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GENERAL ARTICLES

Childhood Posttraumatic Stress Disorder: Diagnosis, Treatment, and School Reintegration

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Abstract. Childhood, in our culture, does not preclude exposure to trauma. Sexual abuse, physical abuse, natural disaster, urban violence, school violence, and terrorism result in significant numbers of children with posttraumatic stress disorder (PTSD) symptomatology. Many factors contribute to symptomatic expression, with some children showing few effects and others being unable to return to school. School psychologists should have a basic understanding of the impairing effects of PTSD, assessment tools, treatment options, and school reintegration planning. Specifically, this article explicates the prevalence and etiological factors related to PTSD. Assessment tools, therapeutic techniques, and school reintegration are discussed.

Trauma can be a formative, developmental influence in the ontogenesis of emotional, cognitive, arousal, and interpersonal systems (Pynoos, Steinberg, & Piacentini, 1999). It is estimated that as many as 25% of all children experience a traumatic event by the time they are 16 years of age (Costello, Erkanli, Fairbank, & Angold, 2002). Many children survive trauma, adaptively integrating the experience and developing normally (Pynoos et al., 1999; Yule, 2001). However, for some, posttrauma symptomatology reaches clinical levels manifesting a constellation of potentially life-disrupting and learning-impairing symptoms (Perry, 1999). The practicing school psychologist should have a solid working knowledge of etiological and diagnostic implications of posttraumatic stress disorder (PTSD), the therapeutic options, and when needed, the ability to facilitate school reintegration.

The essential feature of PTSD is symptom development following direct personal experience of a traumatic event, witnessing a

traumatic event, or learning of such an experience with someone interpersonally close. Characteristic symptoms include persistent reexperiencing of the traumatic event through intrusive thoughts, physiological and psychological reactivity to trauma reminiscent stimuli, and/or distressing dreams; persistent avoidance of stimuli associated with trauma and general numbing of responsiveness (e.g., efforts to avoid thoughts associated with the trauma, feelings of detachment or estrangement from others, and restricted range of affect); and persistent symptoms of increased arousal (i.e., hypervigilance, exaggerated startle response, and difficulty concentrating or completing tasks; APA, 2000). Symptoms may have delayed onset or follow a latency period (APA, 2000; Sack, Him, & Dickason, 1999). Further, symptoms may also present in a cyclic manner with the child manifesting episodes of intrusive thoughts and psychological reactivity followed by periods of numbness and restricted affect (Herman, 1992; Johnson, 1998).

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Prevalence of PTSD in Children and Adolescents

Historically, studies have shown wide ranges in estimated prevalence rates (Yule, 2001). In trauma-exposed populations, rates have been reported as high as 90% (Sauter & Franklin, 1998) and as low as 16% (Stuber, Nader, Yasuda, Pynoos, & Cohen, 1991). Sauter and Franklin suggested that rates vary depending on trauma type (e.g., higher rates with violent trauma and lower rates with life-threatening illness) and diagnostic criteria utilized (e.g., DSM-III criteria yields higher rates than DSM-III-R criteria). Population characteristics also contribute to variability. For example, girls may show higher rates than boys (e.g., Jaycox et al., 2002). Further, unique samples of children, such as sexually abused children in foster care, show rates as high as 60% (Dubner & Motta, 1999). Although epidemiological data are inconsistent, a conservative overall estimate has been suggested. Of those exposed to trauma, 30% may develop clinical PTSD (Perry, 1999).

Methodological Issues in Research on PTSD in Children

There are many serious methodological problems inherent in, and specific to, research on children, trauma, and PTSD. First, current diagnostic formulations of PTSD may not be operationally sound when applied to children as they lack age-appropriate diagnostic sensitivity and specificity (Tierney, 2000). Second, although trauma assessment is no longer in its infancy, it lacks the psychometric refinement of more mature assessment domains (e.g., intelligence). Third, symptom characteristics unique to PTSD can affect reliability and validity estimates of trauma measures (e.g., oscillating cycles of symptom expression and repression). Fourth, many studies have been completed on children in psychiatric venues (McCloskey, 2000); few studies have utilized control groups (McCloskey, 2000); and specific, trauma-related studies have assessed effects on small, unique samples of children making generalization difficult. Fifth, few treatment outcome studies incorporate designs

with adequate empirical rigor to explore effectively the respective influence of possible moderator variables (e.g., race, age, or gender) or mediator effects (e.g., treatment compliance or family support; Cohen, Berliner, & Mannarino, 2000). Although corrective strategies have been recommended, such as age-based, behaviorally anchored diagnostic criteria (Tierney, 2000), a tested tradition of research, diagnosis, and clinical practice has yet to be established. Current practice can be cautiously informed by empirical evidence and balanced with school psychology's tradition of extensive therapeutic, assessment, and consultation training.

