere J (1996). *Trauma Symptom Checklist for Children*. Odessa, FL: Psychological Assessment Resources 00253-8.
- Briere J (2005). *Trauma Symptom Checklist for Young Children*. Odessa, FL: Psychological Assessment Resources, Inc.
- Bruck M, Ceci SJ (1999). The suggestibility of children's memory. *Annual Review of Psychology* 50:419-439.
- Brunet A, Weiss DS, Metzler TJ et al (2001). The Peritraumatic Distress Inventory: A proposed measure of PTSD criterion A2. *American Journal of Psychiatry* 158:1480-1485.
- Bryant RA (2011). Acute stress disorder as a predictor of posttraumatic stress disorder: A systematic review. *Journal of Clinical Psychiatry* 72:233-239.
- Bryant RA, Creamer M, O'donnell M et al (2009). A study of the protective function of acute morphine administration on subsequent posttraumatic stress disorder. *Biological Psychiatry* 65:438-440.
- Bryant RA, Creamer M, O'donnell ML et al (2008). A multisite study of the capacity of acute stress disorder diagnosis to predict posttraumatic stress disorder. *Journal of Clinical Psychiatry* 69:923-929.
- Bryant RA, Salmon K, Sinclair E et al (2007). The relationship between acute stress disorder and posttraumatic stress disorder in injured children. *Journal of Traumatic Stress* 20:1075-1079.
- Bui E, Brunet A, Allenou C et al (2010a). Peritraumatic reactions and posttraumatic stress symptoms in school-aged children victims of road traffic accident. *General Hospital Psychiatry* 32:330-333.
- Bui E, Brunet A, Olliac B et al (2011). Validation of the Peritraumatic Dissociative Experiences Questionnaire and Peritraumatic Distress Inventory in school-aged victims of road traffic accidents. *European Psychiatry* 26:108-111.
- Bui E, Tremblay L, Brunet A et al (2010b). Course of posttraumatic stress symptoms over the 5 years following an industrial disaster: A structural equation modeling study. *Journal of Traumatic Stress* 23:759-766. Doi:10.1002/jts.20592
- Cary CE, Mcmillen JC (2012). The data behind the dissemination: A systematic review of trauma-focused cognitive behavioral therapy for use with children and youth. *Children and Youth Services Review* 34:748-757.
- Catani C, Kohiladevy M, Ruf M et al (2009). Treating children traumatized by war and Tsunami: A comparison between exposure therapy and meditation-relaxation in North-East Sri Lanka. *BMC Psychiatry* 9:22.
- Chowdhury U, Pancha A (2011). Post-traumatic stress disorder in children and adolescents. *Community Practitioner* 84:33-35.
- Cohen JA, Bukstein O, Walter H et al (2010). Practice parameter for the assessment and treatment of children and adolescents with posttraumatic stress disorder. *Journal of the American Academy of Child & Adolescent Psychiatry* 49:414-430.
- Cohen JA, Mannarino AP, Deblinger E (2006). *Treating Trauma and Traumatic Grief in Children and Adolescents*. New York, NY: Guilford Press.

