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Treatment of Children and Adolescents

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THEORETICAL POSITION

Overview

Since posttraumatic stress disorder (PTSD) entered the psychiatric lexicon with DSM-III (American Psychiatric Association, 1980), followed shortly by Terr's (1983) pioneering studies of the children of Chowchilla, many studies have shown that exposure to a variety of stressors can lead to serious and often debilitating PTSD in children and adolescents. As child mental health workers have increasingly come to appreciate the extent to which children are exposed to traumatic situations, the severity of their acute distress, and the potential for serious, long-term psychiatric sequelae, researchers have begun to conduct empirical studies of childhood PTSD within a sound developmental framework (Pynoos, Steinberg, & Wraith, 1995). Partly as a result, the DSM-IV PTSD diagnostic criteria, unlike those for DSM-III, now explicitly reflect accommodations for the presentation of symptoms in children (although it should be noted that field trials for DSM-IV PTSD criteria did not include children; see American Psychiatric Association, 1994). In this chapter, we briefly survey the context in which PTSD treatment occurs and describe the types of treatment that are typically implemented with traumatized children and adolescents. We then review in detail the limited empirical

data regarding evidence-based treatments for pediatric PTSD and, in some cases, non-PTSD sequelae of childhood trauma.

PTSD in Children

Careful attention to the nature of the stressor is mandatory when considering treatment interventions, especially since many sexually abused children do not meet diagnostic criteria for PTSD (Kendall-Tackett, Williams, & Finkelhor, 1993) while still showing profound psychological impairments warranting treatment (Cahill, Llewelyn, & Pearson, 1991). Hence, many treatment approaches and outcome studies that have been designed for sexually abused children include subjects not meeting full PTSD diagnostic criteria (Cohen & Mannarino, 1996a), whereas a diagnosis of PTSD is more commonly an entry criterion in studies of PTSD after sudden trauma (March, Amaya-Jackson, Murray, & Schulte, 1998). It should also be noted that the severity of different traumatic experiences varies greatly and is not always proportional to chronicity. For example, war often exposes children to trauma of immensely greater magnitude (e.g., repeatedly witnessing violent death, sudden loss of parents and friends, loss of home, refugee conditions) than other chronic stressors. Thus, Terr's (1991) differentiation between single and chronic traumas may not adequately distinguish between very different levels of traumatic experience.

A recent review of 25 studies indicates that three factors have been found consistently to predict the development of PTSD symptom levels in children: the severity of the trauma exposure, parental trauma-related distress, and temporal proximity to the traumatic event (American Academy of Child and Adolescent Psychiatry [AACAP], 1998; Foy, Madvig, Pynoos, & Camilleri, 1996). However, very few studies have been sufficiently well designed or adequately powered to identify variables that might predict the development of PTSD symptoms in children. In particular, little attention has been paid to variables that might moderate or mediate the outcome of treatment (March & Curry, 1998). A *moderator variable* affects the direction or strength of the relationship between an independent and a dependent variable (Barron & Kenny, 1986; Holmbeck, 1997). A *mediator variable* explains the relationship between an independent and a dependent variable. It defines the mechanism through which the former affects the latter. The theoretical influence of such variables has been described in detail by Yule (1992b). With a few notable exceptions (Cohen & Mannarino, 1996b), few of the cited treatment outcome studies have examined predictors of treatment outcome or distinguished between baseline moderator (e.g., race or gender) or mediator (e.g., compliance with or dose of treatment) effects.

Not surprisingly, PTSD symptoms themselves vary considerably with developmental stage (American Academy of Child and Adolescent Psychiatry, 1998). Developmental themes also influence children's appraisals of

threat, attribution of meaning, emotional and cognitive means of coping, toleration of their reactions, expectations about recovery, and effectiveness in addressing secondary life changes (Amaya-Jackson, 1995; Pynoos, Steinberg, & Wraith, 1995). Thus, it is imperative that clinicians and researchers frame current knowledge about child and adolescent exposure to traumatic stress within a developmental framework that recognizes the intricate matrix of a changing child and environment, evolving familial and societal expectations, and an essential linkage between disrupted and normal development.

In general, as children mature, they are more likely to exhibit adult-like PTSD symptoms. Thus, adolescents with PTSD may meet standard DSM-IV criteria with reexperiencing symptoms, avoidance and numbing, and hyperarousal. Adolescents with chronic PTSD who have experienced prolonged or repeated stressors may also present with predominantly dissociative features, including derealization, depersonalization, self-injurious behavior, substance abuse, and intermittent angry or aggressive outbursts (Goodwin, 1988; Hornstein, 1996). Children may be more likely than adolescents to show posttraumatic reenactment behaviors in play, drawings, or verbalizations. Sleep disturbances may be especially common in prepubertal children (Benedek, 1985). While Terr (1983) also has described "omen formation" in these children (i.e., they come to believe that certain "signs" were warnings of the traumatic event approaching and that if they are alert enough, they will be able to see "omens" predicting future disasters), there is little empirical literature to support this assertion, nor has a sense of a foreshortened future received empirical support (McNally, 1993). Very young children may present with relatively few DSM-IV PTSD symptoms. In part, this is because, as Scheeringa, Zeanah, Drell, and Larrieu (1995) point out, eight out of 18 DSM-IV criteria "require verbal descriptions from patients of their experiences and internal states. . . . Limited cognitive and expressive language skills [in young children] make inferring their thoughts and feelings difficult" (p. 191). Therefore, infants, toddlers, and preschoolers may present with generalized anxiety symptoms (separation fears, stranger anxiety, fears of monsters or animals), avoidance of situations that may or may not have an obvious link to the original trauma, sleep disturbances, and preoccupation with certain words or symbols that may or may not have an apparent connection to the traumatic event (Drell, Siegel, & Gaensbauer, 1993). Almquist and Brandell-Forsberg's (1997) demonstration that formal and objective assessment of play content aids in the diagnosis of PTSD in preschoolers illustrates the general principle that assessment methods in children younger than age 8 represent an area that is ripe for methodological innovation.

Clinically Relevant Subtypes

DSM-IV specifies three subtypes of PTSD: acute, chronic, and delayed-onset. Due to the difficulty in eliciting some PTSD symptoms from children

and the tendency of some parents to minimize PTSD symptomatology in their children (which may contribute to a delay in having the child evaluated), a careful history should be taken before using the delayed-onset specifier in children or adolescents. It also should be noted that if PTSD symptoms have appeared within 1 month of exposure to an extreme traumatic stressor but have not lasted beyond 1 month, and there are dissociative features, a diagnosis of acute stress disorder (ASD) should be made. If symptoms then extend beyond 1 month, the diagnosis should be changed to PTSD.

