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Published in:
Journal of Child Psychology and Psychiatry and Allied Disciplines

DOI:
[10.1111/1469-7610.00612](https://doi.org/10.1111/1469-7610.00612)

2000

[Link to publication](#)

Citation for published version (APA):
Perrin, S., Smith, P., & Yule, W. (2000). Practitioner Review: Assessment and treatment of PTSD in children and adolescents. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 41(3), 277-289.
<https://doi.org/10.1111/1469-7610.00612>

Total number of authors:
3

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Practitioner Review: The Assessment and Treatment of Post-traumatic Stress Disorder in Children and Adolescents

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Post-traumatic Stress Disorder (PTSD) is a syndrome defined by the intrusive re-experiencing of a trauma, avoidance of traumatic reminders, and persistent physiological arousal. PTSD is associated with high levels of comorbidity and may increase the risk for additional disorders over time. While controversies remain regarding the applicability of the PTSD criteria to very young children, it has proved to be a useful framework for guiding assessment and treatment research with older children and adolescents. This article presents an overview of the literature on the clinical characteristics, assessment, and treatment of PTSD in children and adolescents.

Keywords: Assessment, diagnosis, distress, Post-traumatic Stress Disorder, stress, trauma.

Abbreviations: CBT: cognitive behavioral treatment; EMDR: eye movement desensitization and reprocessing; PTSD: Post-traumatic Stress Disorder; SUDS: subjective units of distress.

Introduction

Trauma has long been recognized as playing an important role in the development of mental disorders. However, it was only after a persisting triad of symptoms (re-experiencing, avoidance, and hyperarousal) were better documented in Vietnam veterans and rape victims in the 1970s, that the diagnostic entity known as Post-Traumatic Stress Disorder (PTSD) came to be formally recognized. Since its inclusion in DSM-III (American Psychiatric Association, 1980), there has been a surge of interest in the disorder both in the mental health community and beyond. Numerous scientific journals, professional societies, websites, and advocacy groups have emerged that are entirely devoted to trauma and its effects. A computerized literature search using the acronym “PTSD” alone produces more than 3000 citations. The dissemination of so much information about trauma and PTSD has had a demonstrable impact upon the legal system, the military and rescue services, and public consciousness. The terms “stress reaction”, “traumatized”, and even “flashback” have all entered the domain of public discourse. All of this has happened despite long-standing concerns about the validity of the diagnostic criteria, their applicability to many trauma survivors, and even the appropriateness of applying a psychiatric label to traumatic reactions (cf. O’Donohue & Elliot, 1992).

Unlike the majority of disorders in the DSM, the PTSD criteria include an aetiological agent—the trauma. Moreover, the criteria are presented in such a way as to suggest that PTSD is a *normal* reaction to an abnormal event. Not surprisingly then, we find two widely held beliefs: (1) trauma *causes* PTSD; and (2) the disorder could happen to anyone. However, there is considerable evidence to dispute both of these assertions (Yehuda &

McFarlane, 1995). First, the majority of individuals exposed to a trauma do not develop the disorder. DSM-IV cites prevalence rates ranging from 3% to 58% (American Psychiatric Association, 1994). Furthermore, while PTSD is not *rare* relative to other disorders in the population (1%–14% lifetime; American Psychiatric Association, 1994), it is certainly less prevalent than would be expected given that traumatic events affect anything from 40% to 70% of the population (Breslau, Davis, Andreski, & Peterson, 1991). Thus, at present, we can only say that trauma is necessary but not sufficient to cause PTSD.

Second, the adult literature strongly suggests that the development of PTSD cannot be reliably predicted from the severity of the trauma itself (Breslau & Davis, 1987; Yehuda & McFarlane, 1995). The picture in children is less clear, with some studies suggesting no relationship between the objective characteristics of the trauma and the risk for PTSD (Earls, Smith, Reich & Young, 1988) and others suggesting the opposite (see Foy, Madvig, Pynoos, & Camilleri, 1996). This leaves open the possibility that the person’s subjective experience of the event is at least as important as any objective characteristics of the trauma (Rachman, 1980; Foy et al., 1996). This possibility is reflected in the newest revision of the PTSD criteria in DSM-IV (see below).

Beyond the role trauma plays in the development of PTSD, concerns about the validity of the diagnostic criteria have also been raised over the years. Despite repeated revisions, the PTSD criteria have never been particularly sensitive to the effects of trauma in very young children or to the long-term effects of sexual and physical abuse. With regard to young children, Scheeringa, Zeanah, Drell, and Larrieu (1995) have proposed an alternate set of PTSD criteria which are now under investigation, but are not widely known (see below). Likewise, Herman (1992) has proposed a new diagnostic category intended to capture those effects PTSD does not: Disorders of Extreme Stress Not

Otherwise Specified (DESNOS). While the DESNOS criteria capture many of the associated features of PTSD and the long-term effects of sexual abuse (cf. Pelcovitz et al., 1994), its inclusion in future versions of the DSM is in no way guaranteed.

In summary, despite all of the concerns raised about the validity of the PTSD criteria, there is a growing body of evidence suggesting that it is in fact an "abnormal reaction to an abnormal event" involving a complex interaction of biological, psychological, and social causes (Yehuda & McFarlane, 1995). Moreover, whatever the limitations of the diagnostic criteria, they are relevant to the experiences of many traumatized individuals, including children. Indeed, the PTSD clusters of intrusion, avoidance, and arousal have been found repeatedly in young people of different cultures following their exposure to war (Arroyo & Eth, 1985; Kinzie, Sack, Angell, Manson, & Rath, 1986; Saigh, 1989a, 1991), natural calamities (Earls et al., 1988; Frederick, 1985a; Galante & Foa, 1986; Goenjian, 1993; Green et al., 1991; Lonigan, Shannon, Finch, Daugherty, & Saylor, 1991; McFarlane, 1987; Milne, 1977; Newman, 1976), man-made disasters (Handford et al., 1986; Terr, 1979, 1983; Yule, 1992), violence (Malmquist, 1986; Pynoos & Nader, 1988; Schwarz & Kowalski, 1991), sexual abuse (Goodwin, 1988; McLeer, Deblinger, Henry, & Orvaschel, 1992; Wolfe, Gentile, & Wolfe, 1989), and serious medical illness (Nir, 1984; Stuber, Nader, Yashuda, Pynoos, & Cohen, 1991). Moreover PTSD as a diagnostic framework has led to the development of promising psychosocial treatments for children and adults as well as pharmacological treatments for adults (Foa & Meadows, 1997; Saigh, 1992; Shalev, Bonne, & Eth, 1996; Solomon, Gerrity, & Muff, 1992).