- Cohen JA, Mannarino AP, Perel JM et al (2007). A pilot randomized controlled trial of combined trauma-focused CBT and sertraline for childhood PTSD symptoms. *Journal of the American Academy of Child & Adolescent Psychiatry* 46:811-819.
- Cox CM, Kenardy JA, Hendrikz JK (2010). A randomized controlled trial of a web-based early intervention for children and their parents following unintentional injury. *Journal of Pediatric Psychology* 35:581-592.
- Creedy DK, Shochet IM, Horsfall J (2000). Childbirth and the development of acute trauma symptoms: Incidence and contributing factors. *Birth* 27:104-111.
- Dalgleish T, Meiser-Stedman R, Kassam-Adams N et al (2008). Predictive validity of acute stress disorder in children and adolescents. *British Journal of Psychiatry* 192:392-393.
- Dyb G, Holen A, Braenne K et al (2003). Parent-child discrepancy in reporting children's post-traumatic stress reactions after a traffic accident. *Nordic Journal of Psychiatry* 57:339-344.
- Egger HL, Erkanli A, Keeler G et al (2006). Test-retest reliability of the Preschool Age Psychiatric Assessment (PAPA). *Journal of the American Academy of Child & Adolescent Psychiatry* 45:538-549.
- Ehnholt KA, Yule W (2006). Practitioner review: Assessment and treatment of refugee children and adolescents who have experienced war-related trauma. *Journal of Child Psychology and Psychiatry* 47:1197-1210.
- Elklit A, Christiansen DM (2010). ASD and PTSD in rape victims. *Journal of Interpersonal Violence* 25:1470-1488.
- Famularo R, Kinscherff R, Fenton T (1988). Propranolol treatment for childhood posttraumatic stress disorder, acute type. A pilot study. *American Journal of Diseases of Children* 142: 1244-1247.
- Fletcher KE (1996a). Psychometric review of the Parent Report of Child's Reaction to Stress. In Stamm B (ed) *Measurement of Stress, Trauma, and Adaptation*. Lutherville, MD: Sidran Press.
- Fletcher KE (1996b). Psychometric review of the When Bad Things Happen Scale (WBTH). In Stamm B (ed) *Measurement of Stress, Trauma, and Adaptation*. Lutherville, MD: Sidran Press.
- Fletcher KE (1996c). Childhood posttraumatic stress disorder. In EJ Mash, RA Barkley (eds) *Child Psychopathology*. New York: The Guilford Press, pp. 242-276.
- Foa EB, Johnson KM, Feeny NC et al (2001). The child PTSD Symptom Scale: A preliminary examination of its psychometric properties. *Journal of Clinical Child & Adolescent Psychology* 30:376-384.
- Gelpin E, Bonne O, Peri T et al (1996). Treatment of recent trauma survivors with benzodiazepines: A prospective study. *Journal of Clinical Psychiatry* 57:390-394.
- Gerson R, Rappaport N (2013). Traumatic stress and posttraumatic stress disorder in youth: Recent research findings on clinical impact, assessment, and treatment. *Journal of Adolescent Health* 52:137-143.
- Gillies D, Taylor F, Gray C et al (2012). Psychological therapies for the treatment of post-traumatic stress disorder in children and adolescents. *Cochrane Database of Systematic Reviews* 12:CD006726.
- Goutaudier N, Séjourné N, Rousset C et al (2012). Negative emotions, childbirth pain, perinatal dissociation and self-efficacy as predictors of postpartum posttraumatic stress symptoms. *Journal of Reproductive and Infant Psychology* 30:352-362.
- Guardia D, Brunet A, Duhamel A et al (2013). Prediction of trauma-related disorders: A proposed cutoff score for the peritraumatic distress inventory. *Primary Care Companion for CNS Disorders* 15(1):PCC.12l01406. Doi:10.4088/PCC.12l01406
- Hamner MB, Faldowski RA, Robert S et al (2009). A preliminary controlled trial of divalproex in posttraumatic stress disorder. *Annals of Clinical Psychiatry* 21:89-94.
- Harmon RJ, Riggs PD (1996). Clonidine for posttraumatic stress disorder in preschool children. *Journal of the American Academy of Child & Adolescent Psychiatry* 35:1247-1249.
- Hawkins SS, Radcliffe J (2006). Current measures of PTSD for children and adolescents. *Journal of Pediatric Psychology* 31:420-430.
- Heptinstall E, Sethna V, Taylor E (2004). PTSD and depression in refugee children: Associations with pre-migration trauma and post-migration stress. *European Child & Adolescent Psychiatry* 13:373-380.
- Hertzberg MA, Butterfield MI, Feldman ME et al (1999). A preliminary study of lamotrigine for the treatment of posttraumatic stress disorder. *Biological Psychiatry* 45:1226-1229.
- Hinton DE, Kredlow MA, Pich V et al (2013). The relationship of PTSD to key somatic complaints and cultural syndromes among Cambodian refugees attending a psychiatric clinic: The Cambodian Somatic Symptom and Syndrome Inventory (CSSI). *Transcultural Psychiatry* 50:347-370.
- Hoge EA, Worthington JJ, Nagurny JT et al. (2012). Effect of acute posttrauma propranolol on PTSD outcome and physiological responses during script-driven imagery. *CNS Neuroscience & Therapeutics* 18:21-27.
- Holbrook TL, Galarneau MR, Dye JL et al (2010). Morphine use after combat injury in Iraq and post-traumatic stress disorder. *New England Journal of Medicine* 362:110-117.
- Jotzo M, Poets CF (2005). Helping parents cope with the trauma of premature birth: An evaluation of a trauma-preventive psychological intervention. *Pediatrics* 115:915-919.
- Kassam-Adams N, Winston FK (2004). Predicting child PTSD: The relationship between acute stress disorder and PTSD in injured children. *Journal of the American Academy of Child & Adolescent Psychiatry* 43:403-411.
- Kessler RC, Berglund P, Demler O et al (2005a). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry* 62:593-602.