Comorbidity

Traumatized children frequently exhibit symptoms of disorders other than PTSD, and children with other disorders may have PTSD as a comorbid diagnosis. Careful questioning, not only of parents and teachers but also of the child regarding his or her internal experiences, is often necessary to clarify the diagnostic picture. This is especially important because parents may not be aware of the existence or severity of their child's PTSD symptoms. Children may minimize these symptoms in order to protect parents or to avoid discussions of the traumatic event. Thus, it is essential to question the child carefully in a developmentally appropriate manner about PTSD symptoms he or she may be experiencing. Because of the high prevalence of comorbid symptomatology in children with PTSD, it is crucial to include non-PTSD outcomes as targets for treatment and predictors of treatment response in treatment outcome studies. On the other hand, while multiple diagnoses should be made (where appropriate) in order to facilitate treatment planning, it is important to keep the focus on the traumatic event when considering the overall symptom picture.

In children with PTSD, depression may be an especially common comorbid problem. Brent and colleagues (1995) noted that there is a large overlap in symptom criteria between PTSD and major depressive disorder (MDD), and went on to suggest that the "core features" of PTSD may be much narrower than the DSM-IV criteria suggest. The study by Brent and colleagues as well as others (Goenjian et al., 1995; Green, 1985; Hubbard, Realmuto, Northwood, & Masten, 1995; Kinzie, Sack, Angell, Manson, & Rath, 1986; Kiser, Heston, Milsap, & Pruitt, 1991; Looff, Grimley, Kuiler, Martin, & Shunfield, 1995; Singer, Anglin, Song, & Lunghofer, 1995; Stoddard, Norman, & Murphy, 1989; Weine et al., 1995; Yule & Udwin, 1991) have noted comorbidity between PTSD and depressive disorders (MDD and dysthymic disorder). Several authors have hypothesized that PTSD precedes and predisposes individuals to the onset of MDD rather than the reverse (Goenjian et al., 1995). Investigators have documented comorbidity between PTSD and substance abuse in older children (Arroyo & Eth, 1985; Brent et al., 1995; Clark et al., 1995; Looff et al., 1995; Sullivan & Evans, 1994), and PTSD and other anxiety disorders (DSM-III-R overanxious disorder, agoraphobia, separation

anxiety disorder, and generalized anxiety disorder; see Brent et al., 1995; Clark et al., 1995; Goenjian et al., 1995; Kiser et al., 1991; Lonigan, Shannon, Taylor, Finch, & Sallee, 1994; Singer et al., 1995; Yule & Udwin, 1991).

Both externalizing and internalizing symptoms are also common. For example, authors such as Malmquist (1986) have noted that numbing or avoidance may take many forms in children, including restlessness, hyper alertness, poor concentration, and behavioral problems. Anxiety symptoms in young children may take the form of hyperactivity, distractibility, and increased impulsivity, which are hallmarks of attention-deficit/hyperactivity disorder (ADHD). This may in part explain why comorbidity has also been found between PTSD and ADHD (Cuffe, McCullough, & Pumariega, 1994; Famularo, Fenton, Kinscherff, & Augustyn, 1996; Glod & Teicher, 1996; McCullough & Pumariega, 1994). In addition, ADHD may in itself be a risk factor for traumatic exposure (Famularo et al., 1996). A high prevalence of other externalizing disorders, such as conduct disorder and oppositional defiant disorder, also has been noted in clinical and population samples of children with PTSD (Arroyo, & Eth, 1985; Green, 1985; Steiner, Garcia, & Matthews, 1997; Stoddard, Norman, & Murphy, 1989). Steiner and colleagues (1997) suggest that PTSD may result in loss of impulse control and diminished control of aggression and anger, which may explain this comorbidity. Pelcovitz and colleagues (1994) hypothesize that externalizing symptoms may be an initial response to ongoing stressors such as physical abuse, and that there may be a "sleeper" effect in the emergence of PTSD symptoms.

Comorbidity between PTSD and borderline personality disorder (BPD) is not uncommon in sexually abused adolescents or those children who have multiyear, multistressor traumas and PTSD histories. Studies have indicated that 60–80% of females diagnosed as having BPD report a history of childhood sexual abuse (Herman, Perry, & van der Kolk, 1989; Stone, 1990). Goodwin (1985) and Herman and van der Kolk (1987) have suggested that BPD may represent a very severe and chronic manifestation of PTSD. Other authors have indicated the predominance of dissociative and interpersonal problems associated with chronic PTSD (Famularo, Fenton, Kinscherff, & Augustyn, 1996; Spiegel, 1984; Terr, 1991). For these reasons, Goodwin (1985) recommends that diagnosis of personality disorders should be deferred until PTSD symptoms have resolved.

DESCRIPTION OF TECHNIQUES

Play Therapy

The term "play therapy" traditionally refers to the use of play as a projective technique. However, most descriptions of trauma-focused treatment advocate the use of play and other nonverbal techniques (use of drawings, puppets, dolls, etc.) as a means of enhancing the child's comfort and ability to

communicate in therapy, in order to accomplish specific therapeutic goals rather than as a projective technique (Deblinger & Heflin, 1996; Gil, 1991). This use of play in therapy is incorporated into many of the therapeutic interventions described below.

Psychological Debriefing

Pynoos and Nader (1988) describe a "psychological first aid" approach for children exposed to community violence, which may be offered in schools as well as in traditional treatment settings shortly following the traumatic event. This model emphasizes clarifying the facts about the traumatic event, normalizing children's PTSD reactions, encouraging expression of feelings, teaching problem-solving techniques, and referring the most symptomatic children for ongoing treatment. Such interventions can serve a screening function to identify children at high risk for the development of PTSD (see, e.g., Yule & Udwin, 1991). Unfortunately, therapists themselves sometimes avoid directly discussing certain traumatic events (e.g., child abuse) for a variety of reasons, including the fear of tainting the child's potential testimony in subsequent legal proceedings or concern that repeated questioning may influence children's memory regarding the factual aspects of an event (see, e.g., Ceci, Leichtman, & White, 1996).

Psychoeducation

Most treatment approaches include some degree of psychoeducation for parents, children, and sometimes teachers (Blom, 1986; Butler, Rizzi, & Handwerger, 1996; Galante & Foa, 1986; LaGreca, Vemberg, Silverman, & Prinstein, 1996; Molta, 1995; Nir, 1985; Rigamer, 1986). In particular, education about the traumatic experience (common emotional reactions to this kind of event, how to respond/protect oneself if this event were to recur, etc.) is considered beneficial to children, as well as their parents, and is a common component of many treatment approaches (see, e.g., Deblinger & Heflin, 1996).

Psychoanalytic/Psychodynamic Approaches

Despite a large and sometimes clinically compelling literature, there is little evidence apart from descriptive case studies that psychodynamic psychotherapy is effective for pediatric PTSD or other sequelae of severe trauma (Bleiberg, 1994). Nonetheless, a variety of authors advocate psychoanalytic interventions for traumatized children (see, e.g., Gaensbauer, 1994; McElroy & McElroy, 1989) as a primary intervention. Case studies have reported on the impact of trauma and the treatment response with reference to object relations (Seinfeld, 1989), the use of defense mechanisms (McElroy & McElroy, 1989), and resistance (Van Leeuwen, 1988). In these approaches, longer

term, individual therapy is used as the vehicle for processing the impact and meaning of the traumatic event, but, again, empirical support is weak at best.