The purpose of this paper is to provide the reader with an overview of the clinical characteristics, assessment, and treatment of PTSD in children and adolescents. Readers interested in a more complete review of the epidemiology of PTSD in children should see Saigh, Green, and Korol (1996). Reviews of the various etiological models put forward for PTSD can be found in Freidman, Charney, and Deutch (1995), Foy et al. (1996), and Yule (1999). Readers may also want to familiarize themselves with the practice parameters for childhood PTSD published by the American Academy for Child and Adolescent Psychiatry (1998).

Clinical Characteristics and Associated Features

Clinical Presentation

Drawing upon the available literature and our experience with child and adolescent survivors of the *Herald of Free Enterprise* car ferry sinking (Yule & Williams, 1990), the sinking of the cruise ship *Jupiter* (Yule, 1992; Yule, Udwin, & Murdoch, 1990), the war in the Former Yugoslavia (Smith, Yule, Perrin, & Schwarz, 1996), and serious road traffic accidents in Britain (Perrin, Yule, & Smith, 1996), we have found a number of reactions that are common in traumatized children and adolescents and which can help place the DSM and ICD-10 criteria for PTSD in context.

Children of all ages who are severely affected by a traumatic event are often troubled by repetitive and intrusive thoughts about the trauma (re-experiencing). Such thoughts can occur at any time but particularly when the children are otherwise quiet or trying to fall

asleep. At other times, vivid recollections are triggered off by reminders in their environment or intense emotional states. The manner in which the child re-experiences the event and manifests distress is likely to change with age and maturity, becoming more adult-like and closer to the DSM description of the disorder (Pynoos, Steinberg, & Wraith, 1995). For example, there is some evidence that very young children do not suffer from visual flashbacks and may not show dissociative phenomenon, numbing, or traumatic amnesia (Terr, 1985), although this may be due to the difficulty in eliciting symptoms like numbing from young children (Frederick, 1985a). The presence of these symptoms in young children is the subject of much debate in the literature (cf. Eisen, Goodman, Qin, & Davis, 1998; Perry, Pollard, Blakley, Baker, & Vigilante, 1995; Putnam, 1997; Scheeringa & Zeanah, 1995; Spiegel, 1984). What is clear is that very young children often display signs of re-experiencing through vivid re-enactment of the trauma in drawings, stories, and play (Scheeringa & Zeanah, 1995; Scheeringa et al., 1995).

Fears of the dark, bad dreams, nightmares, and waking through the sleep cycle are particularly prevalent in young children (Benedek, 1985), especially within the first few weeks of the event. Children under 5 to 6 years of age may exhibit fears and anxiety that are not directly related to the trauma (e.g. fears of monsters) (Drell, Siegel, & Gaensbauer, 1993). Separation anxiety is also common in young children and may even be found among teenagers. For the first few days children may not want to let their parents out of sight, even reverting to sleeping in the parents' bed. Many children become much more irritable and angry with parents and peers alike and aggressive behaviors may be seen.

While some child survivors often experience a pressure to speak about the trauma, paradoxically, they also find it very difficult to talk with parents and peers. Often they do not want to upset the adults and so parents may not be aware of the full extent of their children's suffering. Likewise, children may be concerned about feeling different from peers and hold back on discussions of the trauma. Peers may also hold back from asking what happened lest they upset the child further. The survivor often experiences this as a subtle form of rejection.

A number of cognitive changes have been observed in traumatized children and adolescents. They often report difficulties in concentration, especially in schoolwork (cf., Rust & Troupe, 1991). Others may develop memory problems both in mastering new material and in remembering previously learned skills. They may become very alert to danger in their environment and be adversely affected by reports of other related traumatic events. Survivors often learn that life is quite fragile, particularly if they sustained any permanent injury or witnessed a death. This can lead to a sense of a foreshortened future that is often expressed as a loss of thoughts about the future. Life priorities may also change in response to trauma; some feel that they should live each day fully and not plan for the future, whereas others realize that they have been too concerned with materialistic or petty matters and resolve to rethink their values, frequently taking on the image of themselves as a helper to others. Such ways of thinking may reflect a change in the young person's "assumptive world" (Janoff-Bulman, 1992).

Given the many manifestations of traumatization, it is not surprising that rates of comorbidity with PTSD are quite high (Goenjian et al., 1995). Many children develop fears associated with specific aspects of the traumatic

event, which can engender phobic levels of avoidance (specific and social phobias). Others find themselves extremely nervous all the time and have difficulty controlling worries about non-trauma-related situations (generalized anxiety disorder). Panic disorder also is not unusual, although the appearance of panic attacks is sometimes considerably delayed. Many experience "survivor guilt" about others dying, or being seriously injured, or think they should have done more to help others to survive. Complicated bereavement and pathological grief reactions are often found when a loved one has died and such reactions are negatively influenced by PTSD symptoms (Harris-Hendriks, Black, & Kaplan, 1993; Pynoos, 1992). Specifically, the conditioned anxiety response to reminders of a traumatic loss makes normal grieving rituals extremely unpleasant, and they may be avoided all together. At worst, PTSD can effectively block the person from grieving at all, and at best often prolongs the grieving process long beyond what would be considered normal.