- Kessler RC, Chiu WT, Demler O et al (2005b). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry* 62:617-627.
- Koopman C, Classen C, Cardena E et al (1995). When disaster strikes, acute stress disorder may follow. *Journal of Traumatic Stress* 8:29-46.
- Kowalik J, Weller J, Venter J et al (2011). Cognitive behavioral therapy for the treatment of pediatric posttraumatic stress disorder: A review and meta-analysis. *Journal of Behavior Therapy and Experimental Psychiatry* 42:405-413.
- Lieberman AF, Chu A, Van Horn P et al (2011). Trauma in early childhood: Empirical evidence and clinical implications. *Development and Psychopathology* 23:397-410.
- Management of Post-Traumatic Stress Working Group (2010). VA/DoD Clinical Practice Guideline for Management of Post-Traumatic Stress. Washington (DC): Veterans Health Administration, Department of Defense.
- March S, De Young AC, Murray B et al (2012). Assessment of posttraumatic stress in children and adolescents. In G Beck and D Sloane (eds) *The Oxford Handbook of Traumatic Stress Disorders*. New York: Oxford University Press pp. 262-281.
- Marmar CR, Weiss DS, Schlenger WE et al (1994). Peritraumatic dissociation and posttraumatic stress in male Vietnam theater veterans. *American Journal of Psychiatry* 151:902-907.
- Mcfarlane AC, Van Hooff M (2009). Impact of childhood exposure to a natural disaster on adult mental health: 20-year longitudinal follow-up study. *British Journal of Psychiatry* 195:142-148.
- Mckelvey RS, Webb JA (1995). Unaccompanied status as a risk factor in Vietnamese Amerasians. *Social Science & Medicine* 41:261-266.
- Mckibben JB, Bresnick MG, Askay SAW et al (2008). Acute stress disorder and posttraumatic stress disorder: A prospective study of prevalence, course, and predictors in a sample with major burn injuries. *Journal of Burn Care Research* 29:22-35.
- Mclaughlin KA, Koenen KC, Hill ED et al (2013). Trauma exposure and posttraumatic stress disorder in a national sample of adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry* 52:815-830. Doi: 10.1016/j.jaac.2013.05.011
- Meiser-Stedman R, Smith P, Glucksman E et al (2007). Parent and child agreement for acute stress disorder, post-traumatic stress disorder and other psychopathology in a prospective study of children and adolescents exposed to single-event trauma. *Journal of Abnormal Child Psychology* 35:191-201.
- Mellman TA, Bustamante V, David D et al (2002). Hypnotic medication in the aftermath of trauma. *Journal of Clinical Psychiatry* 63:1183-1184.
- Mollica RF, Poole C, Son L et al (1997). Effects of war trauma on Cambodian refugee adolescents' functional health and mental health status. *Journal of the American Academy of Child & Adolescent Psychiatry* 36:1098-1106.
- Morgan L, Scourfield J, Williams D et al (2003). The Aberfan disaster: 33-year follow-up of survivors. *British Journal of Psychiatry* 182:532-336.
- Nader K, Kriegler J, Blake D et al (1996). *Clinician Administered PTSD Scale for Children and Adolescents for (DSM-IV) (CAPS-CA). Current and Lifetime Diagnostic Version, and Instruction Manual*. Los Angeles: National Center for PTSD and UCLA Trauma Psychiatry Program.
- Nader K, Pynoos R, Fairbanks L et al (1990). Children's PTSD reactions one year after a sniper attack at their school. *American Journal of Psychiatry* 147:1526-1530.
- National Center for Study of Corporal Punishment and Alternatives in Schools (1992). *My Worst Experiences Survey*. Philadelphia, PA: Temple University Press.
- Nugent NR, Christopher NC, Crow JP et al (2010). The efficacy of early propranolol administration at reducing PTSD symptoms in pediatric injury patients: A pilot study. *Journal of Traumatic Stress* 23:282-287.
- O'Toole BI, Catts SV, Outram S et al (2009). The physical and mental health of Australian Vietnam veterans 3 decades after the war and its relation to military service, combat, and post-traumatic stress disorder. *American Journal of Epidemiology* 170:318-330.
- Ozer EJ, Best SR, Lipsey TL et al (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin* 129:52-73. Doi: 10.1037/1942-9681.S.1.3
- Papadopoulos R (1999). Working with Bosnian medical evacuees and their families: Therapeutic dilemmas. *Clinical Child Psychology and Psychiatry* 4:107-120.
- Parfitt Y, Pike A, Ayers S (2013). Infant developmental outcomes: a family systems perspective. *Infant and Child Development*. Doi: 10.1002/icd.1830.
- Pierrehumbert B, Nicole A, Muller-Nix C et al (2003). Parental post-traumatic reactions after premature birth: Implications for sleeping and eating problems in the infant. *Archives of Disease in Childhood Fetal Neonatal Edition* 88:F400-404. Doi: 10.1136/fn.88.5.F400
- Pitman RK, Sanders KM, Zusman RM et al (2002). Pilot study of secondary prevention of posttraumatic stress disorder with propranolol. *Biological Psychiatry* 51:189-192.
- Plutarch (1920). *Plutarch's Lives*, London: William Heinemann.
- Pynoos R, Rodriguez N, Steinberg A et al (1998). *The UCLA PTSD Reaction Index for DSM IV* (Revision 1). Los Angeles: UCLA Trauma Psychiatry Program.
- Reich W (2000). Diagnostic Interview for Children and Adolescents (DICA). *Journal of the American Academy of Child & Adolescent Psychiatry* 39:59-66.
- Resick PA, Bovin MJ, Calloway AL et al (2012). A critical evaluation of the complex PTSD literature: Implications for DSM-5. *Journal of Traumatic Stress* 25: 241-251. Doi: 10.1002/jts.21699
- Ribbe D (1996). Psychometric review of Traumatic Event Screening Instrument for Children (TESI-C). In Stamm B (ed) *Measurement of Stress, Trauma, and Adaptation*. Lutherville, MD: Sidran Press.
- Robb AS, Cueva JE, Sporn J et al (2010). Sertraline treatment of children and adolescents with posttraumatic stress