Cognitive-Behavioral Techniques

Like other cognitive-behavioral approaches to treating mentally ill children and adolescents, cognitive-behavioral therapy (CBT) for traumatized children generally blends both cognitive and behavioral interventions, including exposure techniques (direct discussions of the traumatic event), stress management/relaxation techniques, and exploration and correction of inaccurate attributions regarding the trauma (see, e.g., Berliner, 1997; Cohen & Mannarino, 1993; Friedrich, 1996a). However, some strictly behavioral intervention such as *in vitro* flooding have also been used to decrease PTSD symptoms in children (Saigh, 1989), and these interventions should be distinguished from the more commonly used, combined CBT methods.

1. *Controlled exposure to traumatic cues* likely is therapeutic for children, as it is with adults (Saigh, 1992). Unfortunately, clinicians may be hesitant to take such an approach with children because of reservations about increasing child symptomatology or because of desire to avoid the negative affect associated with such discussion (Benedek, 1985). Many children are very avoidant of talking about the trauma and may in fact become transiently more symptomatic during exposure interventions. Hence, authors vary in the degree to which they advocate explicit exposure techniques. While Deblinger and Heflin (1996) and March, Amaya-Jackson, Murray, and Schulte (1998) recommend systematic gradual exposure to increasingly upsetting aspects of the trauma, other protocols (see, e.g., Cohen & Mannarino, 1993) do not include hierarchical exposure. Regardless of the specific manner in which exposure-based interventions are accomplished, most authors consider behavioral and narrative exposure to be a critical component of treatment for PTSD in children (Azarian, Miller, & Skriptchenko-Gregorian, 1996; Benedek, 1985; Berliner, 1997; Friedrich, 1996a; Galante & Foa, 1986; Parson, 1995; Pynoos & Eth, 1985, 1986; Pynoos & Nader, 1988; Rigamer, 1986; Saigh, 1989; Saigh, Yule, & Inamdar, 1996; Silvern, Karyl, & Landis, 1995; Snodgrass, Yamamoto, & Frederick, 1993; Terr, 1990). However, no controlled empirical study to date has demonstrated exposure techniques per se to be efficacious in decreasing PTSD symptoms in children.

2. *Stress management* strategies are frequently paired with direct discussion of the traumatic event. Siegel (1995) has provided a neurocognitive explanation of why stress management may alleviate PTSD symptoms. It is often recommended that progressive muscle relaxation, thought stopping, positive imagery, and controlled breathing be taught to children prior to detailed discussions of the trauma (Berliner, 1997; Cohen & Mannarino, 1993; Deblinger & Heflin, 1996; Parson, 1995; Saigh, 1992; Saigh et al., 1996;

Snodgrass et al., 1993). Mastering these skills may give children a sense of control over thoughts and feelings rather than being overwhelmed by them and allows them to approach the direct discussion of the traumatic event with confidence and not lead to uncontrollable reexperiencing symptoms and fear. Stress management techniques also are useful outside the therapeutic context if and when reexperiencing phenomena occur.

3. *Cognitive therapy (CT) techniques* have also proven useful in the treatment of pediatric PTSD. Besides straightforward cognitive restructuring regarding aberrant risk appraisal and overresponsibility, CT often targets evaluation and reconsideration of negative cognitive assumptions that children may have made with regard to the traumatic event (Berliner, 1997; Cohen & Mannarino, 1993; Deblinger & Heflin, 1996; Joseph, Brewin, Yule, & Williams, 1993; Pynoos & Eth, 1986; Spaccarelli, 1995). Beyond mere reassurances, faulty attributions regarding the trauma (e.g., "It was my fault," "Nothing is safe anymore") are explored and challenged. Most often this is accomplished through step-by-step logical analysis of the cognitive distortions, replacing them with more accurate and functional attributions. Other trauma-related beliefs, such as survivor's guilt and omen formation, may also respond to cognitive methods. Based on findings that children's trauma-related attributions and perceptions strongly predict psychological symptomatology (Mannarino, Cohen, & Berman, 1994), some authors believe the cognitive component to be at least as important as exposure in reducing postttraumatic symptoms.

Eye Movement Desensitization and Reprocessing (EMDR)

EMDR, which many consider a variant of CBT, is an intervention that combines components of exposure and cognitive therapy with directed eye movements (Shapiro, 1996). Patients are instructed to recall aspects of the traumatic event while visually following back-and-forth hand movements by the therapist. Studies with adults have shown some evidence for effectiveness in the treatment of PTSD, although the value of the eye movement procedure has not been specifically demonstrated (see, e.g., Lohr, Tolin, & Lilienfeld, 1998; Pitman et al., 1996), nor is it likely to be essential (Hyer & Brandsma, 1997). Considerable case lore (Tinker & Wilson, 1988) and, more recently, an unpublished study by Chemtob and colleagues suggest that brief treatment with EMDR may benefit traumatized youth (Chemtob, Nakashima, Hamada, & Carlson, n.d.-b).

Medication

Although PTSD has an exogenous origin and likely requires psychological treatment, the disorder is nevertheless a true psychophysiological disorder (Perry, 1994) and psychotropic medication may, in selected cases, prove helpful

in relieving PTSD and collateral symptoms (Davidson & March, 1997). Ideally, medications should decrease intrusions, avoidance, and anxious arousal; minimize impulsivity and improve sleep; treat secondary disorders; and facilitate cognitive and behavioral interventions. Unfortunately, other than clinical lore, little data exist to guide medicating children and adolescents (March, Amaya-Jackson, & Pynoos, 1996; Pfferbaum, 1997). A variety of psychopharmacological agents have been used to treat childhood posttraumatic stress symptoms and the associated symptoms of depression or panic, including propranolol (Famularo, Kinscherff, & Augustyn, 1988), carbamazepine (Looff, Grimley, Kuiler, Martin, & Shunfield, 1995), clonidine (DeBellis et al., 1994; Harmon & Riggs, 1996), and antidepressants (Brent et al., 1995). In adults, case reports and uncontrolled trials suggests that the benefits of conventional drug treatments in PTSD are quite modest (Davidson & March, 1997); clinical experience is similar for children and adolescents.

Inclusion of Parents

Parental emotional reaction to the traumatic event and parental support of the child are potentially powerful influences on the child's PTSD symptomatology (Cohen & Mannarino, 1996b; Burton, Foy, Bwanausi, Johnson, & Moore, 1994; Meyer, Blakeney, & Moore, 1994). Hence, most experts assert that inclusion of parents and/or supportive others in treatment is important for resolution of PTSD symptoms for children (American Academy of Child and Adolescent Psychiatry, 1998). At a minimum, including parents in treatment helps them monitor the child's symptomatology and learn appropriate behavioral management techniques, both in the intervals between treatment sessions and after therapy is terminated. In addition, helping parents resolve their emotional distress related to the trauma, to which they usually have had either direct or vicarious exposure, can help them be more perceptive and responsive to the child's emotional needs (Burman & Allen-Meares, 1994; Rizzone, Stoddard, Murphy, & Kruger, 1994). Many parents benefit from specific psychoeducation regarding their child's PTSD symptoms and how to manage them (Cohen & Mannarino, 1993; Deblinger & Heflin, 1996; Rigamer, 1986). Not surprisingly, parent interventions are considered imperative in the child abuse literature, where most authors recommend one or more parent-directed components (Berliner, 1997; Blom, 1986; Brent et al., 1995; Burman & Allen-Meares, 1994; Butler, Rizzi, & Handwerger, 1996; Cohen & Mannarino, 1993; Deblinger & Heflin, 1996; Friedrich, 1996b; Galante & Foa, 1986; Macksoud & Aber, 1996; Rigamer, 1986; Simons & Silveira, 1994; Terr, 1989).

