

PTSD in Pre-School Children: A Review and Synthesis of Research on the Need for a Separate DSM Category

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There has been a surge of research on Post-Traumatic Stress Disorder (PTSD) in recent years, especially in the context of US military men and women returning home from duty from such places as Iraq and Afghanistan. Since the inclusion of PTSD in the Diagnostic and Statistical Manual 3rd edition (DSM-III) in 1980, research in the field has been plagued by controversy. Spitzer, First, and Wakefield (2007) argue that the diagnosis of PTSD has generated more controversy than any other mental disorder with regards to the threshold levels for diagnosis, specific diagnostic criteria, clinical utility of the diagnosis, and true prevalence rates in different populations. Other researchers, such as Scott (1990) and Summerfield (2001), go so far as to question the objectivity of PTSD as a mental disorder because its introduction into the DSM-III was based heavily on the social and political context of the post-World Wars and Vietnam War era. The connecting link across all the different facets of the controversy is that PTSD as a diagnostic category has questionable validity.

To take the debate one step further, questions regarding the validity of the diagnosis of PTSD in adults seem trivial compared to the discussion on the utility of the criteria in children. Vietnam veterans were the impetus to include a disorder category in the DSM-III for PTSD. The diagnostic criteria are therefore centralized around adults, yet young children are diagnosed under the same category (Kaminer, Seedat, & Stein, 2005). The non-specific, non-developmentally sensitive criteria may explain why the diagnosis rate for PTSD in preschool children appears to be so low (Scheeringa, Wright, Hunt, & Zeanah, 2006; Scheeringa, Zeanah, Myers, & Putnam, 2003; Zeanah & Gleason, 2010). The DSM-IV-TR (American Psychiatric Association [APA], 2000) does comment on some special considerations when assessing children (see Appendix). However, the focus is still on having enough symptoms at a certain frequency, rather than concentrating on the intensity of the symptoms and the level of impairment, which are found to be more discriminatory for younger children (Carrion, Weems, Ray, & Reiss, 2002; Cohen & Scheeringa, 2009). As such, an alternative, more behaviourally-anchored set of diagnostic criteria was proposed and supported by experimental evidence as a better and more valid diagnostic tool for preschool children (Scheeringa, Zeanah, Drell, & Larrieu, 1995; Scheeringa, Peebles, Cook, & Zeanah, 2001; Scheeringa et al., 2003).

This review paper was undertaken to synthesize the research on the need for alternative criteria for pre-school children (0-6 years old) by presenting (a) the objective and subjective value differences of stressors in children, (b) the importance of focusing on both the intensity and frequency of symptoms, (c) the research behind and an evaluation of the modifications proposed

for alternative diagnostic criteria, (d) an introduction to the DSM-V, and (e) implications for the disorder as a whole and potential future directions of research in the field of child traumatology.

PTSD Stressors in Children

Criterion A: Traumatic Stressors

A heated area of debate in the field of PTSD assessment regards identifying stressors (criteria A) capable of producing re-experiencing, avoidance and numbing, and hyperarousal symptoms to qualify for a PTSD diagnosis (McNally, 1991). According to the DSM-IV-TR's (APA, 2000, pp. 463-464) description,

Traumatic events that are experienced directly include, but are not limited to, military combat, violent personal assault (sexual assault, physical attack, robbery, mugging), being kidnapped, being taken hostage, terrorist attack, torture, incarceration as a prisoner of war or in a concentration camp, natural or manmade disasters, severe automobile accidents, or being diagnosed with a life-threatening illness. For children, sexually traumatic events may include developmentally inappropriate sexual experiences without threatened or actual violence or injury. Witnessed events include, but are not limited to, observing the serious injury or unnatural death of another person due to violent assault, accident, war, or disaster or unexpectedly witnessing a dead body or body parts. Events experienced by others that are learned about include, but are not limited to, violent personal assault, serious accident, or serious injury experienced by a family member or a close friend; learning about the sudden, unexpected death of a family member or a close friend; or learning that one's child has a life-threatening disease.

It appears as though many events qualify as traumatic stressors. However, though some stressors can straightforwardly be characterized as traumatic, other cases are plagued by ambiguity, especially with regards to children. March (1993) argues that when deciding if an event is traumatic or not, several factors need to be considered: (i) the intensity and duration of the event, (ii) the consequence of the event, such as physical injury and death, and (iii) subjective responses to the event. The latter factor is important to keep in mind for the section on the objective and subjective value of traumatic stressors.

Cases of child sexual abuse are prime examples of equivocal stressors, particularly when evidence is absent or ambiguous (American Academy of Child and Adolescent Psychiatry, 1988), when the case is based on recovered memories, or when too much time has elapsed since the last incident. De Jong (1985) addresses issues such as why children may delay reporting of the event(s). Since abuse is typically recurrent, the child opts to adapt to the situation by assuming blame and therefore delays disclosure. If and when the child finally admits to the abuse, the parents and authorities may not believe the child's declaration, especially if the child's daily and academic functioning is not impaired.