- disorder: A double-blind, placebo-controlled trial. *Journal of Child and Adolescent Psychopharmacology* 20:463-471.
- Robert R, Tcheung WJ, Rosenberg L et al (2008). Treating thermally injured children suffering symptoms of acute stress with imipramine and fluoxetine: A randomized, double-blind study. *Burns* 34:919-928.
- Robertson E, Grace S, Wallington T et al (2004). Antenatal risk factors for postpartum depression: A synthesis of recent literature. *General Hospital of Psychiatry* 26:289-295.
- Rose S, Bisson J, Churchill R et al (2002). Psychological debriefing for preventing post traumatic stress disorder (PTSD). *Cochrane Database Systematic Reviews* (2): CD000560. Doi: 10.1002/14651858.CD000560
- Rothbaum BO, Kearns MC, Price M et al (2012). Early intervention may prevent the development of posttraumatic stress disorder: A randomized pilot civilian study with modified prolonged exposure. *Biological Psychiatry* 72:957-963. Doi: 10.1016/j.biopsych.2012.06.002.
- Rutter J (2003). *Supporting Refugee Children in 21st Century Britain: A Compendium of Essential Information*. Stoke on Trent, UK: Trentham Books.
- Saigh PA, Yasik AE, Oberfield RA et al (2000). The Children's PTSD Inventory: Development and reliability. *Journal of Traumatic Stress* 13:369-380.
- Saxe G, Chawla N, Stoddard F et al (2003). Child Stress Disorders Checklist: A measure of ASD and PTSD in children. *Journal of the American Academy of Child & Adolescent Psychiatry* 42:972-978.
- Saxe G, Stoddard F, Courtney D et al (2001). Relationship between acute morphine and the course of PTSD in children with burns. *Journal of the American Academy of Child & Adolescent Psychiatry* 40:915-921.
- Schechter DS, Zeanah CH, Jr., Myers MM et al (2004). Psychobiological dysregulation in violence-exposed mothers: Salivary cortisol of mothers with very young children pre- and post-separation stress. *Bulletin of the Menninger Clinic* 68:319-336.
- Scheeringa MS, Haslett N (2010). The reliability and criterion validity of the Diagnostic Infant and Preschool Assessment: A new diagnostic instrument for young children. *Child Psychiatry and Human Development* 41:299-312.
- Scheeringa MS, Peebles CD, Cook CA et al (2001a). Toward establishing procedural, criterion, and discriminant validity for PTSD in early childhood. *Journal of the American Academy of Child & Adolescent Psychiatry* 40:52-60.
- Scheeringa MS, Weems CF, Cohen JA et al (2011b). Trauma-focused cognitive-behavioral therapy for posttraumatic stress disorder in three-through six year-old children: A randomized clinical trial. *Journal of Child Psychology and Psychiatry* 52:853-860. Doi: 10.1111/j.1469-7610.2010.02354.x
- Scheeringa MS, Wright MJ, Hunt JP et al (2006). Factors affecting the diagnosis and prediction of PTSD symptomatology in children and adolescents. *American Journal of Psychiatry* 163:644-651.