Comorbid behavior disorders are somewhat less common than anxiety and depressive disorders but are not unusual. Some have suggested that the behavior disorders develop because PTSD lessens the child's ability to control aggressive and angry impulses (Steiner, Garcia, & Mathews, 1997). Others suggest that behavior disorders are more likely to occur as a consequence of physical abuse (Malmquist, 1986; Pelcovitz et al., 1994). Adolescent survivors often report high levels of depression, some becoming clinically depressed, having suicidal thoughts, and taking overdoses in the year after a disaster. Others have noted that adolescents exposed to repeated trauma are also likely to exhibit dissociative features, self-injurious behaviors, aggression, and substance abuse (Goodwin, 1988; Terr, 1991).

Summary. As can be seen from the above, young people react to traumatic events in a variety of ways, which often leads to multiple diagnoses being applied. The appropriateness of multiple diagnoses in traumatized individuals is problematic because of the overlap between the PTSD criteria and other disorders. As such, it is important that clinicians be very familiar with the PTSD criteria and its many associated features.

Diagnostic Definitions

DSM

The criteria for PTSD in DSM-IV (American Psychiatric Association, 1994) (see Table 1) differ in significant ways from descriptions of the disorder in previous versions of the manual. In particular, Criterion A has been greatly clarified such that more emphasis is placed on the threatening nature of the traumatic event to the person, rather than it being outside the range of normal human experience as in DSM-III. The ways in which several symptoms manifest themselves in children are also more clearly defined. Similar to DSM-III, DSM-IV notes that children's re-experiencing can be expressed as repetitive and thematic play, as nightmares with or without traumatic content, and through re-enactment of the trauma. Interestingly, DSM-IV no longer specifies "loss of previously acquired developmental skills" as a potential avoidance item and this may affect case identification (Ribbe, Lipovsky, & Freedy, 1995).

DSM-IV specifies three subtypes of PTSD: *Acute*, *Chronic*, and *Delayed Onset*. The Acute Type is assigned

to a disorder that has been present between 1 and 3 months, and the Chronic Type for durations greater than 3 months. Delayed Onset Type is given when a minimum of 6 months elapses between the traumatic event and the onset of the first PTSD symptoms.

The Scheeringa Criteria for Very Young Children

Based on an analysis of 20 published cases of traumatized children, Scheeringa et al. (1995) have suggested an alternate set of criteria for infants and young children (< 4 years of age). Their suggestions are based on the DSM-IV criteria for PTSD but are more sensitive to the developmental abilities of young children. They are currently under investigation and not in widespread use.

Under Criterion A, Scheeringa et al. suggest that the child need only have experienced a traumatic event, not the intense fear at the time of the event that DSM-IV requires. In addition, only one of the following re-experiencing symptoms is required (DSM-IV requires at least one): "(1) Post-traumatic play: compulsively repetitive, represents part of the trauma, fails to relieve anxiety and is less elaborate and imaginative than usual play; (2) Play re-enactment: represents part of the trauma, but lacks the monotonous repetition and other characteristics of post-traumatic play; (3) Recurrent recollections of the traumatic event other than what is revealed in play and which is not necessarily distressing; (4) Nightmares: may have obvious links to the trauma or be of increased frequency with unknown content; (5) Episodes with objective features of a flashback or dissociation" (Scheeringa et al., 1995, p. 195).

In terms of avoidance (Criterion C), Scheeringa et al. (1995) suggest that only one of the following symptoms are needed (DSM-IV requires three): "(1) Constriction of play ... [even in the presence of] post-traumatic play or play re-enactment; (2) Socially more withdrawn; (3) Restricted range of affect; (4) Loss of acquired developmental skills, especially language regression and toilet training" (p. 195).

Persistent symptoms of increased arousal (DSM-IV Criterion D) is changed to the following: "(1) Night terrors; (2) Difficulty going to sleep which is not related to being afraid of having nightmares or a fear of the dark; (3) Night-waking not related to nightmares or night terrors; (4) Decreased concentration: marked decrease in concentration or attention span compared to before the trauma; (5) Hypervigilance; (6) Exaggerated startle response" (p. 195).

A new cluster of symptoms is introduced, of which only one is needed: "(1) New aggression; (2) New separation anxiety; (3) Fear of toilet training alone; (4) Fear of the dark; (5) Any new fears of things or situations not obviously related to the trauma" (p. 195). Finally, they suggest that the disturbance should be present for at least 1 month (same as DSM-IV) but omit the requirements related to impairment (Criterion F in DSM-IV).

ICD-10

PTSD is included in the 10th edition of the *International classification of diseases* (ICD-10) (World Health Organization, 1992), but by contrast to DSM is placed among the adjustment disorders. Also, its definition of the stressor criterion differs from the two-stage stressor criterion given in DSM. According to ICD-10:

Table 1
DSM-IV Criteria for Post-traumatic Stress Disorder

-
- A. The person has been exposed to a traumatic event in which both of the following have been present:
1. The person has experienced, witnessed, or been confronted with an event or events, that involve actual or threatened death or serious injury, or a threat to the physical integrity of oneself or others.
 2. The person's response involved intense fear, helplessness, or horror. Note: In children, it may be expressed by disorganized or agitated behavior.
- B. The traumatic event is persistently re-experienced in at least one of the following ways:
1. Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed.
 2. Recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content.
 3. Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those that occur upon awakening or when intoxicated). Note: In young children, trauma specific reenactment may occur.
 4. Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.
 5. Physiological reactivity upon exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event.
- C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by at least three of the following:
1. Efforts to avoid thoughts, feelings, or conversations associated with the trauma.
 2. Efforts to avoid activities, places, or people that arouse recollections of the trauma.
 3. Inability to recall an important aspect of the trauma.
 4. Markedly diminished interest or participation in significant activities.
 5. Feelings of detachment or estrangement from others.
 6. Restricted range of affect (e.g., unable to have loving feelings).
 7. Sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span).
- D. Persistent symptoms of increased arousal (not present before the trauma), as indicated by at least two of the following:
1. Difficulty falling or staying asleep.
 2. Irritability or outbursts of anger.
 3. Difficulty concentrating.
 4. Hypervigilance.
 5. Exaggerated startle response.
- E. Duration of the disturbance (symptoms in B, C, and D) is more than 1 month.
- F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- Specify if:
- Acute: If duration of symptoms is less than 3 months.
- Chronic: If duration of symptoms is 3 months or more.
- Specify if:
- With delayed onset: Onset of symptoms at least 6 months after the stressor.
-

[PTSD] arises as a delayed or protracted response to a stressful event or situation ... of an exceptionally threatening or catastrophic nature, which is likely to cause pervasive distress in almost anyone (e.g., natural or man-made disaster, combat, serious accident, witnessing the violent death of others, or being a victim of torture, terrorism, rape, or other crime) (p. 147).