Etiological Factors

The use of trauma as a diagnostic parameter (APA, 2000) has resulted in a range of etiological conceptualizations. Traumatic stress can be naturally occurring (e.g., hurricane) or man made (e.g., terrorism); incorporate community-wide involvement and support or deplete community resources (Pfefferbaum, Nawaz, & Kearns, 1999); occur in intimate physical and emotional proximity (e.g., domestic violence); occur physically distal and strike emotionally close (e.g., Challenger tragedy); or occur physically close and emotionally distal (e.g., witnessing the fatal accident of a stranger). The stress can be acute (e.g., rape) or chronic (e.g., years of war or abuse), and/or can occur in isolation (e.g., a healthy supported child in a car accident) or as part of layers of community chaos and stress (e.g., gang-related assault of a poor urban child of an alcoholic parent). Ultimately, the effects vary from child to child depending on a collective influence of factors (Pfefferbaum et al., 1999; Webb, 1994).

An evolving understanding of trauma characteristics and effect interactions began with Terr's early model. Terr (1991) described Type I trauma, a time-limited trauma (e.g., a rape, natural disaster, or shooting) and Type II trauma, a pervasive and chronic trauma (e.g., chronic incest, ongoing catastrophic illness, or war). In the case of cumulative trauma (Type II), the child experiences aggregate sequelae, with each incident leaving the child increasingly vulnerable. Type I trauma may be asso-

ciated with more typical PTSD symptomatology (Terr, 1991; Tremblay, Hebert, & Piche, 2000; Wolfe, 1999), whereas Type II trauma may be associated with additional psychopathology (Terr, 1991; Thabet & Vostanis, 2000; Tremblay et al., 2000; Wolfe, 1999). The more severe Type II sequelae include: enduring maladaptive attributional style (e.g., learned helplessness and depressive symptomatology); dissociative states (e.g., massive denial and numbing); deficient daily and severe stress-related coping strategies; and excessive, poorly managed response to anger-provoking stimuli (Terr, 1991; Wolfe, 1999; Tremblay et al., 2000).

It has been generally accepted that the two-type model weighs trauma-type effects too heavily and fails to adequately address many other child-intrinsic and ecological factors. For example, because cognitive activity occurs as an ontogenetic landscape in which processing of new experience depends upon past experiences (Clay, 2001), the younger the child the more potentially formative the trauma (Pfefferbaum et al., 1999). Additionally, the very factors that contribute to an increased probability of experiencing a traumatic event (e.g., gender, family, and community factors) also play a role in diathesis (Costello et al., 2002; Jaycox et al., 2002). Therefore, trauma effects are better explained by the empirically based, developmental life trajectory model developed by Pynoos and colleagues (1999). Appreciating the multiplicity of interrelated elements in adaptation and development, the model presents a dynamic and evolving trajectory toward adjustment, or psychopathology, resulting from the ongoing interplay of multiple variables (Pynoos et al., 1999). Specifically, traumatic experience and neurodevelopmental, stage-related vulnerabilities are proposed to interact with: (a) proximal trauma reminders (e.g., external and internal cues, reminders of prior trauma, and loss reminders); (b) associated secondary adversities (e.g., changes in family circumstances, resources, or need to assume new responsibilities); (c) the child's evolving, adjusting, and developing ecology (e.g., family, school, and community); and (d) intrinsic factors (e.g.,

genetics, gender, temperament, appraisal and stress response systems, premorbid psychopathology, and attachment). Logically, it follows that risk assessment and diagnosis involve a careful consideration of each child's trauma exposure, as well as the many interacting, developmentally influenced, and evolving ecological factors.