Objective and Subjective Value Differences of Stressors

The DSM-IV-TR (APA, 2000) characterizes a stressor based on its objective magnitude – the existence of a traumatic event (criterion A1) – and the subjective value – the individual's response to the event (criterion A2). Dyb (2005) provides evidence that assessing the effect of both the objective and subjective features of a traumatic event is gaining popularity in research. Researchers have found that criteria A1 and A2 contribute independently to the development of PTSD (Goenjian et al., 2001). However, despite the established importance of assessing both the objective and subjective magnitudes of a stressor, current instruments used to diagnose PTSD only focus on criteria B, C, and D – respectively, reexperiencing the event, avoidance and numbing, and hyperarousal – since they are more behavioural and observable in nature (Dyb, 2005). Blashfield, Flanagan, and Raley (2010) wrote that the DSM-III improved on previous versions by being a classification system based on evidence not consensus, and using specific diagnostic criteria rather than prose based on patients' self-report. Perhaps such a focus on observables explains the current emphasis on more behavioural rather than internally subjective criteria (A2) in the assessment of PTSD. However, as will be elaborated on below, the subjective and objective effects of a stressor have independent significance for diagnosis, specifically for levels of impairment.

PTSD Symptoms

PTSD Symptoms Specific to Younger Populations

Terr's (1979) investigation into the twenty-six children of Chowchilla who were kidnapped and buried alive, but able to dig themselves out, initiated the inclusion of more age-specific features in the PTSD description in the DSM-III-R. She found that children re-experienced the traumatic event through play – such as kidnapping games – rather than flashbacks, the children regressed in certain developmental skills, and the victims exhibited cognitive disturbances other than amnesia – such as recalling the events out of order and having hindsight bias.

The current version of the DSM, DSM-IV-TR (APA, 2000), includes specifications for children. For criterion A2, children may express disorganized or agitated behaviour rather than fear or horror. Criterion B1 specifies that young children may engage in repetitive play that demonstrates certain aspects of the trauma, criterion B2 may be expressed as frightening dreams, and children may display criterion B3 through trauma-specific re-enactment. However, criteria C and D remain unchanged, and yet all criteria must be met for children to be diagnosed with PTSD.

Frequency and Intensity of Symptoms: Effects on Impairment and PTSD Diagnosis

Cohen and Scheeringa (2009) address a specific challenge related to PTSD diagnosis in children: those cases that are symptomatic and impaired, but not diagnosed. They argue that the DSM-IV diagnostic criteria underestimate the true prevalence of PTSD in children and adults that are functionally impaired due to symptoms, but do not meet diagnostic cut-offs. The reason is because the current criteria do not adequately represent the intensity of symptoms, but focus only on the number or frequency of symptoms.

Carrion et al. (2002) also found that children and adolescents who do not meet the full criteria to be diagnosed with PTSD still show significant impairment and distress. The level of impairment and distress in children who met the threshold for two clusters did not differ from those who met criteria for all three clusters. Similarly, Scheeringa et al. (1995) and Scheeringa et al. (2003) demonstrated that though children may have subsyndromal PTSD, their impairment is still clinically significant. In addition, Carrion et al. (2002) make note of the fact that there is little research that supports the use of three-part clustering of symptoms with children. Therefore, the argument is that instead of seeking a certain number and frequency of symptoms, clinicians should evaluate the intensity of the symptoms and their relation to functional impairment when dealing with cases of pediatric PTSD.

Carrion et al. (2002) specify the difference in effects of symptom frequency and intensity on PTSD diagnosis and level of impairment. They found that symptom intensity, not frequency, of some symptoms (e.g. criteria C1: avoidance of feelings, thoughts, and conversations; B4: distress at exposure to trauma-related cues) predicted functional impairment. Intensity of criteria D3 (difficulty concentrating), C2 (avoiding people and places), and B3 (feelings of reoccurrence) predicted PTSD diagnosis, but the frequency of these symptoms did not. Furthermore, some symptoms – for example, exaggerated startle response – were predictive of PTSD diagnosis, but not functional impairment, perhaps because such criteria underscore PTSD vulnerability in childhood rather than impairment. The reverse was also observed, such that some symptoms like diminished interest were associated with functional impairment but not PTSD diagnosis. The above mentioned studies all allude to the need for more age-specific diagnostic criteria that account for the fact that children express different symptoms than adults, and at different intensities and frequencies. A stepping stone in that direction is adequate assessment tools specifically targeting that age group.

