

Posttraumatic stress disorder in infants, toddlers, and preschoolers

Play therapy, psychoeducation, and family support are key when trauma affects children in the preverbal and early verbal years.

ABSTRACT: Posttraumatic stress disorder in children, like pain control and other issues of children's perceptions of their environment, is a relatively new concept. Although studies are rare, we do have an understanding of special diagnostic criteria that should be considered, along with the role played by attachment, temperament, memory, cognition, and affect regulation. Repeated trauma may affect children profoundly during sensitive periods of brain development through putative biological stress mediators. This response to trauma may also partially explain the high incidence of psychiatric comorbidity in these children. Developmentally appropriate assessment and therapy require awareness of the nonverbal (behavioral) presenting features in the very young and sensitivity to the caregiver's stress and attachment issues. Interview and therapeutic techniques used in tertiary care and other settings include play, storytelling, psychoeducation, grief work, and family support. In addition to being aware of diagnostic criteria and treatment strategies, physicians should know about medicolegal pitfalls and possible therapist reactions when caring for young children with posttraumatic stress disorder.

Posttraumatic stress disorder (PTSD) in infants and young children is a relatively new concept. Awareness of this phenomenon has grown out of knowledge of PTSD in adults and older children, in combination with case reports highlighting unique aspects of trauma in small children. There is relatively little research on this subject, but the field is growing. At this time, we know that:

- PTSD does occur in the preverbal and early verbal years.
- PTSD has some unique presenting features related to the developmental level and other contextual features of the child's life.
- The *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR)*¹ criteria are often not sensitive enough to diagnose PTSD in infants and young children.
- Therapy is possible using play, behavioral techniques, psychoeducation, and family support.
- PTSD can occur in different forms based on the nature of the trauma itself.

Epidemiology

There are no studies regarding the prevalence of PTSD specifically in very young children. Even in the area of older youth, there is some variation

in prevalence statistics. The *DSM-IV-TR* indicates that 1% of people in the general population have been diagnosed with a full syndrome and 14% with a partial syndrome. Others have found a higher prevalence. In contrast to the *DSM-IV* numbers, Hidalgo and Davidson found prevalence of 8% to 9%² in the general population and Breslau found a similar 1:12 ratio in the adult population.³ Thus, it is probably more appropriate to look at the percentage of individuals exposed to trauma who develop PTSD rather than the percentage of the general population. Here the estimates indicate that 15% to 24% of exposed individuals develop PTSD. Most authors also feel that the type of exposure is significant, with some severe exposures, such as watching the sexual assault of a parent, resulting in an incidence rate of almost 100%, while others, such as a minor dog bite, may result in much lower rates of PTSD.⁴

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Historical overview

PTSD was first described as “shell shock” in war veterans, a diagnosis that frequently resulted in a dishonorable discharge from the army. In terms of children, early groundwork was laid by Anna Freud,⁵ who looked at traumatized war orphans; Rene Spitz, who described “hospitalism” in children who were severely neglected in institutions;⁶ and David Levy, who published a landmark study in 1945 on psychic traumas connected with childhood surgeries.⁷ More recently, Lenore Terr has produced a strong body of work, including a study of 26 youngsters who were kidnapped and buried in California.⁸ She also looked at what happened to memories of early trauma in 20 youngsters who had suffered psychic traumas before age 5. This latter study was noteworthy in that these children had forensic evidence supporting the specific trauma histories.⁹ In 1993, the first book chapter about posttraumatic reactions in children from birth to age 3 was published.¹⁰

Diagnostic criteria

In 1994, the Zero to Three organization listed “traumatic stress disorder” in their manual classifying mental health and developmental disorders of infancy and early childhood *DC: 0–3*.¹¹ Subsequently, a study compared the *DSM-IV* criteria with the *DC: 0–3* criteria in infants,¹² and this study was later expanded to look at trauma in preschoolers.¹³ What was discovered in both of these studies is that the *DSM-IV* criteria diagnose very few cases, even in the most extremely disturbed infant survivors of trauma. The explanation offered is that a verbal report of symptoms is required for nearly one half of *DSM-IV* criteria, which is beyond the developmental capacity of most of these children. It has also been noted that the “B” set of diagnostic criteria is the only trauma-

Table 1. Symptoms of posttraumatic stress disorder in children 0 to 36 months.