Diagnosing PTSD in Children and Adolescents

To facilitate appropriate PTSD-assessment referral, screenings can be completed following a specific traumatic event or individually as case history or symptomatic presentation suggest (see Stamm, 1996, for reviews of screening tools). When PTSD is suspected, preliminary assessment and diagnosis can be conducted in the school setting by supplementing a psychoeducational assessment battery (i.e., cognitive, academic, and behavioral measures) with a PTSD-specific protocol. Posttrauma assessment involves a complete review of the child's pre- and posttrauma presentation based on multiple sources of input and using multiple formats (i.e., direct observation; oral-report; test, interview, and questionnaire data; and reports of those familiar with the child; March, 1999; Thornton, 2001; Yule, 2001). To assess the complete spectrum of trauma sequelae, administration of comprehensive structured and/or semistructured interviews as well as trauma-specific measures are recommended (Cohen et al., 2000; Yule, 2001). Table 1 provides a listing of psychometrically evaluated PTSD-specific assessment tools for children. Finalized reports should include: (a) academic functioning (i.e., review of records; cognitive and academic assessments; and parent, child, and teacher reports); (b) behavioral functioning (i.e., behavioral assessments; observations; PTSD measures; and parent, child, and teacher reports); (c) symptom severity (i.e., PTSD measures); (d) diagnosis (i.e., comparison of child's presentation to age-specific diagnostic features, DSM-IV-TR criteria, and PTSD measures); and (e) developmentally sensitive recommendations including referral and/or in-school supports.

Table 1
Trauma Measures for Children and Adolescents

Child/Adolescent Measures	Age	Time to Administer	Domain Assessed	Format/Modality
Angie/Andy Child Rating Scales (A/A CRS) ¹	6–11 years	30–45 minutes	Complicated PTSD (DSM-IV)	Cartoon-based pictorial methodology with nonverbal, thermometer response format; Structured child-report; Evaluator reads prompts
Child PTSD Symptom Scale (CPSS) ²	8–18 years	15 minutes	PTSD diagnosis and symptom severity (DSM-IV)	Self-report (Developmentally appropriate language to maximize children's understanding of the items)
Child Posttraumatic Stress Reaction Index (CPTS-RI) ³	6–17 years	15–45 minutes	PTSD symptoms/severity (DSM-IV)	Semi-structured interview (Child and Parent versions)
Child Report of Posttraumatic Symptoms (CROPS) ⁴	8–13 years	5 minutes	Broad-spectrum of posttraumatic symptoms	Self-report (3rd grade reading level); Parent versions available (PROPS)
Child's Reaction to Traumatic Events Scale (CRTES; Formally the Impact of Events Scale for Children, IES-C) ⁵	Children	3–10 minutes	Psychological response to stressful life events (Targets intrusion and avoidance of the DSM-III-R)	Interview/Self-report questionnaire
Childhood PTSD Interview (CPTSDI) ⁶	Children/adolescents	30–34 minutes	PTSD (DSM-IV)	Semi-structured interview (3rd grade reading level; Parent form available)
Children's Posttraumatic Stress Disorder Inventory-DSM-IV ⁷	7–18 years	15–20 minutes	PTSD (DSM-IV)	Structured interview (Uses language that can be easily understood by children)
Diagnostic Interview for Children and Adolescents-Revised, The PTSD Module (DICA-R, PTSD) ⁸	6–17 years	90 minutes	PTSD (DSM-IV)	Semistructured interview
Los Angeles Symptom Checklist (LASC) ⁹	Adolescents/Adults	10–20 minutes	PTSD Symptoms (DSM-IV)	Self-report interview
My Worst Experience Scale (MWES) ¹⁰	8–18 years	20–30 minutes	Part I: Nature of the traumatic event; Part II PTSD symptoms	Self-report (Written at 3rd grade reading level, adult can read items along with younger children)

(Table 1 continues)

(Table 1 continued)