Although ICD-10 lists symptoms similar to those in DSM-III-R, it emphasizes the presence of repetitive and intrusive memories as characteristic of the disorder, with the other symptom groupings being "common." Specifically, ICD-10 states:

A conspicuous emotional detachment, numbing of feeling, and avoidance of stimuli that might arouse recollections of the trauma are often present but are not essential for the diagnosis. The autonomic disturbances, mood disorder, and behavioural abnormalities are all contributory to the diagnosis but not of prime importance (p. 148).

ICD-10 specifies the same subtypes as DSM-IV but there are slight differences in the specifications of symp-

tom duration. As can be seen, there are subtle but important differences between the diagnostic criteria in ICD and DSM, and in our experience it is somewhat more likely for traumatized individuals to meet criteria for PTSD under ICD-10 than DSM-IV.

Assessment

Semistructured Interviewing

A proper assessment of PTSD requires a face-to-face interview with the child where they are directly asked about PTSD symptoms (Nader & Pynoos, 1989; Terr, 1979). Information is also obtained from parents because children may not report the full range of PTSD symptoms (Nader & Fairbanks, 1994). While time-consuming, a semistructured diagnostic interview based on DSM-IV criteria, with parent and child versions, is recommended for the assessment of PTSD. There are numerous semistructured PTSD interviews available and it is beyond the scope of this article to review them here (see March, 1998; Nader, 1997). Most have no published validity and reliability data. At present two interviews have demonstrated reliability and validity: the Schedule for Affective Disorders and Schizophrenia for School-Age Children—Present and Lifetime Version, PTSD Scale

(K-SADS-PL: Kaufman et al., 1997) and the Childhood PTSD Interview–Child Form (Fletcher, 1997). In our experience, use of the PTSD modules from most structured diagnostic interviews can be administered in less than 45 minutes, including both parent and child versions.

As stated above, many of the DSM's PTSD criteria are not developmentally sensitive and thus semistructured interviews may have only limited usefulness for young children. It should be recognized also that the interview is itself a potentially threatening experience, requiring considerable skill and sensitivity on the part of the interviewer, and a firm understanding of child development, in order to maintain its therapeutic nature. The establishment of rapport and a safe environment where the child can discuss painful and angry feelings are very important to acquiring accurate information. The use of any semistructured interview must always be placed within this context.

Interviewing the Parents

It is helpful to meet with the parents separately from the child. During this portion of the interview the following information is of relevance to the assessment of PTSD: (1) family psychiatric history and any history of marital conflict, separations, or abuse; (2) the child's developmental history, including temperament, general mood, interests, prior trauma, and performance in school prior to the current trauma; (3) the parents' account of the trauma and its aftermath; (4) treatment history post-trauma; (5) the child's current functioning; and (6) any parental reactions to the trauma or expectations about how the child should be reacting to the trauma.

It is important to note that parents often over-emphasize behavioral symptoms while remaining unaware of particular fears or negative emotions (Nader & Pynoos, 1989). An additional problem with parental reports is that parents may be inclined to minimize the effect of trauma on the child or themselves and thus under-report symptoms (Sternberg et al., 1993). Given the important mediating role of parental reactions on the child's traumatic response (McFarlane, 1987), a brief assessment of the parents' mental state is essential.

Interviewing the Child

For older children and adolescents the general structures of the interview follows that for the parents with only a few exceptions. In general it is helpful to have the child recall as much of the trauma as possible without any prompting from the interviewer. Once the child has had a chance to tell the story in their own way the interviewer can go back with prompts and additional questions (e.g., What did you think/hear/feel in your body when the trauma occurred?). Placing the trauma in some context (e.g., it was summertime, a weekend, on the way to a friend's house) can help the child with recall. Every effort should be made to track the course of symptoms from immediately after the trauma to the present (e.g., How was the first night after the trauma? When was the first nightmare? How long before you got back to school?). Symptoms not volunteered should be asked about directly. In addition, the child should be asked about feelings of guilt and others' reactions to them since the trauma, focusing on any feelings of being different, permanently damaged, misunderstood, or shunned.

Finally, the child should be asked to describe any thoughts they have for the future.

Very young children may have difficulty with direct or formal questioning. Pynoos and Eth (1986) have developed a technique for interviewing young children shortly after a traumatic or violent event that has broad applicability to all types of trauma. The interview is a focused but free discussion of the trauma. This is accomplished by: (1) communicating to the child that the interviewer has experience with talking to children about their traumatic experiences; (2) giving the child pencil and paper and asking them to draw whatever they would like but something about which they can tell a story; (3) encouraging the child to elaborate (verbally or through drawing) on the story; and (4) explicitly linking some aspect of the child's drawing to some part of the trauma to facilitate emotional release. Once the child is ready to proceed emotionally, they are asked to draw the traumatic event, describing its sensory aspects, worst moments, and how they coped. The child is also encouraged to describe any thoughts about how they could have remedied the situation, feelings of blame, desire for retaliation and fears of counter-retaliation, and feelings of control. The therapist also inquires about previous traumas, recent dreams remembered, concerns about the future, and current stressors.