	0–6 months	6–12 months	12–18 months	18–24 months	24–36 months
Hypervigilance, exaggerated startle response, irritability, physiologic deregulation and/or withdrawal	X	X	X	X	X
Increased anxiety in strange situations, angry reactions, sleep disorders, active avoidance of specific situations		X	X	X	X
Clinginess to caretaker, over/under use of words related to the trauma			X	X	X
Nightmares, enlarged verbal preoccupations with symbols of trauma				X	X
Symptoms seen in older children, as described in <i>DSM-IVR-TR</i> *					X

Adapted from: *Handbook of Infant Mental Health*¹⁰

* A PTSD diagnosis requires all of the following: A. Trauma event. B. One or more re-experiencing symptoms, e.g., nightmares. C. Three or more avoidance symptoms, e.g., avoiding places, activities, and people that arouse recollections of trauma. D. Two or more symptoms of persistent arousal e.g., hypervigilance or exaggerated startle response. E. Duration greater than 1 month. F. Clinically significant distress or impairment.

specific one. These studies conclude that there is in fact validation for the recommended modifications of *DSM-IV* criteria to deal with infants, toddlers, and preschoolers. The Infant Psychiatry Clinic at BC Children’s Hospital routinely uses criteria from *DC: 0–3R*,¹⁴ the second edition of the Zero to Three manual. This allows more highly symptomatic young children to receive a diagnosis and, in turn, appropriate treatment.

Etiology and individual differences

It is as important to consider the individual characteristics of the child who is experiencing the trauma as it is to look at the features of the trauma itself. Recent studies have shown, somewhat surprisingly, that the most potent variable affecting the degree of trauma and its resolution is the perceived threat to

a primary caregiver. While this makes sense from an attachment perspective, it is also crucial to consider the developmental capacity of a given child in assessing the effects of trauma and/or the presence of PTSD.

PTSD per se can occur in infants 9 months of age or older. Prior to this, infants can have conditioned responses to fear, which certainly can be significant, but do not seem to represent PTSD as we understand it. Actual manifestations of PTSD vary during different periods of infant development, as seen in **Table 1**. When considering the role of developmental capacities in PTSD, the following factors must be taken into account.

Temperament. While there are no specific studies on this, children with more difficult temperaments can be expected to have more severe or com-

plex reactions to trauma.

Cognitive functioning and level of comprehension. These will inevitably affect the child's reaction.

Memory and verbal expression. These two features go together in the sense that the right brain is dominant for approximately the first 18 months of life¹⁵ and the memory that a child lays down during this time is of a non-verbal or "implicit" type. Feelings associated with memories are encoded in somatic and sensory areas, which are unconscious, but not necessarily "repressed" in the traditional sense of the term. The implication is that just because children cannot or do not talk about their feelings does not mean that feelings are not there. Another way of looking at this is that some of the memories may be in pictures that are triggered by sensory reminders to the limbic system and lower centres of the brain. Clinicians and researchers have theorized that brain development, particularly of limbic structures, accounts for the fact that age 3 (28 to 36 months) appears to be an approximate cut-off separating the children who will have absent or spotty verbal memories of their traumas from those who will have a full verbal recollection. Some others have noted that verbal recollections appear to require a degree of conscious awareness, while behavioral memories and enactments do not.⁹

Attachment and affect regulation. Bowlby¹⁶ and Schore¹⁵ along with other investigators have noted the vulnerability of children with less secure attachments. Schore has focused particular attention on the type D (disorganized/disoriented) attachment pattern, where the infant displays disoriented, apprehensive, contradictory, or chaotic behaviors upon reunion with the caregiver. He points to this type D attachment pattern as one cause for PTSD (see "The biology of early trauma," below). This may help to