- Scheeringa MS, Zeanah CH, Cohen JA (2011b). PTSD in children and adolescents: Toward an empirically based algorithm. *Depression and Anxiety* 28:770-782.
- Scheeringa MS, Zeanah CH, Myers L et al (2004). Heart period and variability findings in preschool children with posttraumatic stress symptoms. *Biological Psychiatry* 55:685-691. Doi:10.1016/j.biopsych.2004.01.006
- Scheeringa MS, Zeanah CH, Myers L et al (2003). New findings on alternative criteria for PTSD in preschool children. *Journal of the American Academy of Child & Adolescent Psychiatry* 42:561-570.
- Scheeringa MS, Zeanah CH, Myers L et al (2005). Predictive validity in a prospective follow-up of PTSD in preschool children. *Journal of the American Academy of Child & Adolescent Psychiatry* 44:899-906.
- Schneider SJ, Grilli SE, Schneider JR (2013). Evidence-based treatments for traumatized children and adolescents. *Current Psychiatry Reports* 15:332.
- Shemesh E, Newcorn JH, Rockmore L et al (2005). Comparison of parent and child reports of emotional trauma symptoms in pediatric outpatient settings. *Pediatrics* 115:e582-589.
- Spiegel D, Koopman C, Cardeña E et al (1996). Dissociative symptoms in the diagnosis of acute stress disorder. In L K Michelson, W J Ray (eds). *Handbook of Dissociation: Theoretical, Empirical, and Clinical Perspectives*. New York, NY: Plenum Press pp. 367-380.
- Stallard P, Velleman R, Salter E et al (2006). A randomised controlled trial to determine the effectiveness of an early psychological intervention with children involved in road traffic accidents. *Journal of Child Psychology and Psychiatry* 47:127-134. Doi: 10.1111/j.1469-7610.2005.01459.x
- Steiner H, Saxena KS, Carrion V et al (2007). Divalproex sodium for the treatment of PTSD and conduct disorder youth: A pilot randomized controlled clinical trial. *Child Psychiatry and Human Development* 38:183-193.
- Stoddard FJ Jr, Luthra R, Sorrentino EA et al (2011). A randomized controlled trial of sertraline to prevent posttraumatic stress disorder in burned children. *Journal of Child and Adolescent Psychopharmacology* 21:469-477. Doi:10.1089/cap.2010.0133.
- Stoddard FJ, Jr., Sorrentino EA, Ceranoglu TA et al (2009). Preliminary evidence for the effects of morphine on posttraumatic stress disorder symptoms in one- to four-year-olds with burns. *Journal of Burn Care & Research* 30:836-843.
- Stoddard FJ, Simon NM, Pitman RK (in press). Trauma- and stressor-related disorders. In: Hales RE, Yudofsky S, Roberts L (eds) *American Psychiatric Publishing Textbook of Psychiatry, Sixth Edition*. Arlington, VA : American Psychiatric Publishing.
- Terr LC (1991). Childhood traumas: An outline and overview. *American Journal of Psychiatry* 148:10-20.
- Trickey D, Siddaway AP, Meiser-Stedman R et al (2012). A meta-analysis of risk factors for post-traumatic stress disorder in children and adolescents. *Clinical Psychology Review* 32:122-138.