In the final stage of this interview (and arguably any trauma interview) it is important to have the child review and summarize the session, normalizing their reactions to the traumatic event, and linking the trauma to the original drawing or story and presenting complaints (Pynoos & Eth, 1986). The therapist may provide information about the expected course of the disorder generally and specifically to the child. The latter is done by helping the child identify fear-eliciting traumatic reminders and the child's potential reactions to these outside of therapy. It is important to bolster the child's self-esteem and the therapist may remark on the child's courage during the trauma and upon interview. Finally, the child is asked to describe any helpful or disturbing aspects of the interview process, with the therapist expressing their respect for the child's views and the privilege of having shared the interview experience with them.

Self-report Instruments

Over the last 10 years quite a few self-report instruments have been developed to assess PTSD in children. The majority have been adapted from adult questionnaires, usually having been developed for research purposes and as such have little normative data supporting their use. A comprehensive review is beyond the scope of this paper (see March, 1998; McNally, 1991; Nader, 1997). The following measures are among the most widely used, possess the best psychometric properties, and are readily available.

Impact of Event Scale (IES; Horowitz, Wilner, & Alvarez, 1979). The IES is the most widely used self-report measure of PTSD in adults and has been adapted for children. The IES assesses the cardinal symptoms of intrusion and avoidance and has been used with children 8 years of age and older (Yule & Udwin, 1991; Yule & Williams, 1990). Various cutoff scores for PTSD have been reported in the literature, however, the authors have found a cutoff score of 30 to maximize both sensitivity and specificity with respect to children and adolescents involved in road traffic accidents and a shipping disaster.

Yule et al. (1990) found that some IES items were misunderstood by children and developed a child-friendly, 13-item version. This new version includes fewer intrusion and avoidance items but does include arousal items. It has excellent reliability and good concurrent and predictive validity. Both the 15-item and 13-item versions have proved useful in the assessment of post-traumatic stress when used in conjunction with measures of childhood anxiety, fear, and depression (Stallard & Law, 1993; Yule & Udwin, 1991). Such measures include the Birlson Depression Inventory (Birlson, 1981), the Children's Manifest Anxiety Scale (Reynolds & Richmond, 1978), and the Fear Survey Schedule for Children (Ollendick, 1983), all of which have demonstrated validity and reliability.

Children's Post-Traumatic Stress Reaction Index (CPTS-RI; Frederick, 1985b). The 20-item CPTS-RI is the most widely used measure of childhood PTSD. In a number of investigations (Nader, Pynoos, Fairbanks, & Frederick, 1991; Pynoos et al., 1987, 1993; Pynoos & Nader, 1988), the CPTS-RI has been shown to have good internal consistency and to relate well to clinical judgement of PTSD severity (Yule & Udwin, 1991). Its composite score indicates the severity of PTSD symptoms, however, not all of the DSM-III-R or IV symptoms are covered. The CPTS-RI may also be used as a semistructured interview by reading the questions aloud to the child. No lower age-limit is given for its use, but in the self-report format it is probably best suited to children 8 years of age and older.

Children's Post-traumatic Stress Disorder Inventory (Saigh, 1989a). This is a widely used self-report measure with five subscales: exposure, re-experiencing, avoidance, hyperarousal, and degree of distress. In its latest version, it provides comprehensive coverage of all DSM-IV symptoms, and has high inter-rater and test-retest reliability, correlates well with clinical diagnosis, and is sensitive and specific to PTSD and its subtypes (March, 1998; Saigh, 1988, 1989a). Again no lower age limit is given and the measure is probably best suited to children 8 years of age and above.

Unfortunately, little effort has been directed at developing standardized measures suitable for children less than 8 years of age. Inventories relying on parent and clinician ratings abound, but children under 8 years can often give adequate verbal responses when read questions aloud from existing standardized measures. For example, Richters, Martinez, and Valla (1990) developed a 40-item self-report measure of PTSD that utilizes pictures and a visual thermometer rating scale in response to questions read aloud by the interviewer. The authors state that the measure is suitable for children under 6 years of age. Unfortunately, no reliability or validity data are currently available.

Other Sources of Information

Physiological measures of arousal, such as galvanic skin response, heart rate, and respiration, may help validate self-reports and provide useful information in nonverbal children. However, they have not been validated for clinical purposes, are expensive to use, and are not widely available. By contrast, simple "thought-action-feeling" diaries are inexpensive, extremely useful in a functional assessment of anxiety, but will be of little use for the one-off interview.

Finally, all documented information (e.g., medical records, eyewitness, news, and police/rescue reports), which may help delineate the sequence of events during the trauma or reveal symptoms not readily admitted or remembered, should be gathered. The assessment of impairment is often aided by review of available medical and school reports.

Summary. A comprehensive assessment of PTSD in children should include interviews with the parents and the child, preferably in a semistructured format with direct questioning regarding PTSD symptoms. Self-report measures can be used to screen for PTSD, anxiety, and depression in children over 7 years of age but they are not a substitute for a clinical interview. False positives and false negatives do occur when relying on screening measures in the best of circumstances, and are more likely to occur when the measures are used inappropriately (e.g., not making sure the child understands the questions). As regards very young children, the interview with the child will require drawing materials and toys to help elicit thoughts and feelings about the trauma. Parents should be interviewed with regard to the PTSD criteria and these may be supplemented with the Scheeringa et al. (1995) criteria for very young children.

Differential Diagnosis

It must first be established that the child has experienced a traumatic event that *preceded* the onset of the symptoms. If the stressor event is "traumatic" as defined by DSM-IV, but the child does not have the requisite number of PTSD symptoms, an Adjustment Disorder may be the correct diagnosis. When the child has met the stressor *and* symptom criteria for PTSD, but the symptoms developed and resolved within 1 month of the event, the proper diagnosis is Acute Stress Disorder (American Psychiatric Association, 1994). Of course, having experienced a traumatic event, not all children develop intrusive recollections but some still show anxiety symptoms that are specific to the traumatic event. For example, children involved in road traffic accidents often exhibit anxiety while riding in cars and may try to avoid doing so, but have no re-experiencing phenomenon. In such cases, a diagnosis of Specific Phobia (Cars) should be considered. When a trauma has occurred and clearly precedes the onset of symptoms for other disorders (e.g., depression) and not PTSD, these disorders should be diagnosed instead of PTSD.