Age-Specific PTSD Assessments

The Need for Age-Specific Assessments and Sources of Information

Terr (1988) studied children exposed to trauma between the ages of 0 to 58 months, with the time between exposure and evaluation ranging from 5 months to 12 years. The study alludes to

the need for more developmentally sensitive assessment tools of PTSD for very young children, as demonstrated by the four important findings: (i) being 28 to 36 months of age at the time of the trauma is the threshold for children to have full verbal recollection capacity of their trauma, but girls appear more able to verbalize memories prior to that threshold than boys; (ii) behavioural memories are established at any age and persist despite the inexistence of verbal recollections, perhaps because behavioural memories result from visual rather than verbal memory; (iii) the general accuracy of verbal memories remains constant, despite individual variability in adding or deleting details from the memory; and (iv) short, single traumatic events are more likely to be remembered verbally compared to longer, multiple events. These four findings indicate the need for assessment measures that do not rely on verbal reports since children have difficulty verbally recollecting and communicating early trauma.

Zeanah, Boris, and Scheeringa (1997) provide additional reasons as to why assessing psychopathology in early childhood is more complicated than in adulthood. Preschool children (0-6 years old) require special attention since they are in the preverbal stage of development, and they therefore cannot directly report on their thoughts, feelings, and behaviours. Instead, parents and teachers are heavily relied on to provide information on symptomatology and functioning.

Research on the Accuracy of Collateral Sources

According to Achenbach, McConaugh, and Howell's (1987) meta-analysis, though the correlations between similar informants was 0.60 (pairs of parents, teachers, mental health workers, observers, peers, or the subjects), the correlation dropped to 0.28 for different types of informants (for example, between parents and teachers), and to only 0.22 between the subjects (children between 1.5-19 years of age) and other informants. Therefore, clinicians and researchers cannot only rely on parents' reports for understanding the symptoms of the child since varying sources of information provide different information.

When dealing with such a young population, combined parent and child interview scores should be considered to ensure accurate diagnoses. Scheeringa et al. (2006) demonstrated that combined parent and child scores increase assessment sensitivity by significantly increasing rates of symptom and cluster endorsements than parent-alone data for all criteria and for the overall diagnosis. There is an 8.9-fold increase in PTSD diagnoses when combining parent and child reports (38% with combined scores compared to 4% with parent reports only), which suggests that only relying on parent reports for children in the preverbal stage may underestimate the true numbers.

Zeanah et al. (1997) provide a review of the evidence of reporting bias of parents. Parent reports of children are affected by the parents' individual characteristics (example: social class and personality) and expectations during pregnancy, and poor reliability across different observers despite stability within different group of observers. Specific to psychopathology, they argue that parents need a frame of reference to know if the child's behaviour is in fact deviant and sufficiently problematic to warrant attention. For example, Stallard (1993) found that parents

with only one child found more concern with certain levels of behaviour than parents with at least two children. Scheeringa et al. (2001) also found mothers of traumatized children over-endorsed items when comparing maternal reports and clinician observation of children. They conclude that more rigorous interview procedures are needed to question caregivers about symptom frequency, intensity, duration, onset, etcetera.

Cohen and Scheeringa (2009) also comment on the reliance on parent reports. On the one hand, it may lead to false-negatives, since some caregivers minimize, deny, or are unaware of the symptoms of the child. On the other hand, caregivers are important for the identification of certain symptoms. For example, with regards to the avoidance criterion, if children are successful at avoiding trauma cues, they would be unaware of their actions and caregivers would therefore have to report behaviours that qualify for that criterion.

A more recent meta-analysis by Eiser and More (2001) also concluded that obtaining information from both parents and children is necessary. There is greater agreement between parent and child ratings for observable, physical indicators of quality of life ($r > 0.50$) than more social and emotional aspects ($r < 0.30$). Therefore, developmentally-sensitive assessments need to be developed that can use children as the source of information to uncover the more emotional components of PTSD that parents do not have access to.

Hawkins and Radcliffe (2006) did a review of current measures of PTSD used for children and adolescents, and found that few measures have been designed specifically for young children. Increasingly, multi-informant approaches are used, such as asking parents and children, but there is still discussion on exactly how to use the information from different sources. As Hawkins and Radcliffe (2006) conclude, description and diagnosis is critical due to the implications for treatment and prognosis. Therefore, more research needs to be done on developing PTSD assessment tools specific for young populations.

Alternative Criteria

To address the need for more developmentally-sensitive diagnostic criteria, Scheeringa et al. (1995) proposed an alternative that relied on behaviourally anchored criteria, which was subsequently found to have greater content and criterion validity than DSM-IV criteria. Such an alternative is important in light of Scheeringa et al.'s (2006) finding that children do not reach PTSD criteria threshold according to DSM-IV standards until the age of 7.