Integrated Treatments

It is widely recognized that, of necessity, assessment and treatment of PTSD must address a variety of symptoms or dysfunctions beyond those related to

PTSD per se. For example, Friedrich (1996a) advocates an approach for sexually abused children that targets attachment issues, affect regulation, and self-perception. Sullivan and Evans (1994) argue for integrating trauma-focused interventions with 12-step interventions for use in adolescents with PTSD and chemical dependence. On the other hand, little or no empirical evidence supports combining treatments within or across treatment modalities. In particular, no empirical evidence supports the common clinical belief that the combination of medication management and psychotherapy is superior to psychotherapy alone.

Length of Treatment

Clinically, most children and adolescents with uncomplicated PTSD make substantial improvement with 12–20 sessions of PTSD-specific psychotherapy. Some authors have reported success with as few as three to six sessions of highly specific treatments (Chemtob, Nakashima, Hamada, & Carlson, n.d.-b; Saigh, 1986). A smaller number of children require long-term treatment. Children exposed to massive violence, intrafamilial homicide or suicide, prolonged abuse, or exposure to repetitively distressing events may require longer treatment than children who have experienced less traumatic exposure. The presence of preexisting psychopathology in the child or a parent, prior history of abuse, or ongoing exposure to a disruptive living situation may also suggest a need for intensive, longer term intervention. Long-term treatment can occur weekly or as "pulsed intervention" based on the child's response to treatment and clinical symptoms. Pulsed intervention assumes that brief therapy is suspended (rather than terminated) until further treatment becomes necessary—such as during developmental transitions, changes in living situation, or additional traumatic exposure. "Pulsing" the treatment helps encourage the development of child and parental competence by expressing confidence in the parent's ability to help the child through difficult episodes without reliance on therapy. Unfortunately, severe PTSD often requires arduous and critical dedication to treatment on the part of the child, parent, and therapist. Longer term therapy also may be necessary when issues related to capacity to trust and to form meaningful relationships are present. The length of treatment should be determined on an individual basis, with consideration given to the child's symptomatic improvement and achievement of age-appropriate development tasks.

METHOD OF COLLECTING DATA

This ensuing literature review has been adapted from the PTSD practice parameters developed by the American Academy of Child and Adolescent Psychiatry (1998), supplemented by new research identified through the fol-

lowing searches and expert review. Sources included searching MEDLINE and Psychological Abstracts, reviewing the bibliographies of book chapters and review articles, soliciting source materials from colleagues with expertise in PTSD in children, and a search of the National Center on PTSD PILOTS database. The searches of MEDLINE and Psychological Abstracts were conducted in May 1998, using the text terms "posttraumatic stress disorder," "children," and "adolescents." References from these articles and chapters were then reviewed, as were 12 full-length books.

SUMMARY OF LITERATURE

Clinical Evidence

While it is beyond the scope of this chapter to review the extensive clinical literature on the treatment of pediatric PTSD, numerous techniques have proven valuable in clinical work (Yule & Canterbury, 1994). In general, a "prevention–intervention" model incorporating triage for children exposed to stressor events, supporting and strengthening coping skills for anticipated grief/trauma responses, treating other disorders that may develop or exacerbate in the context of PTSD as well as acute PTSD symptoms, is recommended (Pynoos & Nader, 1993). While the horror of the trauma can never be undone—hence, "cure" may not be the appropriate treatment goal—victims can become well-functioning survivors if appropriate treatment is given and facilitation of healing takes place.

A number of authors have focused on the value of providing an acute crisis response to parents, teachers, and/or children in groups at school, in the hospital, or in other community settings (Blom, 1986; Galante & Foa, 1986; Goenjian et al., 1997; LeGreca, Vemberg, Silverman, & Prinstein, 1996; Pynoos & Nader, 1988; Rigamer, 1986; Stallard & Law, 1993; Stoddard, 1996; Sullivan & Evans, 1994; Yule & Udwin, 1991). Many of these interventions used convenience samples in schools or towns exposed to a common traumatic event. Group interventions in such situations provide a timely intervention to the largest possible number of exposed children. The rationale for crisis intervention following this type of trauma is that immediate discussion of the event and its impact may prevent the development of avoidance and other PTSD symptoms in large numbers of exposed children. The opportunity for screening and referral may be particularly helpful. Yule (1992a) and Yule and Udwin (1991) found that screened children in high-risk groups were far more likely to follow up when offered treatment.

Trauma-focused psychosocial interventions from a variety of theoretical perspectives are widely described in the clinical literature (see, e.g., Cohen & Mannarino, 1993; Deblinger & Heflin, 1996; James, 1989; Saigh, 1992; Terr, 1990; Yule & Canterbury, 1994). These approaches do not always focus only

on PTSD or posttraumatic stress symptoms, but often include a range of trauma impacts. The treatments may be delivered in a variety of modalities (individual, group, family), use directive or more nondirective approaches, rely on verbal or nonverbal methods, and be short- or long-term. They all focus specifically on emotional and cognitive processing of the traumatic event.

Preliminary studies have indicated that some children with PTSD exhibit physiological abnormalities similar to those seen in adults with PTSD (see, e.g., Perry, 1994). These reports have led clinicians to prescribe a variety of medications for children with PTSD. Marmar, Foy, Kagan, and Pynoos (1993) and DeBellis and colleagues (1994a; DeBellis, Lefter, Trickett, & Putnam, 1994b) suggested, but did not empirically evaluate, the possibility that an alpha-2 adrenergic agonist such as clonidine might be more effective than psychostimulants for ADHD symptoms in sexually abused and other children with comorbid PTSD. Brent and colleagues (1995) argued that antidepressants might be helpful for some children with PTSD, particularly those with a predominance of depressive or panic disorder symptoms. To date, there have been no randomized controlled trials of antidepressants or other drug treatments for PTSD in children.

Identification, much less treatment, of dissociative symptoms described in some children with chronic PTSD is controversial. Clinicians should be aware that some children with PTSD have prominent dissociative symptoms that may take the form of hallucinations or disorganized thinking and behavior. These symptoms may be difficult to distinguish from psychotic states and should be ruled out as manifestations of PTSD. There have been no controlled studies evaluating treatment approaches for dissociation. Because of the complexity of treating PTSD complicated by dissociative symptoms, clinicians should consult additional references such as Putnam (1997) and Silberg (1996).