explain why only some individuals exposed to traumatic stress will develop PTSD. The caregivers in the type D attachment situation are characterized in the literature as "frightened and frightening" and, particularly in the case of the "frightening" caregiver, the child is in a dilemma. The person who is supposed to be providing safety and security is also the perpetrator, presenting the vulnerable child with a terrible approach-avoid situation. Currently, the literature strongly supports a much higher incidence of type D attachment patterns with children of parents who have a history of unresolved trauma and loss.¹⁷ Type D attachment can work at the very earliest level of "implicit-unconscious mechanisms" to limit a child's ability to communicate and read emotional states of self and others. It can also contribute to difficulties maintaining interactions with a social environment, difficulty using higher levels of defences at a later age, lower empathic capacity, and more difficulty in recovering from stressful states. Critical periods of brain development (especially the first 2 years of life) represent a time when attachment functioning and caregiver interactions can establish either resilience or vulnerability toward trauma.¹⁵ Affect dysregulation is now seen to be a fundamental mechanism of all psychiatric disorders.¹⁵ Type D early "relational trauma" could predispose a child to more chronic expressions of PTSD.

The biology of early trauma

Trauma is an external factor that clearly appears to change brain chemistry and probably structure. While these neurobiological changes¹⁵ are beyond the scope of this article, other aspects of biological change should be mentioned. For example, Perry and colleagues¹⁸ have considered how trau-

matic "states" become "traits." Perry has described how infants and older individuals respond to a threat along two pathways. One is the well-known "fight or flight" response, which Perry calls the arousal continuum, whereby a progression of biochemical reactions result in increased cortisol (as well as other more poorly understood phenomena). The other pathway Perry describes is the dissociative continuum, whereby there are gaps in the stream of consciousness. Endogenous opiates and activation of the parasympathetic nervous system lead to the "freeze or surrender" response, with decreased movement and decreased attention. With repeated activation, the arousal pathways can make a child with anxiety or trauma appear to have attention deficit hyperactivity disorder (ADHD), while older children with the more dissociative aspects may appear to have not only attention problems but also learning disabilities, memory problems, and behavior problems.¹⁸

Children with PTSD can certainly manifest a combination of arousal and dissociation, and any given child may demonstrate different types of reactions to a given trauma. Physical pain, along with the nature of the trauma, may also modify these manifestations of PTSD.

It should be noted that dissociation and dissociative disorders per se are closely related to psychic trauma and can be looked at as both a neurobiological reaction and a psychological defence.

Clinical presentation of trauma and PTSD

Trauma can present in a relatively obvious fashion, with observable behavioral changes that are recognized by the child's caregivers. It is not uncommon, however, to have a partially hidden or confusing presentation, particularly where a child has been repeatedly abused or the

entire history of the trauma is not known. Terr has called PTSD the “rheumatic fever” of child psychiatry,¹⁹ and this refers to the fact that if not recognized and treated early on, the disorder can have multiple manifestations later in life. These manifestations can include a tendency toward affective, dissociative, or personality disorders, substance abuse, and conduct problems, to name a few. Terr has described type I, type II, and crossover-type traumas in a landmark paper.¹⁹ While this information is not included in the *DSM-IV*, it is highly useful when looking at survivors. Type I represents a single-blow trauma, such as a motor vehicle accident or a dog bite from which there is recovery. Type II refers to multiple and repeated traumas, such as covert sexual abuse by a relative. Terr notes that in type I trauma, the memories are likely to be more fully elaborated, with a tendency to ruminate over the details of the trauma, whereas type II can have spotty memories or some amnesia with aspects of denial, psychic numbing, dissociation, and even changes in pain tolerance. She refers to crossover-type traumas as those involving a single incident with long-lasting effects, such as an accident that results in permanent facial scarring.

The fact that there can be multiple presentations over time, different combinations of symptoms, and unknown or unreported trauma makes diagnosing PTSD challenging. In addition, countertransference may significantly interfere with the therapist’s/physician’s interpretation of symptoms. If the personal experience and attitudes of the clinician are not carefully examined in difficult cases (e.g., with the help of a colleague), the clinician may be more likely to overdiagnose or, conversely, minimize a given situation.

Assessment of PTSD in infants, toddlers, and

preschoolers

Once PTSD has been diagnosed, it will depend on the practitioner’s level of comfort whether referral for further specific assessment is required. If necessary, referral can be made to a private psychologist, psychiatrist, or other infant mental health specialist, or to the Infant Psychiatry Department at BC Children’s and Women’s Hospital and specialized programs, such as the Alan Cashmore Centre in Vancouver. Outside major urban areas, where referral can take longer, it is important to assess the child as thoroughly as possible and to focus on safety and avoidance of retraumatization, whether accidental or otherwise, within the child’s environment. In all cases, psychoeducation should be provided, since it can be very effective when presented by a trusted health professional, such as a family physician.

