

## ANXIETY AND DEPRESSION

---

# Posttraumatic Stress Disorder in Young Children

Alexandra De Young, PhD, Justin Kenardy, PhD

Centre of National Research on Disability and Rehabilitation Medicine, School of Medicine,  
University of Queensland, Australia

March 2013

### Introduction

Posttraumatic stress disorder (PTSD) is one of the more serious and debilitating mental disorders that can occur following trauma. Research indicates that consistent with older children and adolescents, young children also typically manifest with the traditional three PTSD symptom clusters of re-experiencing the event (e.g., through nightmares, posttraumatic play), avoidance of reminders of the event and physiological hyperarousal (e.g., irritability, sleep disturbance, exaggerated startle).<sup>1</sup> However, research has shown that the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV- TR)<sup>2</sup> PTSD criteria does not adequately capture the symptom manifestation experienced by infants and preschool children and underestimates the number of children experiencing posttraumatic distress and impairment.<sup>3</sup> A growing number of research studies have since provided support for including an age-related subtype of PTSD for preschool children in the DSM-V.<sup>4,5</sup>

*Prevalence, course and consequences of trauma reactions*

Studies with young children that have adopted developmentally sensitive PTSD criteria have reported prevalence rates of 6.5%-29% for acute stress reactions within the first month following a motor vehicle accident (MVA)<sup>6</sup> or burn injury<sup>7</sup> and PTSD rates that vary from 14.3%-25% within 2 months following a variety of injury types (e.g., burns, gun shots, MVA, sporting),<sup>8,9</sup> 10% 6 months post MVA or burn<sup>6,8</sup> and 13.2% on average 15 months after burn injury.<sup>10</sup> Following physical or sexual abuse rates of developmentally sensitive PTSD have been reported of between 26 and 60%.<sup>1,3,11</sup> Our research has shown that young children also develop depression, separation anxiety disorder (SAD), oppositional defiant disorder (ODD) and specific phobias following burn injury<sup>8</sup> and these disorders are highly comorbid with PTSD.

Research with children of all ages has shown that untreated PTSD can follow a chronic and debilitating trajectory.<sup>8,12,13</sup> These findings are concerning given that young children's neurophysiological systems, including the stress modulation and emotional regulation systems, are still in the process of rapid development.<sup>14</sup> Additionally, trauma during childhood has been associated with permanent structural<sup>15</sup> and functional<sup>16</sup> brain impairment as well as the onset of psychiatric disorders,<sup>17</sup> health risk behaviours and physical health conditions in adulthood.<sup>18</sup> Therefore trauma that occurs during early childhood may have even greater ramifications for developmental trajectories than traumas that occur at a later stage of development.

### *The role of parents*

When working with traumatised children it is also important to be aware that the child's trauma and the child's response to the trauma can also be traumatic for parents and can be a source of chronic stress. Research indicates that approximately 25% of parents will experience clinically elevated levels of acute stress, PTSD, anxiety, depression and stress within the first 6 months of their child's trauma.<sup>19-21</sup> While the majority of parents are likely to be resilient or improve to below clinical levels over time, parental distress during the acute phase has been shown to contribute to the development and maintenance of trauma symptomatology in injured children.<sup>19,20,22</sup>

It is widely recognised that the quality of the parent-child attachment, parental mental health and parenting behaviours are crucial factors that influence a child's adjustment following trauma.<sup>14,23,24</sup> For young children, the parent-child relationship is particularly important as they lack the coping capacities to regulate strong emotion and are therefore dependent on a sensitive and emotionally available caregiver to assist with affect regulation during times of distress.<sup>14,23</sup> Additionally, young children are particularly reliant on their parents' reactions to determine how to interpret or

respond to an event and may therefore model their parent's fear responses and maladaptive coping responses.<sup>25</sup> Parents may also directly influence their child's exposure to traumatic reminders (e.g., allowing avoidance of conversations), and thereby impede their child's habituation to the event.<sup>25</sup>

The impact of adverse parental psychological responses on the quality of the parent-child relationship and the development of children's trauma symptoms, combined with parental distress in its own right, represent important reasons to also attend to the needs of parents to both reduce parents' own distress and to promote parents' ability to assist their children. Interventions that target child distress, parent distress and the parent-child relationship are likely to be beneficial in reducing the subsequent development of parent and child posttraumatic stress reactions. However there is only preliminary evidence to support these types of interventions in the acute stage, and more research is needed.