Not all behavioral and emotional problems in children with PTSD are caused by traumatic events. In treating children with PTSD or PTSD symptoms, it is essential that the clinician recognize the presence of preexisting and comorbid psychiatric disorders and their interaction with PTSD symptoms. When trauma-focused therapy does not result in improvement or directly target these other difficulties, therapists should administer proven interventions for these conditions as well.

Empirical Evidence

Very few empirical studies of trauma-focused interventions in children and adolescents have been conducted to date. These studies have not always required that subjects meet diagnostic criteria for PTSD but have instead assessed PTSD symptoms, as well as other related conditions, including depressive symptoms, and general emotional and behavioral problems. Thus, the degree of methodological rigor varies considerably in the following studies,

with some of the single-case studies showing greater methodological sophistication than randomized designs, but all use defined targeted symptoms and at least attempt to assess change using valid and reliable measures. Tables 6.1, 6.2, and 6.3 present estimates of effect sizes for studies involving true untreated, treated, and within-group comparisons, respectively. We summarize the literature based on strength of evidence for treatment efficacy.

Clinical Trials (Pre–Post; No Comparison Group)

PSYCHOSOCIAL TREATMENTS

Single-Case Subject-Level Designs. Saigh (1986, 1989) used a multiple baseline across traumatic scenes design to show reductions in posttraumatic stress as a result of a multifaceted behavioral treatment package (parent–child education, *in vitro* and relaxation training, and debriefing) with children traumatized in a war zone. Similarly, Farrell, Hains, and Davies (1998) evaluated effectiveness of cognitive-behavioral interventions with 4 sexually abused children using a multiple baseline design, with pretreatment, posttreatment, and 3-month follow-up assessments. PTSD symptomatology decreased in all of the children. There are numerous pre–post treatment studies with groups of sexually abused children, almost all of which of which demonstrate improvement for at least some symptoms (Finkelhor & Berliner, 1995).

Single-Case Group Designs. Using a single case across time, setting, and age design, March, Amaya-Jackson, Murray, and Schulte (1998) examined the efficacy of an 18-week, group-administered, school-based, manualized cognitive-behavioral intervention with 17 youth who had experienced a single-incident stressor. The authors used a schoolwide selection to treatment procedure conducted in two elementary and two junior high schools, and entered children who were positive for PTSD into the therapeutic regimen. Fourteen of 17 subjects completed treatment. Of these, 8 (57%) no longer met DSM-IV criteria for PTSD immediately posttreatment; 12 of 14 subjects (86%) were free of PTSD at 6-month follow-up. On intent-to-treat analyses, treatment produced a robust beneficial effect at posttreatment on the Clinician-Administered PTSD Scale—Child Version (CAPS-C), with additional improvement accruing at follow-up. Improvements of a similar magnitude were seen for depression, anxiety, and anger. Locus of control remained external from pre- to posttreatment but became strongly internal at follow-up.

Extended Pretreatment Baseline Designs. Two studies with sexually abused children and one study of children suffering a single-incident stressor specifically targeted posttraumatic stress symptoms and attempted to address the problem of having no comparison group. Lanktree and Briere (1995)

TABLE 6.1. Comparisons with Control Groups

Study quality	Authors	Target population	Sessions	Dependent measure	Type of treatment	Sample size	Effect size		Comment
A[c]	Deblinger, Lippman, & Steer (1996)	Sexually abused children	12	Diagnostic interview	Individual Parent COMB Community	22 22 24 21	C vs. P C vs. COMB P vs. COMB Pending data	0.42 0.04 0.33	Significantly greater decrease in PTSD sx in children receiving experimental tx.
A[c]	Cohen & Mannarino (1996a)	Sexually abused preschool children	12	CSBI	CBT Community	CBT 39 NST 28	0.59		PTSD sx, sexualized and nonsexualized behavior problems decreased significantly only in the experimental tx group with group × time differences in PTSD and behavior sx.
A	Berliner & Saunders (1996)	Sexually abused children	10	CITES-R	Enhanced sexual-abuse-specific CBT; group Children randomized to standard sexual-abuse-specific CBT	80	N/A		No group × time differences in PTSD or anxiety sx.
A[i]	Celano, Hazzard, Webb, & McCall (1996)	32; sexually abused children	8	CITES-R	CBT Usual tx	15 17	0.21		No group × time differences in self-report or parent-reported PTSD sx.
A[c]	Cohen & Mannarino (1998)	49; sexually abused children	12	CSBI	Sexual-abuse-specific CBT; individual child and parent	CBT 30 NST 19	0.2		No group × time differences in PTSD or anxiety sx. Group × time differences in depression and social competence.
B[c]	Field, Seligman, Scafedi, & Schanberg (1996)	Children exposed to a hurricane	8	No PTSD-dependent measure	Massage therapy, attention control	60	N/A		No PTSD-dependent measure.

Note. Superscript *i* indicates intent-to-treat analyses; superscript *c* indicates completer analyses. tx, treatment; sx, symptoms; C, community; P, parent; COMB, combination; CBT, cognitive-behavioral therapy; CSBI, Child Sexual Behavior Inventory; NST, nondirective supportive therapy; CITES-R, Children's Impact of Events Scale—Revised.

TABLE 6.2. Comparisons with No-Treatment Controls

Study quality	Authors	Target population	Sessions	Dependent measure	Type of treatment	Sample size	Effect size	Comment
A[c]	Chemtob, Hamada, & Nakashima (n.d.)	Children exposed to a hurricane	4 weekly group or individual sessions in school	PTSD Reaction Inventory	CBT WLC	—	—	PTSD sx decreased acutely and at follow-up in CBT condition relative to WLC
A[c]	Chemtob, Nakashima, Hamada, & Carlson (in press)	Children exposed to a hurricane	4 weekly individual sessions	PTSD Reaction Inventory	EMDR WLC	17 15	1.34	PTSD sx and anxiety decreased compared to wait list, 56% no longer met PTSD criteria
B[i]	Goenjian et al. (1997)	Adolescents exposed to massive earthquake	4½-hr group sessions; 2 individual sessions over 3 wk	PTSD Reaction Inventory	Trauma tx Comparison schools	35 29	0.41	PTSD sx decreased in tx group, worsened in comparison group; control group became more depressed

Note. Superscript *i* indicates intent-to-treat analyses; superscript *c* indicates completer analyses. tx, treatment; sx, symptoms; CBT, cognitive-behavioral therapy; EMDR, eye movement desensitization and reprocessing; WLC, wait-list control.

TABLE 6.3. Pre- to Posttreatment Comparisons

Study quality	Authors	Target population	Sessions	Dependent measure	Type of treatment	Sample size	Effect size	Comment
B[c]	Deblinger, McLeer, & Henry (1990)	Sexually abused children	12 weekly	Diagnostic interview	Individual CBT	19	2.8	Depression and behavior problems decreased.
B[i]	March, Amaya-Jackson, Murray, & Schulte (1998)	Adolescents with PTSD after single-incident stressor	18 weekly	CAPS	Group CBT	17	1.15	Depression, behavior problems, anger decreased; locus of control external to internal.
C	Stallard & Law (1993)	Survivors of a minibus crash	3	Psychological debriefing	None; compared pre-tx scores with other treated traumatized children.	7	N/A	PTSD sx, anxiety, and depression decreased.