In contrast to the above situations, when the stressor does not meet criteria for a "traumatic event" (e.g., divorce), but symptoms of upset or PTSD are present, then a diagnosis of Adjustment Disorder should be considered. In the specific case of the nontraumatic death of a loved one, and where upset and recollections of the loved one are present, a diagnosis of Bereavement should be considered.

As mentioned above, comorbidity with PTSD is common and may reflect symptom overlap among the different disorders. However, additional diagnoses can and should be made in the presence of PTSD if the child meets sufficient criteria for an additional disorder. Difficulty arises, for example, where the focus of an anxiety problem is a particular aspect of the trauma that has now generalized to other situations (e.g., a fear of car accidents generalizing to a fear of travelling by bus or plane). In such situations, an additional anxiety diagnosis

is usually not warranted unless it persists after the PTSD has resolved, or has reached sufficient levels of severity/impairment to merit a separate and distinct diagnosis.

It is sometimes the case that PTSD symptoms may be mistaken for other disorders. Chronic hyperarousal can often present as motoric hyperactivity and poor impulse control, and, along with intrusive thoughts, can interfere with attention and concentration (Glod & Teicher, 1996). Although ADHD is a possible outcome of childhood traumatization there is little evidence to suggest that this is common. Of course, trauma may exacerbate pre-existing symptoms of ADHD. In addition, it is not unusual for children with chronic PTSD to display temper tantrums, school refusal, parental defiance, hostility, and even aggression. Although such symptoms may suggest diagnoses of Oppositional Defiant Disorder or Conduct Disorder, they often reflect high levels of irritability, oversensitivity, and extreme avoidance behaviors. Likewise, repeated traumatization may lead to dissociative features, self-injurious and aggressive behaviors, and substance abuse (Goodwin, 1988; Terr, 1991). While such symptoms are suggestive of Borderline Personality Disorder in the adolescent, it may be preferable to defer such a diagnosis until after the PTSD has remitted (Goodwin, 1985).

Finally, a flashback involves an intense re-experiencing of the traumatic event and is usually accompanied by some dissociation from the immediate environment, and, on occasion, some acting out of the traumatic event. This stands in sharp contrast to very distressing recollections that occur more frequently in PTSD sufferers and do not involve dissociation or acting out. Flashbacks may also be distinguished from intrusive and unwanted thoughts that are unrelated to a traumatic event which occur in Obsessive-Compulsive Disorder or schizophrenia. Differentiation of flashbacks from perceptual disturbances, like hallucinations, is made in the context of the whole symptom profile and knowledge of the patient's history. Patients with schizophrenia may have traumatic experiences and can suffer from flashbacks.

Treatment

Cognitive Behavioral Treatment (CBT)

CBT is the most frequently studied psychosocial treatment and has been subjected to the greatest number of rigorously controlled investigations for PTSD in adults (Foa & Meadows, 1997). In reviewing this literature, Foa and Meadows found that prolonged exposure treatments and those aimed at anxiety management (e.g., stress-inoculation training) are effective in reducing PTSD symptoms in adults.

To date, there have been only five controlled studies using CBT for post-traumatic distress in children: Berliner and Saunders (1996), Deblinger, Lippman, and Steer (1996), Cohen and Mannarino (1996, 1998), and Goenjian et al. (1997). In the first study, by Berliner and Saunders, 80 sexually abused children were randomized to either a traditional treatment group that addressed abuse issues through discussion, activities, games, and role-play, or to a treatment group using the same techniques plus relaxation, cognitive restructuring, and graduated exposure. Marked improvements were found in both groups across parent and child measures with no significant differences between groups. The addition of

cognitive-behavioural interventions did not improve the effectiveness of the more traditional group therapy.

By way of contrast, Deblinger et al. (1996) found group-administered CBT to be superior to traditional group therapy. One hundred sexually abused children were randomly assigned to either a community treatment control group or one of three trauma-focused CBT conditions: individual treatment, treatment with the parent, and treatment through the parent only. The two CBT treatments including the child were found to be superior to all other treatment conditions in reducing PTSD symptoms. Interestingly, the CBT condition involving both the parent and child also produced significantly more improvement in externalizing and depressive symptoms.

Cohen and Mannarino (1996, 1998) have conducted two controlled trials demonstrating the effectiveness of CBT. In the first study they randomly assigned 86 sexually abused preschoolers to either a trauma-focused CBT intervention for the child and parent together or to a nondirective supportive therapy condition involving the preschooler only. The CBT condition was markedly superior to the nondirective therapy in this sample of preschoolers, and the gains in the CBT group were maintained at 6- and 12-month follow-ups (Cohen & Mannarino, 1997). The authors replicated their findings (i.e., CBT superior to nondirective supportive therapy) in a subsequent randomized trial with 49 children aged 7 to 14 years (Cohen & Mannarino, 1998).

Finally, in a nonrandomized study Goenjian et al. (1997) compared CBT to no treatment for traumatized children following an earthquake in Armenia. Children in two of four schools near the earthquake epicenter received a school-based intervention involving group discussion about the trauma, relaxation and desensitization, grief work, and normalization of responses. Children in the remaining two schools were not treated. The school-based treatment was found to be superior to no treatment on self-report measures of PTSD and distress.

Several uncontrolled studies also provide support for the efficacy of CBT for children with PTSD. March, Amaya-Jackson, Murray, and Schulte (1998) tested the efficacy of an 18-week, group-administered CBT package for PTSD in 14 older children and adolescents who had suffered a single incident trauma. Eight of the 14 subjects (57%) were free of PTSD at the end of treatment and another 4 were free of PTSD at 6-month follow-up (an overall recovery rate of 86%). In an uncontrolled trial of a 12-session CBT program (comprising coping skills training, gradual exposure, and educative/preventative work) for 19 sexually abused children, Deblinger, McLeer, and Henry (1990) found that every major category of PTSD symptoms improved, with no child still meeting diagnostic criteria post-treatment. Finally, Saigh has produced a series (1987a,b, 1989a) of single-case, multiple-baseline studies demonstrating the effectiveness of prolonged imaginal exposure for children with PTSD arising from interpersonal violence and war.