Any assessment should include the following steps:

- Obtain a detailed history of the trauma with the nonoffending parent or caregiver present. This should include associated events and any interventions undertaken to date. Some interventions can be as traumatic as the initial event (e.g., hospital care involving surgery).
- Obtain a simple verbal description from the child, depending on the child’s age, emotional readiness, and willingness.
- Obtain a chronological history of all new symptoms by asking clear questions about whether these symptoms, even in milder forms, predated the trauma.
- Determine the effect the trauma has had on attachment behaviors for the child and caregiver(s).
- Note the reaction of caregivers and consider individual treatment if needed, as parental and family functioning are key predictors of outcome.²⁰

- Complete play assessment of the child, allowing the child to make use of play objects and observing for specific themes particularly related to the trauma. While this has been used extensively and written about in the literature, it has been difficult to validate procedurally. Nonetheless, it is very helpful to see what a nonintrusive play assessment can achieve. Generally, it is recommended that the caregiver(s) be present during the assessment.
- Consider medicolegal consequences. The practitioner must maintain a neutral, supportive stance that demonstrates a willingness to listen and to observe whatever communications the child may offer. If the identity of a suspected abuser has never been revealed, questions mentioning the name or role of the suspected individual are clearly contraindicated. This also applies when you suspect witnessed trauma (whereby the child was not the primary target of the action).

Frequently, other conditions occur along with trauma in this age group. It is helpful, when possible, to delineate whether the symptoms are related to the trauma or whether they are pre-existing diagnoses that may influence how the trauma presents itself. Some diagnoses to consider are shown in

Table 2.

Treatment of PTSD

There are no specific studies regarding

Table 2. Differential diagnoses to consider during assessment of PTSD.

Attention deficit hyperactivity disorders
Phobias
Attachment disorder
Complicated grief/bereavement
Depression
Medical illness

treatment in this age group, but the following tenets are paramount:

- Establish safety in the child's life and in the playroom.
- Help to decrease the intensity of overwhelming affects. This involves maintaining or beginning appropriate soothing activities and routines and assisting the caregiver to provide these at the appropriate times.
- Help the young child establish a coherent narrative of the trauma using the child's own terms, including art and play tools. This commonly involves play therapy and the use of metaphor. Children who do not have or cannot access their feelings verbally can often react appropriately to an injured animal in play through the use of figurines or puppets.
- Promote integration and mastery of trauma. This can often be achieved through play therapy, whereby the child acts out several roles, including that of the survivor, the parent (who may have been absent at the time of the trauma), the teacher, the perpetrator, and perhaps other helpers such as police officers or paramedics.
- Address the "ripple" effects of trauma (e.g., negative behavior with other children at preschool and with extended family). Help the family to understand and not punish the child's new behaviors, which may be oppositional or isolative.
- Support the family/caregivers.

Prevention of PTSD is actually the first point in treatment.¹⁹ Ideally, a safer society would permit primary prevention, but more commonly we see secondary prevention occurring with society's early response to disasters, child protection awareness at all levels, and screening of large populations of traumatized individuals, such as children who have survived disasters.

Depending on the severity of trauma,

the therapist may need to shift the focus to trust, bonding, and self-esteem-building through pleasant activities. However, the child will still need to re-experience parts of the trauma in tolerable doses within an empathic setting. This key therapeutic principle has always been part of play therapy, and is consistent with cognitive-behavioral therapy (CBT) strategies as well, although classic CBT is not widely applicable to treatment of the very young child. Even for very young children, some behavioral desensitization can be appropriate. For example, the child might be gradually and gently exposed to a feared object, such as a car seat after an accident or a room where a traumatic event occurred. Caregivers should be informed that children may have more nightmares or re-enactment behaviors while the therapist is exploring the trauma and gradually titrating the child's exposure to materials and discussions related to the trauma. In fact, the caregiver may require treatment and desensitization in order to support and comfort the child during this stage of therapy. Throughout the process, it is important to monitor the caregiver's reactions. Psychoeducation of family members may involve helping them recognize their own trauma and need for individual or group therapies (or both). Marital difficulties, when recognized during treatment, should be addressed.