Child/Adolescent Measures	Age	Time to Administer	Domain Assessed	Format/Modality
Parent Report of Child's Reaction to Stress ¹¹	Children/Adolescents	30–45 minutes	PTSD symptoms (DSM-IV)	Parent report
Parent Report of Post-Traumatic Symptoms (PROPS) 1.0 ¹²	Children–14 years	5 minutes	Posttraumatic symptoms, oriented towards Type I (DSM-IV)	Parent report (3rd grade reading level or assistance)
Posttraumatic Stress Diagnostic Scale (PDS) ¹³	17–65 years	10–15 minutes	PTSD (DSM-IV)	Self-report (Reading level at 8th grade)
PTSD Checklist-Parent Report on Child (PCL-PR) ¹⁴	Children	5–7 minutes	PTSD (DSM-IV)	Parent report
Schillace Trauma Scale (STS) ¹⁵	Adolescents/adults	10–15 minutes	Impact of traumatic event	Self-report
Student Alienation and Trauma Survey (SATS; Formally the My Worst Experience Survey) ¹⁶	9–18 years	20–30 minutes	Part I: Nature of the traumatic school event; Part II: PTSD symptoms (DSM-IV)	Self-report (Written at 6th grade reading level, adult can read items along with younger children)
Trauma Symptom Checklist for Children (TSCC) ¹⁷	8–16 years	10–20 minutes	Posttraumatic distress and related psychological symptoms	Self-report (3rd grade reading level: Alternative form with no reference to sexual issues)
Traumatic Event Screening Inventory—Child Version (TESI-C) ¹⁸	4+ years	10–30 minutes	Traumatic events	Interview (Parent form also available: TESI-P)
When Bad Things Happen Scale (WBTH) ¹⁹	8+ years	10–20 minutes	PTSD (DSM-IV)	Self-report (3rd grade reading level, younger if child is assisted; An audiotape is available)

Note. ¹Friedman, 2001; Nader, 1997; Praver & Pelcovitz, 1996; ²Foa, Johnson, Feeny, & Treadwell, 2001; ³Foa et al., 2001; Friedman, 2001; March, 1999; Nader, 1997; ⁴Greenwald & Rubin, 1999; ⁵Friedman, 2001; Nader, 1997; ⁶Fletcher, 1996; ⁷March, 1999; Saigh et al., 2000; ⁸Friedman, 2001; Saigh et al., 2000; ⁹King, 1996; ¹⁰Friedman, 2001; Hyman & Snook, 2002; ¹¹Fletcher, 1996; ¹²Greenwald & Rubin, 1999; ¹³Axford, 2001; Foa, 1995; ¹⁴Ford & Thomas, 2000; ¹⁵Schillace, 1996; ¹⁶Hyman, Snook, Lurkis, Phan, & Britton, 2001; ¹⁷Biere, 1996; Friedman, 2001; ¹⁸Ford & Thomas, 2000; ¹⁹Fletcher, 1996; Nader, 1997.

Although the quality and quantity of PTSD-specific assessment tools available for school psychologists have increased (Nader, 1997; Thornton, 2001), trauma assessment presents many unique challenges. For example, it can be threatening, even symptom inducing, for a child to explore traumatic events and/or symptoms during assessment (March, 1999; Perrin, Smith, & Yule, 2000). In addition, child survivors often find the trauma experiences and symptoms difficult to verbalize, resulting in underreporting (March, 1999). Moreover, symptoms such as avoidance, numbing, and increased arousal, as well as a stressor-related etiology can be indicative of and/or integral to several other clinical disorders (APA, 2000). It is important that psychologists conduct a careful differential diagnosis and consideration of comorbidity for clinical disorders such as: Mood Disorders, other Anxiety Disorders, Brief Psychotic Disorder, Conversion Disorder, Substance-Related Disorders, and Obsessive Compulsive Disorder (APA, 2000; Yule, 2001). Finally, assessment of PTSD in children requires examination of the developmental and cognitive nuances of symptom manifestation (Lipschitz, Rasmussen, Anyan, Cromwell, & Southwick, 2000; March, 1999; Tierney, 2000).

Symptoms and Development

As current diagnostic criteria are not developmentally sensitive (Tierney, 2000), diagnosis of PTSD in children and adolescents depends on the psychologist's careful integration of the current state of knowledge regarding child development and symptom expression. Generally, symptom manifestation becomes increasingly similar to that explicated by the adult criteria as children age.