Other Psychosocial Treatments

Eye movement desensitization and reprocessing (EMDR) (Shapiro, 1989) is a controversial treatment that employs saccadic eye movements during imaginal exposure to the traumatic event. The therapist moves his or her finger in front of the patient's eyes in a lateral

motion while the patient tracks the movement with their eyes only. At the same time, the patient holds the traumatic event in memory; it is not necessary for the patient to discuss the memory. This process is repeated until the memory produces less distress. There are a few uncontrolled case studies suggesting that EMDR may be effective for childhood PTSD (Coco & Sharpe, 1993; Greenwald, 1994; Muris & de Jonghe, 1996).

Regarding group treatments and crisis intervention, recent evidence from the adult PTSD literature is mixed (see Kenardy et al., 1996; Shalev et al., 1996), and these interventions have not been subjected to rigorous examination (Foa & Meadows, 1997). Only two non-randomized outcome studies have been conducted for children with PTSD. In the first, Galante and Foa (1986) found structured group therapy to produce significant teacher-rated improvements on the Rutter Questionnaire (Rutter, 1967) compared to no-treatment controls in a sample of children exposed to an earthquake. In the second, Yule (1992) found that children who attended group debriefing meetings after a shipping accident fared better on a range of outcome measures than children who were not offered such help. Additional evidence comes from Stallard and Law's (1993) uncontrolled trial of crisis debriefing showing significant improvements on standardized self-report measures in a small group of young children involved in a road traffic accident. The above studies are suggestive of a beneficial effect of group therapy focused on debriefing but more study is needed. It is important to note that negative effects of debriefing have been noted in the literature (Foa & Meadows, 1997).

Well-controlled investigations of non-exposure-based psychosocial treatments for PTSD (e.g., psychodynamic and family therapy) are extremely rare in adults and children (Foa & Meadows, 1997). However, these treatment approaches are not without some support. Brom, Kleber, and Defres (1989) randomly assigned 112 adults with PTSD to trauma desensitization, brief psychodynamic therapy, hypnotherapy, or to a wait-list condition. All of the treatment conditions were equally effective and superior to the wait-list control condition in reducing trauma-related intrusion and avoidance. In a randomized study of 43 sexually abused children, Scarvalone, Cloitre, and Difede (1995) found an interpersonal process, therapy group to be superior to a wait-list condition.

Pharmacological Treatments

Little is known about the pharmacological treatment of PTSD in children and adolescents and such treatments are usually used as an adjunct to psychosocial treatments (Terr, 1996). However, it is being increasingly recognized as a valuable part of a multidimensional treatment approach to chronic PTSD in adults (Sutherland & Davidson, 1994). In several controlled trials with adult PTSD patients (Davidson et al., 1993; Frank, Kosten, Giller, & Dan, 1988; Schestatzky, Greenberg, & Lerer, 1988), drugs with serotonergic action (TCAs, MAOIs, and SSRIs) have achieved the most positive effects, with the best results achieved after longer treatment trials (8 weeks or longer) (Sutherland & Davidson, 1994). While PTSD symptoms may be so intolerable or debilitating that pharmacotherapy may be needed, there is no evidence from the adult PTSD literature that pharmacotherapy alone is sufficient to cure PTSD (Shalev et al., 1996).

Many PTSD symptoms are thought to arise from excessive activity of the central adrenergic system, leading some clinicians to use adrenergic blocking agents, such as Propanolol and Clonidine (Sutherland & Davidson, 1994). In one of the few studies to directly approach this issue in children, Kinzie and Leung (1989) found that Clonidine helped reduce significantly symptoms of avoidance, startle responses, and trauma-related depression in children. Pynoos and Nader (1993) and Harmon and Riggs (1996) also provide preliminary data suggesting that Clonidine may reduce persistent arousal in traumatized children. Finally, in an uncontrolled, non-blind study, Famularo, Kinscherff, and Fenton (1988) found that Propanolol relieved arousal symptoms of children who were exposed to sexual assault. While the results of these studies are consistent with previous trials of Clonidine and Propanolol in adult combat veterans (see Kolb, Burris, & Griffith, 1984), the absence of placebo controls greatly limits the conclusions that can be drawn about the effectiveness of these drugs in children. Thus, at present there is very limited empirical support for the pharmacological treatment of PTSD in children.

Summary. Few treatment outcome studies have been carried out with children and adolescents with PTSD, thus it is difficult to make very firm treatment recommendations. However, it is widely accepted among clinicians and researchers working with children that effective treatments for PTSD should necessarily include both the parents and the child, psychoeducation about the nature of the disorder, some form of exposure work, and restructuring of dysfunctional cognitions arising from the trauma. There are several controlled and uncontrolled studies of CBT for children that provide preliminary support for this conclusion. In the next section, we provide an outline of a CBT for PTSD in children and adolescents.

A Cognitive-behavioral Treatment Program for Childhood PTSD

CBTs for PTSD, in the main, are based on a combination of classical and operant conditioning, and cognitive models of anxiety. The goals of treatment are the reduction of PTSD symptoms, the development of positive coping skills, and an increase in the individual's sense of control and wellbeing. Following assessment and establishment of a therapeutic alliance with the child and parents, the treatment can be broken down into four main components: (1) education/goal-setting, (2) coping skill development, (3) exposure, and (4) termination and relapse prevention.