Reinforcement of the child and caregiver's adaptive behaviors is very important. This and focusing on the positive can serve to remind the child and family of the things that they still have in their lives. Children and caregivers who appear to be doing well should still be monitored for delayed effects of trauma, as these have been documented.

At more advanced developmental levels, the cues that can trigger trauma

become more complex. Psychoeducation and intermittent sessions with caregivers can help children understand the generalization of fears. For example, a child who was bitten by one animal may suddenly be afraid of many animals.

Medication

There are a few uncontrolled trials of medication use in children with PTSD. In a study of clonidine, the agent was found to decrease hyperarousal symptoms for several children.²¹ Medication for PTSD is at most an adjunct for patients of any age, and in this age group in particular it is not a major feature of treatment. If medications are used, specific symptoms need to be targeted. Following from this, of course, the symptoms of comorbid conditions may need to be treated with medications, based on their severity, although the value of medications for children with PTSD is at best unclear.

Other considerations

For relatively asymptomatic children and parents, psychoeducation, screening, and prevention awareness may be adequate as long as further assistance can be arranged as needed. Duration of treatment will vary with the severity and duration of the trauma, and to the individual characteristics of the child and family.

In the special case of trauma combined with grief, an individualized approach is required. Both Eth and Pynoos²² and Cohen and Mannarino²³ have specifically addressed this issue. There seems to be consensus that not all family losses constitute trauma *per se*. In the cases where there is "traumatic grief" (e.g., after a child witnesses a sudden death) it is recommended that the trauma be dealt with first so that the child will be able to retrieve positive feelings and memories of the deceased.

Conclusions

Posttraumatic stress disorder undoubtedly presents unique challenges in our youngest patients, especially in infants and toddlers. We need to increase awareness of this diagnosis in the pre-verbal and early verbal years, and to keep assessment and referral in mind. This awareness may also be needed when it comes to the children of an adult patient being treated for PTSD by a psychiatrist or therapist.

It should be remembered that *DSM-IV* criteria are often not sensitive enough to diagnose PTSD, and that even in the adult population, individuals with partial criteria are still referred for therapy if their symptoms are debilitating. This should apply to very young children as well. Infants, toddlers, and preschoolers can all benefit from the treatments described here, which can be adjusted to the many forms PTSD may take.

When evaluating and treating children with a diagnosis of PTSD, we must always see the disorder within an attachment context and take into account the developmental capacities of the child.

Competing interests

None declared.

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Posttraumatic stress disorder (PTSD) in children and adolescents is a severe, often chronic, and impairing mental disorder. PTSD is seen in some children (and n.Â APPROACH TO TREATMENT â€” Our approach to treating posttraumatic stress disorder in children, including selecting among psychotherapies and medications, is described separately. (See "Approach to treating posttraumatic stress disorder in children and adolescents".) post-traumatic stress reactions in children, while research has only recently begun to investigate the effectiveness of different treatments. for children with PTSD. This article discusses issues regarding the assessment and diagnosis of post-traumatic stress reactions in children. at different developmental stages, considers neurobiological, cognitive and other factors that are theorized to increase the risk of PTSD. in trauma-exposed children, and evaluates current psychotherapeutic and pharmacotherapeutic treatments for childhood PTSD. The.Â posttraumatic stress disorder in victims of violent crime. *Am J. Psychiatry* 1996;156:360-6.Â traumatic stress disorder in preschool children. *J Am Acad Child. Adolesc Psychiatry* 1996;35:1247-9. 2006. Post-traumatic stress disorder after childbirth in Nigerian women: prevalence and risk factors. *BJOG*. 113(3):284-8. Affleck G, Tennen H and Rowe J. 1991. *Infants in crisis: How parents cope with newborn intensive care and its aftermath*, Springer-Verlag, New York. Bailham D and Joseph S. 2003. Post-traumatic stress following childbirth: a review of the emerging literature and directions for future research. *Psychology, Health, and Medicine* 8:159-168. Beck CT, Gable RK, Sakala C, and Declercq ER. 2011. Posttraumatic stress disorder in new mothers: results from a two-stage U.S. national sur