Preschoolers. For the verbally developing preschooler, symptoms are expressed in nonverbal channels. This age-specific, developmental feature creates diagnostic difficulties because more than one-half of the DSM-IV criteria for PTSD require a verbal description of a subjective state (Scheeringa, Peebles, Cook, & Zeanah, 2001). Symptomatic expression may include: acting out or internalized behaviors, nightmares and disturbed sleep pat-

terns, developmental regression, and clinging behavior (Pullis, 1998; Yule, 2001). Reexperiencing trauma may be expressed as generalized nightmares of monsters, rescuing others, or threats to self or others (APA, 2000; Yule, 2001). Traumatic play is often linked to themes of the traumatic events, is compulsive and repetitive in nature, and fails to relieve any of the accompanying anxiety (Cohen et al., 2000; Yule, 2001).

School-age children. At school-age, cognitive development presents with increasing verbal ability, formative temporal sequencing skills, and difficulty with abstract conceptualization. To a notable degree, symptoms continue to be expressed behaviorally and may include regressions (e.g., bed wetting, clinging behavior or anxious attachment, school refusal; Terr et al., 1999; Webb, 1994; Yule, 2001), less emotional regulation, and increases in externalizing or internalizing behavioral expression (e.g., fighting with peers, withdrawal from friends, poor attention, declining academic performance; Cook-Cottone, 2000; Yule, 2001). In addition, school-age children may not yet be capable of abstractly interpreting somatic, affective experiences inherent in PTSD symptomatology (e.g., anxiety, reexperiencing) and consequently describing these experiences by listing concrete physiological complaints (e.g., stomach aches and headaches; Cook-Cottone, 2000). Fears of going to sleep or being alone, sleep disturbance, clinging to others, and event-specific fears have also been reported (Cohen et al., 2000; Terr et al., 1999; Webb, 1994; Yule, 2001). Reexperiencing is often presented as elaborate enactment of the traumatic event or a perseverative, verbal description absent of appropriate affective expression (Johnson, 1998). Traumatic play at this age is more complex and sophisticated; can involve specific themes; often includes writing, drawing, and pretending; and becomes script governed (Johnson, 1998; Terr et al., 1999). Although noted in clinical reports, studies of trauma sequelae rarely describe cognitive temporal distortions (Cohen et al., 2000).

Symptoms in preadolescents and adolescents. Terr and colleagues (1999) sug-

gested that the reciprocal relationship between emotions and thought may account for reduced adolescent symptomatology. That is, preadolescents and adolescents are more able to cognitively process trauma integrating the experience into the context of life experiences. With age, symptoms become increasingly similar to adult manifestations (Cohen et al., 2000). However, for adolescents, abstract conceptions of identity, future, safety, and connection are vulnerable to alterations (Cook-Cottone, 2000; Johnson, 1998). For example, Yule (2001) described the adolescent's sense of foreshortened future (e.g., diminished expectations of getting married, establishing a career, and experiencing a normal life span). Those with chronic PTSD may present with self-injurious behaviors, suicidal ideation, conduct problems, dissociation, derealization, depersonalization, and/or substance abuse, which can mask the posttraumatic etiology of the disorder (Cohen et al., 2000; Johnson, 1998).

Cognitive and Academic Implications of PTSD

Research suggests that children who have experienced traumatic stress may be at-risk for academic problems (Lipschitz et al., 2000). The normal development of neurobiological modulatory systems may be compromised, thereby negatively affecting activity level, capacity for reflection, and focused attention. These variables are crucial for normative academic achievement (Johnson, 1998; Pynoos, Steinberg, & Goenjian, 1996; Siegel, 1999; van der Kolk, 1996). To illustrate, Barnett (1997) indicated that abused, maltreated, or neglected children demonstrated lower scores on cognitive measures and less school achievement than nonabused, matched controls. Schwab-Stone and colleagues (1995) found that trauma exposure and feeling unsafe significantly predicted grade retention and lower child-reported grades. Lipschitz and colleagues (2000) found that girls with PTSD were significantly more likely to fail a course or grade than girls without PTSD. In addition, research conducted by Delamater and Applegate (1999) found preschool children

diagnosed with PTSD to be at increased risk for developmental delay.