### *Prevention and early intervention*

Unfortunately, the majority of children and parents who experience psychological difficulties after trauma are not identified or provided with appropriate support. Given that trauma is common and that early childhood may represent a "sensitive period" of brain development, there is an urgent need for effective interventions that decrease the risk of children and parents developing chronic posttraumatic stress reactions. There is considerable potential for intervention in high risk settings such as hospitals to reduce the risk or prevent the onset of traumatic stress reactions through screening and indicated prevention or early intervention programs.<sup>26</sup> Early identification and intervention with 'high-risk' families, when symptoms first present, can prevent problems from becoming entrenched or at least minimise the impact of these problems on the child, family and society. However, the challenge is to be able to differentiate between individuals who experience transient distress and those that are at risk of developing chronic PTSD<sup>13</sup> so as not to over-burden the resources of busy hospitals. There are no validated screening methods that are available for very young children, and this is a significant gap in the field.

To date the majority of research has been on treatment of chronic PTSD rather than early intervention and many unanswered questions remain in both the adult and child literature regarding who should receive early intervention and what the optimal time-frame, content and length of early intervention should be.<sup>27</sup> To date, systematic reviews provide the strongest support for multi-session trauma-focused cognitive behavioural therapy (CBT) interventions provided to

‘high-risk’ individuals within the first 3 months of trauma exposure.<sup>27</sup>

Research with children has found that information-based prevention interventions within 2 weeks post accidental traumatic injury were associated with reduced child anxiety symptoms, at 1 month<sup>28</sup> and 6 months post injury.<sup>29</sup> Additionally, Landolt and colleagues have found support for a single-session early intervention at reducing depressive symptoms and behavioural problems, in a subsample of preadolescent children (7-11 years) involved in road traffic accidents.<sup>30</sup> Berkowitz and colleagues,<sup>31</sup> have conducted the only indicated prevention program (4-session child-caregiver intervention consisting of assessment, psychoeducation and coping skills) for children (aged 7-17 years) that has been effective at reducing child PTSD diagnoses and symptoms following a range of traumatic events.

In contrast, for young children (< 6 years), there are currently no known published studies examining the effectiveness of preventive psychological interventions following trauma. However, Scheeringa has shown that a 12-session cognitive behavioural therapy for PTSD protocol conducted with 3-6 year old children exposed to a variety of traumatic events was feasible and effective in reducing established posttraumatic stress symptoms.<sup>32</sup>

Few studies have included an intervention component that also targets parent distress following a child’s trauma. Kenardy and colleagues found that psychoeducation provided to parents within 72 hours of their child’s accident was effective at reducing parental posttraumatic symptoms at the 6-month follow-up.<sup>28</sup> Melnyk et al<sup>33</sup> have examined the effectiveness of an early intervention program for parents of children (2-7 years) who were admitted to a paediatric intensive care unit. They found that parents in the intervention group had significantly lower stress, depression and PTSD symptoms and their children exhibited fewer internalising and externalising difficulties post discharge.

Research is urgently needed before evidence-based clinical recommendations for the prevention of PTSD with young children can be made. However, based on results from a recent meta-analysis, Landolt and colleagues have recommended that early interventions target children screened as ‘high-risk’ and include multiple sessions that involve psychoeducation, individual coping skills, parental involvement and some form of trauma exposure.<sup>34</sup>

## **Implications for Parents, Services and Policy**

Posttraumatic stress in young children is under-recognised. Health services need to become better skilled at detection of posttraumatic stress in young children. This will involve in-service and post professional training. Routine screening may be the ideal but in terms of cost, identification within a high-risk subset may be preferable. Also any screening program will need to be linked into a clinical service with the capacity to deliver appropriate care. Parental distress is a significant contributing factor in post trauma responses in children. However it is likely to be under-recognised in clinical settings. This may be because the distress is not of a clinical severity or because the focus is on the child's needs rather than the family.<sup>22</sup> Services need to become more aware of the broader impact of trauma on the family system.