Note. Superscript *i* indicates intent-to-treat analyses; superscript *c* indicates completer analyses. BT, cognitive-behavioral therapy; CAPS, Clinician-Administered PTSD Scale.

followed 105 children receiving a "trauma-specific" treatment. The treatment was not manualized, nor were there procedures for treatment adherence. Only 19 children were still in treatment at the 1-year assessment point. The authors found that children improved on a trauma-specific symptom checklist. Controlling for time since the abuse, the authors concluded that the period of treatment accounted for improvement. Deblinger, McLeer, and Henry (1990) tested a 12-session cognitive-behavioral, sexual-abuse-specific treatment that was manualized with 19 sexually abused girls. The authors used a repeated pretreatment assessment method to demonstrate that symptom abatement only occurred following active therapeutic intervention.

Historical Control Designs. Two studies of acute school-based interventions with disaster survivors used comparative data to demonstrate preliminary effectiveness results. Yule (1992a) compared children in a school that welcomed intervention and held a debriefing meeting for all survivors and two small, open-ended, cognitive-behaviorally based groups, with children in a school where there had been no outside help. The children in the treatment school had significantly lower posttraumatic stress scores and fear scores. Stallard and Law (1993) assessed adolescents receiving a group-administered psychological debriefing for minibus crash survivors and reported significant reductions at posttest in trauma, anxiety, and depression symptoms, using the scores of children in the Yule (1992a) study for comparison purposes.

PSYCHOPHARMACOLOGICAL TREATMENTS

Case Reports. Horrigan (1996) reported an open study in which a long-acting alpha-2 agonist, guanfacine, was successful in reducing nightmares in a 7-year-old child with PTSD. Famularo, Kinscherff, and Fenton (1988) described modest decreases in PTSD symptomatology in 11 sexually and/or physically abused children following a 5-week course of propranolol, although symptoms reappeared following cessation of the medication. Looff, Grimley, Kuiler, Martin, and Shunfield (1995) reported that carbamazepine at serum levels of 10.0 to 11.5 μg/ml resulted in complete remission of symptoms in 22 out of 28 children with PTSD. These findings were complicated by the fact that several of the children were concurrently taking Ritalin, clonidine, selective serotonin reuptake inhibitors (SSRIs), or tricyclic antidepressants. Harmon and Riggs (1996) reported a decrease in at least some PTSD symptoms in all 7 children included in an uncontrolled clinical trial using clonidine patches.

Single-Case or Between-Group Controlled Studies. There are no between-group or single-case controlled studies of medications for pediatric PTSD.

Controlled Clinical Trials (Pre–Post; Comparison Group)

PSYCHOSOCIAL TREATMENTS

Nonrandomized Comparison Group. Goenjian and colleagues (1997) tested a school-based grief/trauma-focused cognitive-behavioral intervention to decrease chronic PTSD and depressive symptoms in 64 adolescents following a catastrophically destructive earthquake. Children in four schools near the epicenter of the earthquake were evaluated 1 ½ years after the earthquake; children in two of the schools were then provided with treatment, while children in the remaining two schools were untreated. Pretreatment levels of PTSD symptoms and depression were high in both groups. The treatment included direct exploration of the trauma, relaxation and desensitization procedures, resolution of grief through focusing on nontraumatic memories, and group support through recognition of the commonality of PTSD symptoms among peers. The treated group experienced significant improvement in PTSD and depressive symptoms, whereas these symptoms significantly worsened in the untreated group.

Randomized Clinical Trial with No-Treatment Control Conditions. Three studies have randomized children to an experimental and a no-treatment condition. In all three cases, the experimental treatment produced positive results. Because no alternative treatment was tested, it is not possible to ascribe the results to the specific nature of the intervention versus nonspecific effects of an active treatment.

Field, Seligman, Scafedi, and Schanberg (1996) investigated the impact of massage therapy with children exposed to a hurricane. The authors randomly assigned 50 children to massage therapy or to a video attention-control condition. Prior to treatment, both groups scored in the severe range for posttraumatic stress symptoms. The massage therapy group experienced significantly more improvement than the control group on posttreatment scores, one of which was the Revised Children's Manifest Anxiety Scale (RCMAS). For a variety of reasons, including no PTSD-specific dependent measure and the lack of blind evaluations, this study is less convincing with respect to potential efficacy than some of the single-case designs.

Two years after a catastrophic natural disaster (hurricane), Chemtob and colleagues used a repeated-measures, randomized, lagged-groups design to evaluate a brief, manual-guided group psychosocial intervention that, by description, was largely cognitive-behavioral, administered by specially trained school counselors to highly symptomatic children identified via schoolwise screening (Chemtob, Hamada, & Nakashima, n.d.). Children awaiting treatment served as wait-list controls and provided treatment replications when treated. Treatment effectiveness was assessed using (1) a children's self-report inventory of trauma symptoms, (2) a semistructured clinical

interview, and (3) teachers' ratings of classroom behaviors. In the follow-up 1 year later, consistent with self-reports, interviewer evaluation indicated that the treated children had significantly fewer trauma symptoms than untreated (wait-list) children. Similarly, teacher ratings indicated that among treated children, a number of key classroom behaviors significantly improved compared to wait-list children. Reduction in symptoms was maintained at 1-year follow-up.

Using a similar randomized, lagged-groups design, Chemtob and colleagues later provided three individual sessions of EMDR treatment to 32 children who were (1) treatment nonresponders to the earlier treatment intervention and (2) met clinical criteria for PTSD (Chemtob, Nakashima, Hamada, & Carlson, in press). The Children's Reaction Inventory (CRI) was the primary measure of the treatment's effect on PTSD symptoms. Associated symptoms were measured using the RCMAS and the Children's Depression Inventory (CDI). There were substantial reductions in both groups' CRI scores following treatment. Also significant, though more modest, reductions occurred in RCMAS and CDI total scores. Treatment gains were maintained at 6-month follow-up.

Randomized Clinical Trials against Comparison Treatments. Recently, studies contrasting the treatment of PTSD in sexually abused children with CBT and control treatments have entered the literature. While the published investigations are not free of methodological problems (e.g., lack of blind evaluators and use of completer rather than intent-to-treat [ITT] analyses), they are significantly strengthened by rigorous assessment methods, randomized treatment assignment, and manualized treatment and adherence/fidelity procedures.

Deblinger, Lippman, and Steer (1996) examined the target of an experimental study using a 12-week trauma-focused, cognitive-behavioral treatment with 100 sexually abused children. The experimental treatment was manualized, and rigorous treatment adherence procedures were used. Subjects were randomly assigned to one of four treatment conditions: child only, parent only, child and parent, or routine community service. Results indicated that although all groups improved on PTSD symptoms, children in the two conditions that received direct, trauma-specific treatment demonstrated significantly greater improvement in PTSD symptoms than children in the other two conditions. This study also found that when the parent received treatment, there was significantly more improvement in parent-reported externalizing symptoms and child-reported depressive symptoms.