Scheeringa et al. (1995) were the first to empirically demonstrate that DSM-IV (APA, 1994) criteria are not suited for younger populations; subsequently, they designed an alternative set of criteria specifically for infants and young children. They argue that one of the biggest challenges in diagnosing PTSD in infants is developmental in nature given that they are in the pre-verbal stage of development, which makes inferring thoughts and feelings that much more difficult. Scheeringa et al. (1995) and Kaminer et al. (2005) comment on the fact that eight of the DSM-IV-TR (APA, 2000) criteria require verbal subjective descriptions, which only leaves 10 items that can be used in infants.

Development of the Alternative Criteria

The first phase of Scheeringa et al.'s (1995) study involved two raters that rated 20 published cases using DSM-IV criteria. The results were significant: the two raters were 100% in agreement that none of the 20 cases met DSM-IV PTSD criteria.

Based on these results, Scheeringa et al. (1995) created alternative criteria for PTSD in infants (see Table 1 in Appendix 1) to address the issue that the existing criteria may lack the sensitivity needed for such a young age group. The modified criteria were more behaviourally anchored and salient, and were based on the items rated more frequent by the raters, had higher interrater reliability, and were supported by clinical judgments.

Explanation for some of these modifications is warranted (Scheeringa et al., 1995; 2001; 2003; Zeanah & Gleason, 2010). First, criterion A2 was removed since preverbal children would not be able to express such a reaction and it would therefore be dependent on caregivers recognizing the reaction. Zeanah and Gleason (2010) make the argument that if A2 is retained by the DSM-V workgroup, "displays agitated behavior" should be added to the criteria. Second, in B1, a note is added that distress may not be evident in preschool children, despite being preoccupied with trauma reminders. Third, a new developmental criterion related to avoidance/numbing was added due to its frequency in previous studies and cases: loss of developmental skills. Fourth, a new cluster was added based on frequently observed symptoms: new separation anxiety, new aggression, and new fears. Lastly, the cut-off threshold for the clusters was changed such that only one symptom for each cluster is needed instead of a minimum of three.

Research on the Alternative Criteria

The third phase of Scheeringa et al.'s (1995) research applied the modified criteria to 12 new cases of infants between 17 and 41 months of age at the time of the trauma. The cases were rated by the same 2 raters, as well as 2 new raters. The results revealed that according to three of the four raters, none of the 12 cases met criteria for diagnosis using DSM-IV standards, but three of the raters were 100% in agreement that 9 cases had PTSD according to the alternative criteria. DSM-IV criteria had lower interrater reliability than the alternative criteria by clusters and by items. Scheeringa et al. (1995) acknowledge that these were preliminary findings, but more research has been done since and attest to the validity of the alternative criteria. Zeanah and Gleason (2010) cite several studies that together make the argument that the alternative criteria proposed by Scheeringa et al. (1995) have discriminant, predictive, and criterion validity in preschool children, unlike DSM-IV criteria that have no validity in this age group, other than "derivative" validity from older individuals.

Scheeringa et al. (2001) replicated the 1995 study on 15 new cases of children younger than two years of age. Examples of cases include a child who witnessed domestic violence from 0-26

months and then was subjected to sexual abuse at the age of 35 months, a child who witnessed their father's suicide at 31 months, and a child who witnessed domestic violence at 12 months, was attacked by a dog at 24 months, witnessed a shootout at 24 months, and was sexually abused at 28 months. Thirteen children experienced more than one traumatic event, and nine experienced more than one type of trauma. Two blind raters reviewed videotapes of the children being assessed with a standardized procedure and a semi-structured diagnostic interview: the *Posttraumatic Stress Disorder Semi-Structured Interview and Observational Record for Infants and Young Children* (0-48 months) that included DSM-IV and modified alternative criteria. The child and parent were interviewed, and the interviewer also engaged in trauma-reenactment with the children. Scheeringa et al.'s (2001) study replicated previous findings that the alternative criteria are better able to diagnose cases of PTSD than DSM-IV criteria.

Scheeringa et al. (2003) replicated the 1995 study with 62 traumatized subjects from 1-6 years of age and included a control group of children who had not experienced a trauma. The measures were the *Posttraumatic Stress Disorder Semi-Structured Interview and Observational Record for Infants and Young Children* (semistructured interview of the primary caregiver), the *National Institute of Mental Health Diagnostic Interview Schedule for Children, Version 4.0* (symptoms of separation anxiety disorder, major depressive disorder, attention-deficit/hyperactivity disorder, and oppositional defiant disorder), and the *Child Behavior Checklist*. They identified which were the most commonly endorsed symptom clusters and if those symptoms led to a PTSD diagnosis. Cluster B (Reexperiencing) was endorsed 68% of the time, Cluster C (avoidance/numbing) was rare (2%) according to DSM-IV criteria but more common (39%) when the threshold was lowered to one symptom with the alternative criteria, Cluster D (arousal) was common (45%) with DSM-IV standards but even more common when only one symptom was required (73%), and the new cluster was the most commonly endorsed (79%). All in all, 0 of the 62 cases were diagnosed with PTSD using DSM-IV criteria, but the rate rose to 26% when only one cluster C symptom was required.