- Tucker P, Trautman RP, Wyatt DB et al (2007). Efficacy and safety of topiramate monotherapy in civilian posttraumatic stress disorder: A randomized, double-blind, placebo-controlled study. *Journal of Clinical Psychiatry* 68:201-206.
- Vaiva G, Ducrocq F, Jezequel K et al (2003). Immediate treatment with propranolol decreases posttraumatic stress disorder two months after trauma. *Biological Psychiatry* 54:947-949.
- van Emmerik AA, Kamphuis JH, Hulsbosch AM et al (2002). Single session debriefing after psychological trauma: A meta-analysis. *Lancet* 360:766-771. Doi: 10.1016/S0140-6736(02)09897-5
- van Son M, Verkerk G, van der Hart O et al (2005). Prenatal depression, mode of delivery and perinatal dissociation as predictors of postpartum posttraumatic stress: An empirical study. *Clinical Psychology & Psychotherapy* 12:297-312.
- Wang CW, Chan CL, Ho RT (2013). Prevalence and trajectory of psychopathology among child and adolescent survivors of disasters: A systematic review of epidemiological studies across 1987-2011. *Social Psychiatry and Psychiatric Epidemiology* 48:1697-1720. Doi: 10.1007/s00127-013-0731-x
- Wolfe VV, Gentile C, Michienzi T et al (1991). The Children's Impact of Traumatic Events Scale: A measure of post-sexual abuse PTSD symptoms. *Behavioral Assessment* 13:359-383.
- World Health Organization. (1992). *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. Geneva: World Health Organization.
- Yasan A, Guzel A, Tamam Y et al (2009). Predictive factors for acute stress disorder and posttraumatic stress disorder after motor vehicle accidents. *Psychopathology* 42:236-241.
- Yule W, Bolton D, Udwin O et al (2000). The long-term psychological effects of a disaster experienced in adolescence: I: The incidence and course of PTSD. *Journal of Child Psychology and Psychiatry* 41:503-511. Doi: 10.1111/1469-710.00635
- Zehnder D, Meuli M, Landolt MA (2010). Effectiveness of a single-session early psychological intervention for children after road traffic accidents: A randomised controlled trial. *Child and Adolescent Psychiatry and Mental Health* 4:7.