Several studies have examined alternative treatments. Three studies have compared a sexual abuse–specific, trauma-focused treatment with a nonspecific supportive therapy, while one study compared a standard and an enhanced trauma-specific treatment.

Cohen and Mannarino (1996a) evaluated trauma-focused cognitive-

behavioral treatment for 68 sexually abused preschoolers and their parents. Children were randomly assigned to either the CBT intervention or a nondirective support therapy condition. The treatments were manualized and rigorous adherence procedures were used. Child PTSD symptoms and sexually inappropriate behaviors, as reported by parents, significantly decreased by posttreatment in the CBT group only (Cohen & Mannarino, 1996a).

Two other controlled studies with school-age children comparing manualized CBT trauma-specific and nonspecific treatments failed to find significant group × time effects in impact on anxiety or PTSD symptoms (Celano, Hazzard, Webb, & McCall, 1996; Cohen & Mannarino, 1998). Cohen and Mannarino (1998) randomly assigned 49 sexually abused children and their caretakers to a 12-session, individually administered intervention, and Celano and colleagues (1996) randomly assigned 32 sexually abused girls and their parents to an 8-session intervention in which therapy time was either split between children and parents or conjoint. Both studies used manuals, rigorous treatment-adherence procedures, and blind evaluators. One explanation for the null findings is that older children in therapy for sexual abuse spontaneously engage in exposure-type activities, thus reducing the likelihood of finding a treatment-specific effect. Another explanation may be that the number of subjects completing treatment in these studies did not provide adequate power to detect group × time effects. The studies did find that trauma-specific treatment was more effective in reducing depression and improving social competence (Cohen & Mannarino, 1998), in reducing parental self-blame and expectations of negative impact of abuse, and in increasing abuse-related parental support to the child (Celano et al., 1996).

Berliner and Saunders (1996) examined whether the addition of the specific techniques of gradual exposure and stress inoculation training improved outcomes compared to a standard, abuse-focused treatment for 80 school-age sexually abused children. The treatments were manualized and rigorous treatment adherence procedures were used. Contrary to the hypothesis, there were no group × time differences in PTSD or anxiety symptoms. These authors concluded that since most children did not exhibit high pretreatment levels of these symptoms, there may have been either a floor effect or the standard treatment contained sufficient exposure and coping skills components to obviate the need for more specific strategies with children who have moderate symptom levels. Another explanation for the lack of significant differences is that the standard, abuse-focused control-group treatment contained inadvertent exposure elements, which made the two treatments insufficiently distinct to detect differences.

Cross-Modality Comparative Treatment Trials

Data on the comparative efficacy of psychotherapy versus medication, or the combination of the two approaches, are not yet practical given the limited

state of knowledge regarding the efficacy of psychotherapy even more so medication treatment for pediatric PTSD. Two probably underpowered and otherwise poorly designed studies of different psychotherapy approaches have, however, been published. A randomized trial comparing group and individual play therapy for sexually abused children, without specific reference to PTSD symptoms, found differences in improvement for group therapy on only one outcome measure (Perez, 1998). In a study comparing sexually abused children randomly assigned to family network therapy and family network therapy plus group therapy, Monck and colleagues (1994) reported no differences in child treatment outcomes. PTSD symptoms were not specifically assessed and no firm conclusions regarding treatment approach (individual, group, or family) can yet be drawn.

SUMMARY

Like adults, children and adolescents develop PTSD or PTSD symptoms following a variety of severe stressors. Because DSM-IV PTSD criteria may not be sufficiently sensitive to developmental issues, especially in younger children, questions have been appropriately raised about whether current diagnostic criteria adequately capture posttrauma impacts in children. A variety of moderator and mediator variables also have been proposed vis-à-vis the development of PTSD after exposure to a high-magnitude stressor; none have been adequately explored with respect to tracking treatment outcome. No evidence exists that a particular treatment approach (e.g., individual, group, or family) for delivery of the psychotherapeutic treatment is superior. The best available evidence supports outpatient, trauma-focused psychotherapy containing cognitive-behavioral components, including exposure strategies, stress management/relaxation, cognitive/narrative restructuring, and a parental treatment component as the preferred treatment approach. While psychotropic medications, particularly clonidine and the SSRIs are widely used for pediatric PTSD, current empirical support is inadequate to justify the use of any particular medication to treat PTSD symptoms in children or adolescents. Involvement of parents in treatment has not been shown specifically to ameliorate child PTSD symptoms except in preschoolers, but is likely to be necessary for improvements in PTSD, general emotional/behavioral functioning, and reduction of depressive symptoms in many, if not most, traumatized youth.

PROPOSED GUIDELINES FOR TREATMENT

Overview

The following recommendations regarding clinical interventions for children with PTSD symptoms are based on the available empirical evidence and sup-

ported by clinical experience. Because of the diagnostic uncertainties associated with PTSD in children, many experts believe that treatment for significant posttraumatic symptomatology is likely to prove helpful even when full DSM-IV diagnostic criteria for PTSD are not met. In particular, children and adolescents who have PTSD symptoms and concomitant functional impairment secondary to the symptoms (e.g., in family or school role performance, social relationships, moods/behaviors) can benefit from the recommended interventions. With the caveat that preschool children require adaptation of diagnostic methods, if not criteria, future treatment–outcome research in this area might profitably focus on children and adolescents with a DSM-IV diagnosis of PTSD using randomized designs and rigorous assessment methods.

Assessment

A careful assessment beginning with the presenting complaint and moving through a DSM-IV five-axis diagnostic assessment to a tailored treatment plan based on a systematic assessment of problem areas is the cornerstone of treatment planning. It is essential to interview the child, in addition to the parents, with regard to the presence of PTSD and related symptoms (Earls, Smith, Reich, & Jung, 1988).

Assessment and treatment with traumatized children, regardless of the condition, disorder, or functional impairment, should be conducted in a developmentally sensitive manner (McNally, 1996). This means that the modalities and mechanisms for communication should be adjusted to the child's developmental level. For example, young children often rely on nonverbal methods of communication and participate more fully when play, drawing, or acting out are used as the vehicle for clinical strategies. On the other hand, older children and adolescents can be offended when therapists assume that they prefer to play rather than talk, or infantalize the treatment process. Therapists must also be aware of the tasks and issues of particular developmental stages, and the potential for developmental derailment that is associated with the impact of traumatic events. Restoring normal developmental functioning is always a goal of child treatment (Pynoos & Nader, 1993).

Parental involvement in treatment is highly relevant to developmental trajectory. Parents should routinely be included in the assessment process, but the level and nature of involvement in treatment should be based on developmental stage, level of family functioning independent of PTSD, the extent to which PTSD disrupts family processes, and the type of emotional or behavioral problem targeted for treatment. Parents or other primary caretakers necessarily must be included in the therapeutic process when externalizing behaviors (due to PTSD or other sources) require behavioral contingency management to carry out effective interventions.