Scheeringa et al. (2003) identified four areas worth expanding on with the DSM-IV criteria for younger populations. First, though Cluster E was the most common, it prevented one case from being diagnosed with PTSD, which led to the conclusion that Cluster E was not useful in differentiating PTSD cases from non-cases. Second, though reducing cluster D threshold requirement increased the number of cases that met the criteria for that cluster, it was judged that a two-symptom requirement endorsed 45% of the time was an appropriate and conservative threshold. Third, though the "loss of developmental skills" increased the PTSD rate and therefore suggests that it is helpful to identifying more cases, Scheeringa et al. (2003) suggest that, because rates of comorbidity do not differ whether the new symptom was included, the most conservative strategy would be to drop this symptom and reduce the DSM-IV threshold cut-off for cluster C to one symptom. Finally, regarding the number of symptoms required from cluster C, the same conclusion from point 3 was drawn: requiring only one symptom. Therefore, the new modifications to Scheeringa et al.'s (1995) criteria are to lower the cluster C threshold to one symptom and remove the "loss of developmental skills" symptom. Such a modification is

supported by Scheeringa et al.'s (2006) study that demonstrated that cluster C symptoms, but not cluster B or D, increased significantly with age and that the 0-6-year-old group had significantly less criterion C symptoms. In that age group, the prevalence of cluster C symptoms increased to 24% from 5% when the threshold was lower to only requiring one symptom.

Evaluation

It is important to evaluate the research on the alternative criteria before accepting the results at face value. Scheeringa et al.'s 3 studies (1995; 2001; 2003) will each be looked at in turn. Scheeringa et al. (1995) was a turning point in the field of pediatric PTSD. After demonstrating that PTSD does in fact occur in young populations, they worked to modify DSM-IV criteria to make them more developmentally sensitive and applicable to younger populations. The results were encouraging in terms of being more sensitive and have better validity than DSM-IV criteria.

Nonetheless, the first phase of their research has several limitations worth mentioning. First, the two raters involved were aware of the purpose of the study, so their expectations and personal biases may have affected the results. Second, the cases analyzed were not randomly selected, and could have been chosen because they were the most symptomatic and therefore the most likely to ensure that the alternative criteria would be found to be applicable. Third, the case information was based on published information and could consequently be biased by previous interpretations of the data and observations of the children.

The third phase of Scheeringa et al.'s (1995) study addressed some of the problems by introducing an additional two new raters that were blind to the purpose of the study. In addition, the raters were looking at new, unpublished data and were therefore making their own analyses of the data rather than basing their decisions on previous investigators' interpretations. However, this phase of the research, just like the first one, had a small sample size.

In Scheeringa et al.'s (2001) study, the raters used were blind to the purpose of the research and reviewed videotapes of assessments completed for this study, rather than reading published cases. It is encouraging that the 1995 study's findings were replicated 6 years later and with a new set of cases and raters. The two raters' ratings were checked using a best-estimate diagnostic method and their notes were reviewed by a third rater if ever there was disagreement. However, the 2001 study also utilized a small sample size with most cases being representative of extreme cases of trauma. For example, many cases were of children who experienced repetitive trauma, which may not be typical of all children at such a young age range (all younger than 48 months of age). Finally, as with all laboratory research, there is a problem of external validity. Part of the research involved comparing parent versus clinician ratings; however, the raters only had access to laboratory videotaped sessions of interviews and play, and therefore did not have access to the same information as the mothers. If the laboratory sessions are not representative of how the child is at home, the raters' conclusions may not be accurate.

Scheeringa et al.'s (2003) study was important in assessing the utility of the proposed alternative criteria and in addressing a major limitation of the previous studies. By including a larger sample size with a variety of cases, the authors were able to say with confidence that the alternative criteria were not only diagnosing children that were mildly symptomatic. In addition, the study was novel in confirming that high rates of comorbidity are found in younger populations, not only in older children and adults. However, though the sample size was larger compared to previous studies, it is still small relative to other studies published in the field of psychology.

Proposed DSM-V Posttraumatic Stress Disorder Criteria

Zeanah and Gleason (2010) address the proposed developmental changes to the DSM-V: each disorder will have a text section specific to age-related features, disorders may have additional text to address age-related manifestations of specific criteria to the disorder, and depending on the disorder, there may be developmental subtypes if there are differences in, for example, the number of criteria needed to meet threshold for one age group but not another.

The proposed changes for the PTSD diagnosis in the DSM-V are found in Appendix 2. Other than including a 0-4 severity scale for certain symptoms in the past 7 days (see Appendix 2, Table 2), the proposed changes also include a Pre-school Subtype for children aged 6 and under. It is evident that the above-mentioned research on the need for more developmentally sensitive criteria was taken seriously and incorporated, at least in part, in the upcoming version of the DSM (expected date: May 2013).