Education and Goal-setting

Both parents and the child should be provided with information about the effects of trauma on all domains of functioning, with particular focus on normalizing the child's responses, and a rationale for treatment. Goals for treatment should be explicit and mutually agreed upon between the therapist, child, and parents. In this regard, we have found it very helpful if several questions are asked during the goal-setting phase of treatment: (1) How will you know when you (your child) are better? (2) What can you (your child) already do to cope with this problem? and (3) What do you (your child) need to learn to cope/feel better? Finally, the identification of specific,

measurable targets is essential (e.g., a 50 % reduction in intrusive thoughts, a 50 % increase in the use of coping skills when anxious).

Coping Skill Development

The child is trained to recognize “triggers” for anxiety to increase their sense of mastery and to reduce avoidance. However, the child should not be encouraged to stop all avoidance strategies until compensatory coping mechanisms in place. In this regard, a variety of coping skills can be taught to the child (i.e., relaxation, positive self-talk/imagery, and problem-solving). Thought-stopping techniques may occasionally be encouraged to control overwhelming thoughts that occur in school or at night. Finally, the child is assisted in developing a “SUDS” scale (for Subjective Units of Distress). This involves the development of numerical anchors for anxious distress to known triggers (0–no distress to 10—as upset as I have ever been). In very young children, a pictorial “fear thermometer” can be used as a visual analogue of the SUDS scale. The use of a SUDS scale is *essential* to all exposure-based treatments.

Exposure

At the core of CBT is the use of imaginal or in vivo exposure to facilitate emotional processing of traumatic memories (Keane, Zimmering, & Caddell, 1985; Rachman, 1980). The clinician assists the child to recall the event and re-experience all relevant thoughts and emotions in such a way that the distress can be mastered rather than magnified. This will depend foremost on the establishment of a safe and trusting environment in which the traumatic event can be remembered and discussed. Therapists must be prepared to ask children about the most difficult aspects of the traumatic experience. Young children may be asked to draw their experiences to facilitate emotional processing (Pynoos & Eth, 1986) and play may be used similarly (Misch, Phillips, Evans, & Berekowitz, 1993).

Exposure can rarely be done within the “therapeutic hour” and, as noted above, research suggests that longer sessions are associated with better outcomes. Generally, exposure sessions are done with the child alone, but very young children may be seen with a parent. The child should be made aware that they will be in control of how much they say at all times. Finally, the child should be as relaxed as possible prior to the onset of the exposure work. Use of muscle relaxation and SUDS ratings can help ensure the child is relaxed.

During imaginal exposure, the therapist prompts the child for SUDS ratings. Particular attention is paid to those aspects of the account which are poor in detail or would be expected to elicit high levels of distress from the child. The child is asked to elaborate verbally on any particularly distressing aspects of the memory (SUDS > 6) until the SUDS rating is reduced. When the child has finished their account of the trauma, they should be allowed to calm down. At this point, it is usually helpful to ask the child, “What was it like just now to tell the story?” Ample verbal praise should be given for their willingness to share their experiences. Again, the therapist prompts for a SUDS score. Should the child’s anxiety be high (e.g., SUDS > 6), they should be asked to engage in relaxation exercises, or be encouraged to keep talking

about their experience of talking. A session should never end with the child leaving in a high state of distress.

Generally speaking, discussions about the meaning of the event during the actual exposure work can divert attention from traumatic reminders and delays habituation. Discussions about the meaning of the trauma may be delayed until the anxiety is reduced. When the child is more relaxed it is helpful to look for evidence of self-blame, beliefs in the permanency of the traumatization (e.g., “I will never be the same”), and overemphasizing the effects of the trauma on other aspects of life (e.g., “It has ruined everything”). Often, it is only necessary to acknowledge the child’s attributions and normalize them for change in these attributions to occur. However, cognitive restructuring will be used when necessary.

Sessions end with a discussion of homework assignments that include utilizing gradual in vivo and imaginal exposure to traumatic reminders and reducing avoidance. Tape-recordings of exposure sessions can be used for imaginal exposure at home. Parents are asked to reward the child’s use of positive coping behaviors and given assistance in dealing with disruptive or difficult behaviors (e.g., school refusal, bed wetting, separation anxiety, and irritability). Regular feedback to the parents about the child’s progress and preparing them for any short-term increases in PTSD symptoms is very important.

Termination and Relapse Prevention

When the active treatment phase is near completion, the child should be asked to identify what has been learned and to describe how they will cope in the future with recall of the trauma and any long-term effects. Refocusing the child on school, their enjoyment of pleasant activities, and wishes for the future are helpful. A videotape can be made of this discussion and given to the child for future use. Relapse prevention should be discussed and the child encouraged to identify potentially stressful situations that may be on the horizon. Problem solving around these situations is undertaken and the child is encouraged to remember their coping skills. The videotape can be particularly helpful in this regard. It is often helpful to arrange for one or two booster sessions focusing on coping skills several months after treatment, particularly around re-entry to school or when anniversaries of the trauma occur.

Conclusions

PTSD has been the subject of considerable investigation and much controversy. Despite the inclusion of a putative event in the diagnostic criteria, the etiology of the disorder remains unclear. There are concerns about the validity of the diagnostic criteria, and in particular, their applicability to children. However, there is a large body of literature indicating that many children do suffer from PTSD or its symptoms following traumatic events. The PTSD symptomatology can be reliably assessed through semistructured interview and self-report measures, although the latter should not be used exclusively. A multidimensional and sensitive approach to the collection of information is strongly encouraged. Controlled treatment outcome studies for childhood PTSD are limited but support the effectiveness of CBT in either individual, parent and child, or group format. EMDR holds some promise as a rapid treatment for

childhood PTSD but requires further investigation. Likewise, structured group work focused on debriefing may be helpful but the available data are as yet very limited. Psychodynamic and family interventions have not been systematically investigated with regard to the treatment of childhood PTSD, but this does not rule out their effectiveness. There is limited support for the use of pharmacological agents for childhood PTSD. At present, there is general consensus among trauma experts that CBT in the form of prolonged therapeutic exposure and cognitive restructuring is the "first-line" treatment for PTSD.

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Manuscript accepted 21 October 1999