Treatment Setting

Children with PTSD symptomatology should be the direct recipients of interventions to ensure maximum treatment gains. While empirical evidence does not support a preference for individual, family, or group therapy, in most cases, treatment likely will be administered as individual therapy. For abused children, interventions may initially be delivered as individual therapy and subsequently be reinforced by rehearsal and practice with parents. This approach may also be helpful for other groups of traumized children, as it enhances communication with and reliance on parents if traumatic exposure or symptoms recur in the future. Group therapy in the school setting may be optimal for children who have experienced a common trauma, for example, a hurricane or school shooting. Community- and school-based brief interventions also can serve as a screening mechanism to identify high-risk children who should be referred for formal therapy. While psychological debriefing following a disaster is ordinarily group administered in school or community settings, it is important to note that psychological debriefing after sudden trauma lacks adequate empirical support in the pediatric population and has the potential to exacerbate traumatic reactions rather than to facilitate rapid recovery.

Psychoeducation

All recommended treatment approaches incorporate psychoeducation as a component, usually at the beginning of treatment. Posttraumatic reactions are explained and normalized, and children and adults are provided an opportunity to express feelings, ask questions, and receive support.

Level A–B Treatment

As of this writing, cognitive-behavioral treatment approaches (CBT) have the strongest empirical evidence for efficacy in resolving PTSD symptoms in children. CBT may, therefore, be considered the first-line approach, either alone or in combination with other forms of treatment. It is unclear from the existing research, however, which components of CBT are the "active ingredients." Although most evaluated forms of CBT have used exposure techniques, it is not yet established how much and how explicit the exposure component needs to be, or how many repetitions are necessary to obtain therapeutic effect. There is some evidence from the research that the opportunity to talk about the traumatic event in a supportive environment, even without structured, hierarchical, or prolonged exposure, may be helpful. In other instances, the avoidance or reluctance may not be due to anxiety; therefore, insistence on repeated recounting of the details may be unnecessary and even cause iatrogenic side effects (e.g., reluctance due to embarrassment, irritation about having to describe the event to so many professionals).

Similarly, the role of cognitive restructuring or anxiety management training (e.g., relaxation training, constructive self-talk) relative to exposure-based interventions has not been adequately evaluated empirically in children.

Other Treatments

Other psychosocial treatments, such as psychodynamic psychotherapy, art therapy, or group psychotherapy, are supported by anecdotal evidence but cannot on this basis be recommended as first-line treatments for pediatric PTSD.

Similarly, due to the lack of adequate empirical data, clinicians must rely on judgment to determine the appropriateness of psychopharmacological interventions, usually basing intervention strategies on the pattern of comorbidity in children with PTSD who have prominent depressive, anxiety, panic, and/or ADHD symptoms (Donnelly, Amaya-Jackson, & March, 1999). As a general practice, medication should be selected on the basis of established practice in treating the comorbid condition (e.g., antidepressants for children with prominent depressive symptoms). Because of their favorable side-effects profile and evidence supporting effectiveness in treating both depressive and anxiety disorders, SSRIs often are the first psychotropic medication chosen for treating pediatric PTSD. Clonidine may be helpful for some children and adolescents with prominent hyperarousal symptoms, especially elevated startle responses.

Level of Care

There is currently no clear evidence regarding the proper length of treatment. Some acute interventions, including psychological debriefing, consist of one to several sessions. As with most cognitive-behavioral interventions for pediatric mental disorders (Hibbs & Jensen, 1996), the majority of empirically evaluated interventions have been between 8 and 16 sessions. This does not mean that some children, especially those who have experienced prolonged victimization, have poor premorbid adjustment, comorbid conditions, or exhibit chronic PTSD with predominantly dissociative features, will not require much longer interventions. Clinical judgment based on intervention target and progress should be used in determining treatment length.

Indications and Contraindications

Indications for the interventions described earlier, except for psychological debriefing, are the presence of significant PTSD symptoms with some degree of functional impairment. It is not yet clear whether all children with such symptoms require treatment, since some children appear to recover over time without formal intervention. However, because there are currently no reli-

able means of predicting, in individual cases, which children will have persistent symptomatology or develop symptoms at a later point, it is recommended by most, but not all, experts that symptomatic youth with Criterion A experiences be offered treatment.

Contraindications are generally specific to the treatment modality in question. For example, cognitive therapy is unlikely to be helpful in the severely retarded child; clonidine would be contraindicated in the child at risk for hypotension secondary to medical (heart disease) or nonmedical (dehydration with athletics) causes. With respect to PTSD per se, comorbidity may be the primary problem—defined as causing the greatest degree of present-state functional impairment—and must, as a result, be addressed before specific PTSD treatment(s) can be applied. For example, children with comorbid depression and suicidality should probably not receive a trauma-focused, exposure-based intervention until the depressive symptomatology has abated with either psychotherapy, medication with an SSRI, or both. Similarly, children with substance abuse disorders should be treated for those problems prior to the initiation of trauma-focused interventions. Though not without controversy, most experts believe that children who do not report or recall a traumatic event, even if they may exhibit some posttraumatic symptoms, probably should not have a treatment focused on a presumed traumatic event.

FUTURE DIRECTIONS

There are several important areas for future inquiry with regard to the optimal treatment of PTSD and PTSD symptoms in children. One area concerns the nature and assessment of PTSD in children (American Academy of Child and Adolescent Psychiatry, 1998; March, 1999). Currently, there is not an ideal instrument for determining the presence or absence of PTSD in children. The existing measures have been used primarily in research contexts and may not be easily incorporated into clinical settings. In addition, there are questions about the diagnosis of PTSD and whether further modification of DSM-IV criteria is necessary to reflect the developmental differences in posttraumatic impact, especially for young children. Consensus has not yet been achieved regarding the level and severity of PTSD symptoms that are clinically significant or require formal intervention.

Most treatment outcome research so far has focused on cognitive-behavioral interventions. The findings are consistent with the therapy-outcome literature in general that finds cognitive-behavioral interventions to be effective. However, it has yet to be established whether it is specific components of this approach that are the active ingredients in reducing PTSD symptoms and whether different components are more effective with certain symptom patterns or for children of specific developmental stages. Studies

that analyze and compare the different treatment elements with a range of ages and symptom presentations would be especially helpful in designing optimal treatment regimens.

Trials of different medicines, alone or in combination with other forms of treatment, would be especially desirable to elucidate the comparative risks and benefits of psychotropic medications with this population.

Having demonstrated that treatment outcome studies are possible in this population, treatment research within and across modalities must move toward greater methodological rigor, as exemplified in other studies of pediatric anxiety disorders (Chorpita, Barlow, Albano, & Daleiden, 1998). Furthermore, larger multisite trials will be needed to examine potential moderators and mediators of treatment outcome (March & Curry, 1998).

Identifying effective interventions in controlled studies is only one step toward improving treatment outcomes among children who suffer from PTSD or PTSD symptoms. It is necessary that proven treatments be transported from the laboratory to the clinic (Kendall & Southam-Gerow, 1995). Field studies that evaluate how treatments are delivered under more usual conditions, or with children and families who may have more complicated circumstances, will be necessary, as will attention to the cost-effectiveness of different treatment approaches.

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