Conclusions

Implications

The implications of the above research center on the fact that the alternative criteria were found to be superior to the DSM-IV criteria. The reason the rate of PTSD in preschool children was previously found to be low is not because the disorder does not exist in young children, but because the existing assessment tools and diagnostic criteria were not sensitive enough for the age group. By developing adequate criteria, young children adversely affected by trauma can be properly diagnosed and therefore treated. Early detection is crucial since the pre-school children are at such a critical stage in development.

Terr (1991) presents a paper on childhood traumas and notes that properly dealing with cases of childhood trauma is crucial because of the long-term consequences. For example, she claims that childhood trauma leads to numerous mental changes that are the precursors to other character problems typically seen in adults, such as psychotic thinking, self-mutilative episodes, and anxiety problems. In addition, even when only looking at childhood rather than the consequences for the child as an adult, the child in question can be diagnosed with conduct disorder, phobic disorder, panic disorder, etcetera. Terr's paper therefore points to the

importance of properly diagnosing and treating cases of childhood trauma to ensure that the child has a fair chance of developing normally with minimal long-term problems.

In addition all the research on the need for collateral sources of information highlights the need for rigorous assessment procedures. These procedures must be capable of uncovering subtleties in cases where the population is in the pre-verbal stage of development and can therefore not directly report on how they feel. As Hawkins and Radcliffe (2006) argue, more research is needed in this domain. Once adequate assessment tools are developed and validated, diagnosis will be easier and more accurate; as a result, treatment will be more effective and allow for a more positive prognosis.

Future Directions

Based on all the research that children require different diagnostic tools and criteria than older victims of trauma, it is clear that they deserve a separate category in the DSM, whether it be a subtype of general PTSD, as is proposed for the DSM-V, or a new category entirely. More research is needed to further refine the new diagnostic criteria for preschool children, but the field is moving in the right direction.

Now that attention has been drawn to assessing PTSD in preschool children, the next important step is treatment and prevention. Evidently, treating cases of pediatric PTSD is heavily reliant on the cooperation of caregivers; however, what happens when the cause of the child's trauma is the caregiver or if the caregivers have been killed as a result of the trauma? The social environment of the child is just as important as the internal psychological processes. Treatment must therefore be inspired by multiple levels: the individual (psychologically and physically), the family dynamics, and the society as a whole. When the source of trauma is civil conflict, it is impossible to treat PTSD in a child or an adult without accounting for the fact that trauma may reoccur considering the unstable environment.

Furthermore, as previously mentioned, effective treatment is reliant on accurate diagnosis, and, by extension, proper assessment tools. Future work in the field of pediatric trauma must begin with developing procedures and measures capable of assessing PTSD in a population of children unable to verbalize their symptoms, with minimal insight, and perhaps with no awareness of the extremity of the trauma that occurred.

In conclusion, trauma affects people of all ages, even infants younger than two years of age. It is therefore imperative that adequate assessment methods and criteria are developed and implemented to ensure that society's most vulnerable members have a chance at proper development to reduce the long-term consequences of childhood trauma. From all the research conducted, it is evident that the field of pediatric trauma has gained attention; however, it is now a question of whether the findings will be turned into practice.

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Appendix 1

Table 1:

DSM-IV (APA, 2000) and the Alternative Criteria (Scheeringa et al., 1995)

<i>DSM-IV</i>	Alternative
<p>A. The person has been exposed to a traumatic event in which both of the following were present:</p> <ol style="list-style-type: none"> (1) The person experienced, witnessed, or was confronted with an event or events that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others (2) The person's response involved intense fear, helplessness, or horror. Note: In children, this may be expressed instead by disorganized or agitated behavior <p>B. The traumatic event is persistently reexperienced in one (or more) of the following ways:</p> <ol style="list-style-type: none"> (1) Recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions. Note: In young children, repetitive play may occur in which themes or aspects of the trauma are expressed. (2) Recurrent distressing dreams of the event. Note: In children, there may be frightening dreams without recognizable content. (3) Acting or feeling as if the traumatic event were recurring (includes a sense of reliving the experience, illusions, hallucinations, and dissociative flashback episodes, including those 	<p>A.</p> <p style="margin-left: 20px;">Same</p> <p style="margin-left: 20px;">Deleted</p> <p>B. Reexperiencing. One item needed</p> <ol style="list-style-type: none"> (1) Posttraumatic play: compulsively repetitive, represents part of the trauma, fails to relieve anxiety and is less elaborative than usual play (2) Play re-enactment: represents part of the trauma but lacks the monotonous repetition and other characteristics of posttraumatic play (3) Recurrent recollections of the traumatic event other than what is revealed in play, and which is not necessarily distressing