Long-term (Type II) exposure may be especially damaging in terms of psychoeducational development. To illustrate, Neumberger (1997) suggested that adults who experienced continuous abuse or stress as children experienced shrinkage of the regions of the brain implicated in memory, learning, regulation of affect, and emotional expression. Language processing may be uniquely affected (Pynoos et al., 1999; Siegel, 1999; van der Kolk, 1996) as severe stressors may impair integration of left hemisphere functioning (van der Kolk, 1996). Trauma may interfere with the formation of narrative coherence, essential to competencies in communication, reading, and writing (Pynoos et al., 1999) and some research has pointed to specific effects in reading (Driver & Beltran, 1998; Pynoos et al., 1999; Rynard, Chambers, Klinck, & Gray, 1998; Schwartz, McNally, & Yeh, 1998). It is important to note that some researchers have not observed academic effects (Sack et al., 1999; Wenz-Gross & Siperstein, 1998) and others have associated effects with preexisting difficulties (Pynoos et al., 1996; Yule, 1991). These findings underscore the importance of controlling for pre-trauma functioning.

Intervention Strategies and School Reintegration

The following explicates intervention strategies for school psychologists delineating among appropriate school practices and supports and interventions in need of additional study. For students whose symptomatology or trauma experience resulted in an extended absence, a model for school reintegration is proposed.

Intervention Strategies

The school psychologist can play a consequential role in treatment and recovery processes in PTSD. Notwithstanding, therapeutic interventions should be based within the school setting only when: (a) comprehensive assessment has been completed; (b) it is determined that school-based support is the appropriate, least restrictive level of intervention; (c) par-

ents have been informed of all treatment options; (d) the child is experiencing adequate adjustment and academic success with intervention; and (e) consultation, supervision, and referral are readily utilized by the school psychologist (Cook-Cottone, 2000). Of note, as with diagnosis, treatment issues are sometimes complicated by the manifestation of associated psychopathology. Critically, the school psychologist must function within the ethical parameters predicated by training, refer and/or consult when appropriate, and use empirically guided interventions (Cook-Cottone, 2000).

Cognitive behavioral techniques.

Generally, it is believed that effective trauma treatments help to establish desensitization of trauma-reminiscent stimuli, a reduction of avoidance-related symptomatology, and more normative neurological processing (Yule, 2001).

Cognitive behavioral therapy (CBT) currently shows the most promising empirical efficacy data (Goenjian, Karayan, & Pynoos, 1997; March, Amaya-Jackson, Murray, & Schulte, 1998; Perrin et al., 2000; Yule, 2001). It is believed that CBT works by uncoupling the pairing between the traumatic stimuli/cognitive events and the anxiety response and supplants relaxation response and more logical thinking (Basco, Glickman, Weatherford, & Ryser, 2000). The CBT protocol combines stress management and relaxation techniques, cognitive restructuring, and exposure techniques (Cohen et al., 2000; March et al., 1998). Stress management strategies include breathing techniques, progressive muscle relaxation, thought stopping, and positive imagery (Herman, 1992; King et al., 2000; Najavits, 2002). Mastering anxiety and symptom management techniques are believed to contribute to self-efficacy and confidence, as symptomatic children begin trauma exposure, symptom management, and/or reintegration work (Cohen et al., 2000; King et al., 2000). Cognitive restructuring is intended to systematically address each cognitive distortion and help the child coconstruct more practical attributions (Cohen et al., 2000; Farrell, Hains, & Davies, 1998; March et al., 1998). Cogni-

tive restructuring is used to address daily coping, risk appraisal, overresponsibility, and negative assumptions regarding the traumatic event (Cohen et al., 2000; March et al., 1998; Najavits, 2002). The restructuring of faulty, posttrauma cognitive systems helps to place the traumatic experience in a more adaptive cognitive context (Farrell et al., 1998).

Notably, stress management and cognitive restructuring techniques are appropriate for use in both the school and clinic settings. During school implementation, careful monitoring of symptomatology and therapeutic response can facilitate any necessary referral. Referrals are warranted when symptoms shift in severity from mild to moderate or severe (i.e., they begin to interfere with social, occupational, or school functioning; APA, 2000). Some specific examples include: (a) alterations in emotional or physiological presentation (e.g., flat or depressed affect, panic attacks, fears of being alone, hyperarousal, and difficulties with emotional regulation); (b) changes in cognitive or learning experience (e.g., frequent intrusive memory experiences, suicidal ideation, and memory disturbances that interfere with learning); and (c) behavioral symptoms (e.g., reenactment behaviors during school, manifestation of traumatic images in play and drawing, behavioral regressions, self-mutilation, and suicide attempts; Osofsky, 1995).