Muzaffarabad, Pakistan (Nov. 1, 2005) – U.S. Army 1st Lt. Tory Marcon, assigned to the 212th MASH unit, helps a Pakistani child drink a powered milkshake from a Meals Ready-to-Eat (MRE) in Muzaffarabad, Pakistan. The child has tetanus and the milkshake is the only food he can manage to swallow because of muscle spasms. The United States was participating in a multi-national assistance and support effort led by the Pakistani Government to bring aid to the victims of the devastating earthquake that struck the region on October 8th, 2005. U.S. Navy photo by Photographer's Mate 2nd Class Eric S. Powell

Appendix F.4.1

PERITRAUMATIC DISTRESS INVENTORY-CHILD*

Please complete the sentences below by checking (✓) the boxes corresponding best to what you felt during and immediately after the event that took you to the hospital. If the sentence doesn't apply to how you felt, check the box "not true at all."

	Not true at all	Slightly true	Somewhat true	Very true	Extremely true
1. I felt helpless, overwhelmed	0	1	2	3	4
2. I felt sadness and grief	0	1	2	3	4
3. I felt frustrated or angry I could not do more	0	1	2	3	4
4. I felt afraid for my safety	0	1	2	3	4
5. I felt guilty	0	1	2	3	4
6. I felt guilty of my emotions, of the way I felt	0	1	2	3	4
7. I worried for the safety of others (my parents, brother(s), sister(s), friends...)	0	1	2	3	4
8. I had the feeling I was about to lose control of my emotions, of no longer controlling what I was feeling	0	1	2	3	4
9. I felt like I needed to urinate (pee), to defecate (poop)	0	1	2	3	4
10. I was horrified, frightened	0	1	2	3	4
11. I sweated, shook and my heart pounded or raced	0	1	2	3	4
12. I felt I might pass out	0	1	2	3	4
13. I thought I might die	0	1	2	3	4

*Slightly modified; with permission from Dr Alain Brunet <http://www.info-trauma.org/flash/media-e/triageToolkit.pdf>

The total score is calculated by adding up ratings for all the items. Higher scores indicate increased risk for PTSD. In adults, a score <7 indicates no need for monitoring; a score >28 indicates immediate care and follow-up is needed; a score between 7 and 28 warrants follow up after a few weeks (Guardia et al, 2013). Bui et al (2011) provides further psychometric data.

Appendix F.4.2

PERITRAUMATIC DISSOCIATIVE EXPERIENCES QUESTIONNAIRE-CHILD*

Thank you for answering the following questions by checking (✓) the answer that best describes what happened to you and how you felt *during* _____ *and just after it*. If a question doesn't apply to what happened to you, please check "Not true at all".

1. At times, I lost track of what was going on around me. I felt disconnected, "blacked out," "spaced out" and didn't feel part of what was going on

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

2. I felt as if on autopilot and I ended up doing things that I hadn't actively decided to do.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

3. My sense of time was changed, as if things seemed to be happening in slow motion.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

4. What happened seemed unreal, as though I was in a dream or as if I was watching a movie, or as if I was in a movie.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

5. I felt as though I was a spectator, as though I was watching from above what was happening to me, as if I were observing from outside.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

6. There have been times in which the way I perceived my body was distorted or altered. I felt disconnected from my own body or it seemed bigger or smaller than usual.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

7. I felt that things happening to others also happened to me like, for example, feeling in danger while I wasn't really in danger.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