<p>that occur on awakening or when intoxicated). Note: In young children, trauma-specific reenactment may occur.</p> <p>(4) Intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event</p> <p>(5) physiological reactivity on exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event</p> <p>C. Persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness (not present before the trauma), as indicated by three (or more) of the following:</p> <p>(1) efforts to avoid thoughts, feelings, or conversations associated with the trauma</p> <p>(2) efforts to avoid activities, places, or people that arouse recollections of the trauma</p> <p>(3) inability to recall an important aspect of the trauma</p> <p>(4) markedly diminished interest or participation in significant activities</p> <p>(5) feeling of detachment or estrangement from others</p> <p>(6) restricted range of affect (e.g., unable to have loving feelings)</p> <p>(7) sense of a foreshortened future (e.g., does not expect to have a career, marriage, children, or a normal life span)</p> <p>D. Persistent symptoms of increased</p>	<p>(4) Nightmares may have obvious links to the trauma or be of increased frequency with unknown content</p> <p>(5) Episodes with objective features of a flashback or dissociation</p> <p>C. Numbing of responsiveness. One item needed</p> <p>Deleted</p> <p>Deleted</p> <p>Deleted</p> <p>(1) Constriction of play. Child may have constriction of play and will have posttraumatic play or play reenactment</p> <p>(2) Socially more withdrawn</p> <p>(3) Restricted range of affect</p> <p>Deleted</p> <p>(4) Loss of developmental skills, especially language regression and loss of toilet training</p>
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<p>arousal (not present before the trauma), as indicated by two (or more) of the following:</p> <ul style="list-style-type: none"> (1) difficulty falling or staying asleep (2) irritability or outbursts of anger (3) difficulty concentrating (4) hypervigilance (5) exaggerated startle response <p>E. Duration of the disturbance (symptoms in Criteria B, C, and D) is more than 1 month.</p> <p>F. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.</p>	<p>D. Increased arousal. One item needed</p> <ul style="list-style-type: none"> (1) Night terrors (2) Difficulty going to sleep which is not related to being afraid of having nightmares or fear of the dark (3) Night-waking not related to nightmares or night terrors <p>Deleted</p> <ul style="list-style-type: none"> (4) Decreased concentration; marked decreased in concentration or attention span compared to before the trauma (5) Hypervigilance (6) Exaggerated startle response <p>E. New fears and aggression. One item needed</p> <ul style="list-style-type: none"> (1) New aggression (2) New separation anxiety (3) Fear of toileting alone (4) Fear of the dark (5) Any other new fears of things or situations not obviously related to the trauma <p>F. Duration of the disturbance greater than 1 month</p> <p>Deleted</p>
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Appendix 2: Proposed DSM-V PTSD Criteria

G 03 Posttraumatic Stress Disorder: Proposed DSM-V Revisions

Note: The following criteria apply to adults, adolescents, and children older than six. There is a Pre-school Subtype for children age six and younger (see below).

A. Exposure to actual or threatened a) death, b) serious injury, or c) sexual violation, in one or more of the following ways:

1. directly experiencing the traumatic event(s)
2. witnessing, in person, the traumatic event(s) as they occurred to others
3. learning that the traumatic event(s) occurred to a close family member or close friend; cases of actual or threatened death must have been violent or accidental
4. experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse); this does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work-related.

B. Presence of one or more of the following intrusion symptoms associated with the traumatic event(s), beginning after the traumatic event(s) occurred:

1. spontaneous or cued recurrent, involuntary, and intrusive distressing memories of the traumatic event(s) (Note: In children, repetitive play may occur in which themes or aspects of the traumatic event(s) are expressed.)
2. recurrent distressing dreams in which the content or affect of the dream is related to the event(s) (Note: In children, there may be frightening dreams without recognizable content.)
3. dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) are recurring (such reactions may occur on a continuum, with the most extreme expression being a complete loss of awareness of present surroundings. (Note: In children, trauma-specific reenactment may occur in play.)
4. intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s)
5. marked physiological reactions to reminders of the traumatic event(s)

C. Persistent avoidance of stimuli associated with the traumatic event(s), beginning after the traumatic event(s) occurred, as evidenced by avoidance or efforts to avoid one or more of the following:

1. distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s)
2. external reminders (i.e., people, places, conversations, activities, objects, situations) that arouse distressing memories, thoughts, or feelings about, or that are closely associated with, the traumatic event(s)

D. Negative alterations in cognitions and mood associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred), as evidenced by two or more of the following:

1. inability to remember an important aspect of the traumatic event(s) (typically due to dissociative amnesia that is not due to head injury, alcohol, or drugs)
2. persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (e.g., "I am bad," "No one can be trusted," "The world is completely