Direct or indirect exposure may be a critical component of successful treatment (Basco et al., 2000; Cohen et al., 2000). It is important to note that during the exposure-based component of the therapeutic protocol, children may manifest symptom exacerbation (Cohen et al., 2000). Consequently, exposure techniques are not considered appropriate for the typical school setting. However, the school psychologist can provide school-based supports for children and adolescents during exposure treatment. For example, school-based supports might include: coordination of communication among school personnel, family members, and the treatment team; assistance with student symptom management and monitoring; and provision of treatment-consistent stress management and cognitive restructuring techniques. Exposure is typically coupled with

relaxation techniques to alter the trauma-remniscent response. In direct exposure, or flooding, the child is exposed to the threatening stimuli (e.g., use of trauma-remniscent props; Basco et al., 2000; Saigh, 1987). Conversely, indirect exposure involves a systematic, gradual exposure to increasingly arousing or anxiety-producing aspects of the trauma experience (i.e., systematic desensitization; Basco et al., 2000; Cohen et al., 2000; King et al., 2000). Building on the child's initial, typically brief, and general descriptions of the traumatic experience, in each session the child is directed to increase descriptive detail and then recall event-specific thoughts and feelings (Cohen et al., 2000). This process may incorporate varying expressive modalities including drawing, role-playing, mock interviews, and writing (Cohen et al., 2000; King et al., 2000).

The later 1990s showed the emergence of increasingly sound research demonstrating the effectiveness of comprehensive, manualized, cognitive behavioral protocols (Deblinger, Lippmann, & Steer, 1996; Farrell et al., 1998; Goenjian et al., 1997; King et al., 2000; March et al., 1998). These protocols typically incorporate stress management and relaxation techniques, cognitive restructuring, and exposure techniques (Phillips, 2001) and are typically administered by professionals with extensive clinical training, with the school psychologist playing a supportive role. Continued research is needed as it is difficult to ascertain which components of the comprehensive, therapeutic interventions yielded the positive outcomes. In addition, many of these studies had significant methodological limitations (i.e., experimental control, sample size, extended follow-up latency), which affect the internal and external validity of the findings.

Additional interventions in need of research. Currently, CBT protocol remains the most empirically supported model for treating PTSD in children and adolescents. Trauma interventions showing emerging empirical support include play, art, and narrative therapies and psychopharmacology. Because of issues related to language development in children, play and art therapies may have a unique role

in the treatment of pediatric PTSD. That is, visually stored trauma memories may be more readily expressed through nonverbal modalities (Kazlowska & Hanney, 2001; Osofsky, 1995; Stronach-Buschel, 1990). Narrative techniques that have shown some positive effects include: journaling, bibliotherapy (i.e., therapy using children's literature), and constructivistic bibliotherapy (i.e., creation of memory or trauma scrapbooks; King & Holden, 1998; Lowenstein, 1995; Pennebaker & Graybeal, 2001). Finally, medication may be proven useful as an augmentative treatment for those children and adolescents not responding to psychological interventions alone (see Phelps, Brown, & Power, 2002). Though efficacy studies are emerging (Phelps et al., 2002), replicated controlled empirical exploration of the aforementioned treatments of PTSD in children are needed (Cohen, Mannarino, & Rogal, 2001; Donnelly, Amaya-Jackson, & March, 1999).

School Reintegration

Psychoeducational implications and vulnerability to relapse can be lessened with effective reintegration planning and implementation. Currently, there is a dearth of information regarding effective school reintegration and PTSD (Cook-Cottone, 2000). Consequently, the proposed reintegration model outlined below is informed by current knowledge related to school reintegration following serious medical conditions (i.e., cancer) and psychiatric placement, as well as proposed PTSD guidelines (Cook-Cottone, 2000). Current models embrace an ecological approach to understanding the status and needs (Prevatt, Heffer, & Lowe, 2000; Shields & Heron, 1995; Worchel-Prevatt et al., 1998). In these models, the child's current functional capacity (including symptom manifestation and coping ability) is considered within the context of the network of individual and ecological stressors germane to the reintegration transition. The proposed school reintegration model is intended for children whose traumatic experience and consequent symptomatic expression result in absence from school and clinical need for supported reintegration. A child suffering with

a less severe symptom expression may require less restrictive services. Therefore, reintegration services should be based on need.