8. I was surprised to find afterwards that a lot of things happened at the time that I was not aware of, especially things I ordinarily would have noticed.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

10. I was disoriented, that is, at times I was not certain about where I was or what time it was.

1	2	3	4	5
Not true at all	Slightly true	Somewhat true	Very true	Extremely true

*Slightly modified; with permission from Dr Alain Brunet <http://www.info-trauma.org/flash/media-e/triageToolkit.pdf>

The total score is calculated by summing all the items. Elevated scores indicate increased risk for PTSD. Bui et al (2011) provides further psychometric data.

Appendix F.4.3

SELF-DIRECTED LEARNING EXERCISES AND SELF-ASSESSMENT

- Interview a child or adolescent who has been exposed to a psychologically traumatic event.
- Write a letter to the family doctor or referring agent summarizing the above case (formulation), including a provisional diagnosis and a management plan (as per Chapter A.10).
- What are the differences in diagnostic criteria between PTSD and ASD? (for answer, see Table F.4.1)
- Write a short essay about the factors that increase the likelihood of PTSD in refugee children (for answer, see page 12).
- List the 5 groups of symptoms that can be found in individuals who have experienced a traumatic event (for answer, see Table F.4.1)
- List some of the components of trauma-focused cognitive behavioral therapy (for answer, see Box in page 20).

MCQ F.4.1 *What is the first line treatment for posttraumatic stress disorder in children?*

1. Critical incident debriefing
2. Tricyclic antidepressants
3. Selective serotonin reuptake inhibitors
4. Beta blockers
5. Trauma-focused cognitive behavioral therapy

MCQ F.4.2 *Which one of the answers below is true regarding posttraumatic stress disorder in children under 6 years of age?*

1. It occurs only after 6 or more months following the trauma
2. It usually involves feeling that the future will be cut short
3. Re-experiencing (e.g. repetitive play) may not be distressing to the child
4. It rarely involves nightmares of the trauma
5. It often involves self-destructive behaviors

MCQ F.4.3 *Which one of the treatments listed below administered immediately after the traumatic event has been found to reduce the development of PTSD?*

1. Critical incident debriefing,
2. Benzodiazepines
3. Psychological first aid
4. Sodium valproate
5. Exposure-based intervention started in the emergency department.

MCQ F.4.4 *Critical incident debriefing for victims of a traumatic event should:*

1. Not be provided systematically
2. Be provided but only in case of very severe traumatic events
3. Be provided but only by trained personnel
4. Be provided but only for people exposed to repeated traumatic events
5. Be provided in all cases.

ANSWERS TO MCQS

- MCQ F.4.1 Answer: 1 (see page 19).
- MCQ F.4.2 Answer: 3 (unlike in adults, re-experiencing the event may not be distressing in children under the age of 6).
- MCQ F.4.3 Answer: 5. Recent data suggest that a 3-session exposure-based intervention started in the emergency department within 12 hours of a traumatic event may be helpful in decreasing rates of PTSD among adults (Rothbaum et al, 2012), however, no data are yet available on children and adolescents (page 16).
- MCQ F.4.4 Answer: 1. Critical incident debriefing, which requires individuals to discuss details of the trauma—sometimes in a group setting—has been found to provide very little or no benefit (Australian Centre for Posttraumatic Mental Health, 2013). Some data in adults suggest that group debriefing increases PTSD symptomatology and may even increase rates of PTSD (Rose et al, 2002; van Emmerik et al, 2002). Data from two randomized controlled trials among children revealed that debriefing was not superior to usual care in reducing rates of PTSD or other negative outcomes including behavioral problems, depression or anxiety (Stallard et al, 2006; Zehnder et al, 2010). Thus while children and adolescents in distress or seeking assistance should be offered the opportunity to ventilate individually about the trauma if they wish to do so, unrequested debriefing (in particular in a group setting) is not recommended.