- dangerous"). (Alternatively, this might be expressed as, e.g., "I've lost my soul forever," or "My whole nervous system is permanently ruined").
3. persistent, distorted blame of self or others about the cause or consequences of the traumatic event(s)
 4. persistent negative emotional state (e.g., fear, horror, anger, guilt, or shame)
 5. markedly diminished interest or participation in significant activities
 6. feelings of detachment or estrangement from others
 7. persistent inability to experience positive emotions (e.g., unable to have loving feelings, psychic numbing)
- E. Marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two or more of the following:
1. irritable or aggressive behavior
 2. reckless or self-destructive behavior
 3. hypervigilance
 4. exaggerated startle response
 5. problems with concentration
 6. sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep)
- F. Duration of the disturbance (Criteria B, C, D, and E) is more than 1 month.
- G. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- H. The disturbance is not attributed to the direct physiological effects of a substance (e.g., medication, drugs, or alcohol) or another medical condition (e.g. traumatic brain injury).
- Specify if:
- With Delayed Expression: if the diagnostic threshold is not exceeded until at least 6 months after the event (although the onset and expression of some symptoms may be immediate).

Subtype: Posttraumatic Stress Disorder in Preschool Children

- A. In children (less than age 6 years), exposure to one or more of the following events: death or threatened death, actual or threatened serious injury, or actual or threatened sexual violation, in one or more of the following ways:
1. directly experiencing the event(s)
 2. witnessing, in person, the event(s) as they occurred to others, especially primary caregivers (Note: Witnessing does not include events that are witnessed only in electronic media, television, movies or pictures.)
 3. learning that the traumatic event(s) occurred to a parent or caregiving figure;
- B. Presence of one or more intrusion symptoms associated with the traumatic event(s) , beginning after the traumatic event(s) occurred:
1. spontaneous or cued recurrent, involuntary, and intrusive distressing memories of the traumatic event(s) (Note: spontaneous and intrusive memories may not necessarily appear distressing and may be expressed as play reenactment.)
 2. recurrent distressing dreams in which the content and/or affect of the dream is related to the traumatic event(s) (Note: it may not be possible to ascertain that the frightening content is related to the traumatic event.)
 3. dissociative reactions in which the child feels or acts as if the traumatic event(s) were recurring, (such reactions may occur on a continuum with the most extreme

- expression being a complete loss of awareness of present surroundings). Such trauma-specific re-enactment may occur in play.
4. intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s)
 5. marked physiological reactions to reminders of the traumatic event(s)

One item from criterion C or D below:

- C. Persistent avoidance of stimuli associated with the traumatic event, beginning after the traumatic event occurred, as evidenced by avoidance or efforts to avoid:
1. activities, places, or physical reminders that arouse recollections of the traumatic event
 2. people, conversations, or interpersonal situations that arouse recollections of the traumatic event.
- D. Negative alterations in cognitions and mood associated with the traumatic event, beginning or worsening after the traumatic event occurred, as evidenced by one or more of the following:
1. markedly diminished interest or participation in significant activities, including constriction of play
 2. socially withdrawn behavior
 3. persistent reduction in expression of positive emotions
- E. Alterations in arousal and reactivity associated with the traumatic event, beginning or worsening after the traumatic event occurred, as evidenced by two or more of the following:
1. irritable, angry, or aggressive behavior, including extreme temper tantrums
 2. hypervigilance
 3. exaggerated startle response
 4. problems with concentration
 5. sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep)
- F. Duration of the disturbance (Criteria B, C, D and E) is more than 1 month.
- G. The disturbance causes clinically significant distress or impairment in relationships with parents, siblings, peers, or other caregivers or with school behavior.
- H. The disturbance is not attributable to another medical condition.

Table 2:

Severity Rating for DSM-V PTSD: National Stressful Events Survey PTSD Short Scale (NSESSS)

	Not at all	A little bit	Moderately	Quite a bit	Extremely
1. Having “flashbacks”, that is, you suddenly acted or felt as if a stressful experience from the past was happening all over again (for example, you re-experienced parts of a stressful experience by seeing, hearing, smelling, or physically feeling parts of the experience)	0	1	2	3	4
2. Feeling very emotionally upset when something reminded you of a stressful experience	0	1	2	3	4
3. Trying to avoid thoughts, feelings, or physical sensations that reminded you of a stressful experience	0	1	2	3	4
4. Thinking that a stressful event happened because you or someone else (who didn’t directly harm you) did something wrong or didn’t do everything possible to prevent it, or because of something about you	0	1	2	3	4
5. Having a very negative emotional state (for example, you were experiencing lots of fear, anger, guilt, shame, or horror) after a stressful experience	0	1	2	3	4
6. Losing interest in activities you used to enjoy before having a stressful experience	0	1	2	3	4
7. Being “super alert”, on guard, or constantly on the lookout for danger	0	1	2	3	4
8. Feeling jumpy or easily startled when you hear an unexpected noise	0	1	2	3	4
9. Being extremely irritable or angry to the point where you yelled at other people, got into fights, or destroyed things	0	1	2	3	4