Step 1: Establishing the relationship.

The therapeutic and supportive relationship is key to successful school reintegration (Pullis, 1998). The school psychologist can act as educational consultant, or liaison, between the three subsystems—home, school, and hospital or inpatient setting (Prevatt et al., 2000; Rynard et al., 1998; Shields & Heron, 1995). Armstrong, Blumberg, and Toledano (1999) found, when working with children with cancer, smooth school transitions were facilitated by: shared literature, multispecialty child conferences, cross disciplinary workshops, school personnel visits to the hospital setting, and continuing professional-to-professional consultation. In addition, a proposed program for reentry with runaways emphasized the importance of preentry initial contact, as well as ongoing support (Rohr & James, 1994). If a pretrauma relationship does not exist, the school psychologist may want to collaborate with psychiatrist(s) and/or psychologist(s) working with the student prior to reentry. The school psychologist will need to obtain mutual releases of information, consider joint sessions, and setup ongoing consultation.

Step 2: PTSD recovery education.

Current models recommend educating the family, school personnel, and the child as part of the reintegration process (Prevatt et al., 2000). Topics important for review include: the recovery process, relapse prevention, coping skills and relaxation, epicycles in healing (Johnson, 1998), the stress and possible symptomatic consequences of school reentry (Gaensbauer, Chatoor, Drell, Siegel, & Zeanah, 1995), and the importance of self-monitoring. It is important to note that peer education is not currently included as part of the PTSD reintegration protocol. In cancer research, the long-term benefits of peer education programs have not been demonstrated and some important considerations have not been addressed such as possible iatrogenic effects and costs to already overburdened instructional time (Prevatt et al., 2000).

Step 3: Individualized plan development.

The individualized plan for reintegration should be based on an assessment of the child and family's needs (Prevatt et al., 2000). Plans should identify needs, goals, and treatment guidelines, and include a calendar of appointments and schedules, a list of names and phone numbers, and a plan for meetings and conferences (Prevatt et al., 2000). It may become necessary to include a goal of providing safety within the context of appropriate boundaries. This might include setting firm limits about office visits, describing and modeling appropriate behaviors, and reminding the student that learning good boundaries is part of healing (Rosenbloom & Williams, 1999). A crucial component of the individualized plan is inclusion of preventative sessions addressing anniversaries, high stress circumstances, or crisis (Ernsperger, 1998; Rosenbloom & Williams, 1999). These sessions should be scheduled, on identified dates, before reintegration is attempted. This can contribute to feelings of security and competence, as well as model appropriate preparing for vulnerable periods (Rosenbloom & Williams, 1999).

Step 4: Facilitated integration.

The goal at this stage is toward independence and regular, full-day attendance. Clinical decisions should be made regarding length of the initial school visit and the process of extending the school visit to a full day. It is important to consider factors such as: inpatient status, length of time absent from school, premorbid functioning data, level of support among peers and family, the student's wishes, self-regulatory skills, and mental health status. In this stage the reintegration plan is implemented.

Step 5: Independent integration.

Step 5 represents the ultimate goal of a successful reintegration plan, independent functioning. Throughout the process, the focus is on movement toward independence and self-monitoring (Ernsperger, 1998). As the student gains independence, the school psychologist should discuss pruning back, or fading, supports. Child study team and parent contacts are often used to monitor success.

Though not addressed in this review, prevention efforts (e.g., school emergency response plan and teams, and relaxation and coping training) may increase resiliency for children who are at-risk (Pyne et al., 1999), as well as those who have been traumatized, yet are asymptomatic (i.e., delayed onset; Herman, 1992; Johnson, 1998).

Conclusions

School psychologists play a key role in the successful identification, treatment, and reintegration of children and adolescents suffering from the effects of traumatic stress. Collaboration with other school professionals and provision of the appropriate psychoeducational assessment and treatment referral will enhance the student's chances for academic success in school. The school psychologist can facilitate therapeutic and supportive conditions in the school setting through use of cognitive behavioral techniques such as stress management and cognitive restructuring, as well as by the implementation of school reintegration protocol. Review of ongoing research will be necessary to monitor advances in alternative therapies and reintegration models in the treatment/posttreatment supports of pediatric PTSD.

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