## References

1. Scheeringa, M., et al., New findings on alternative criteria for PTSD in preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 2003. 42(5): p. 561-570.
2. American Psychiatric Association, *Diagnostic and statistical manual of mental disorders, (4th edition, Text Revision)*. 2000, Washington, DC: Author.
3. Scheeringa, M.S., et al., Two approaches to the diagnosis of posttraumatic stress disorder in infancy and early childhood. *Journal of the American Academy of Child and Adolescent Psychiatry*, 1995. 34(2): p. 191-200.
4. Scheeringa, M.S., C.H. Zeanah, and J.A. Cohen, PTSD in Children and Adolescents: Toward an Empirically Based Algorithm. *Depression and Anxiety*, 2011. 28(9): p. 770-782.
5. De Young, A.C., J.A. Kenardy, and V.E. Cobham, Diagnosis of Posttraumatic Stress Disorder in Preschool Children. *Journal of Clinical Child and Adolescent Psychology*, 2011. 40(3): p. 375-384.
6. Meiser-Stedman, R., et al., The posttraumatic stress disorder diagnosis in preschool- and elementary school-age children exposed to motor vehicle accidents. *American Journal of Psychiatry*, 2008. 165(10): p. 1326-1337.
7. Stoddard, F.J., et al., Acute stress symptoms in young children with burns. *Journal of the American Academy of Child and Adolescent Psychiatry*, 2006. 45(1): p. 87-93.
8. De Young, A.C., et al., Prevalence, comorbidity and course of trauma reactions in young burn-injured children. *Journal of Child Psychology and Psychiatry*, 2012. 53(1): p. 56-63.
9. Scheeringa, M.S., et al., Factors affecting the diagnosis and prediction of PTSD symptomatology in children and adolescents. *American Journal of Psychiatry*, 2006. 163(4): p. 644-651.
10. Graf, A., C. Schiestl, and M.A. Landolt, Posttraumatic Stress and Behavior Problems in Infants and Toddlers With Burns. *Journal of Pediatric Psychology*, 2011. 36(8): p. 923-931.
11. Levendosky, A.A., et al., Trauma symptoms in preschool-age children exposed to domestic violence. *Journal of Interpersonal Violence*, 2002. 17(2): p. 150-164.
12. Scheeringa, M.S., et al., Predictive validity in a prospective follow-up of PTSD in preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 2005. 44(9): p. 899-906.
13. Le Brocque, R.M., J. Hendrikz, and J.A. Kenardy, The Course of Posttraumatic Stress in Children: Examination of Recovery Trajectories Following Traumatic Injury. *Journal of Pediatric Psychology*, 2010. 35(6): p. 637-645.
14. Carpenter, G.L. and A.M. Stacks, Developmental effects of exposure to Intimate Partner Violence in early childhood: A review of the literature. *Children and Youth Services Review*, 2009. 31(8): p. 831-839.

15. Carrion, V.G., C.F. Weems, and A.L. Reiss, Stress predicts brain changes in children: A pilot longitudinal study on youth stress, posttraumatic stress disorder, and the hippocampus. *Pediatrics*, 2007. 119(3): p. 509-516.
16. Perry, B.D., et al., Childhood trauma, the neurobiology of adaptation, and "use-dependent" development of the brain: How "states" become "traits". *Infant Mental Health Journal*, 1995. 16(4): p. 271-291.
17. Green, J.G., et al., Childhood Adversities and Adult Psychiatric Disorders in the National Comorbidity Survey Replication I Associations With First Onset of DSM-IV Disorders. *Archives of General Psychiatry*, 2010. 67(2): p. 113-123.
18. Felitti, V.J., et al., Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults - The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 1998. 14(4): p. 245-258.
19. De Young, A.C., Psychological impact of burn injury on young children and their parents: Implications for diagnosis, assessment and treatment (Unpublished Doctoral dissertation), 2011, School of Psychology, University of Queensland: Brisbane.
20. Landolt, M.A., et al., The mutual prospective influence of child and parental post-traumatic stress symptoms in pediatric patients. *Journal of Child Psychology and Psychiatry*, 2012. 53(7): p. 767-774.
21. Hall, E., et al., Posttraumatic stress symptoms in parents of children with acute burns. *Journal of Pediatric Psychology*, 2006. 31(4): p. 403-412.
22. Le Brocque, R.M., J. Hendrikz, and J.A. Kenardy, Parental response to child injury: Examination of parental posttraumatic stress symptom trajectories following child accidental injury. *Journal of Pediatric Psychology*, 2010. 35(6): p. 646-655.
23. Lieberman, A.F., Traumatic stress and quality of attachment: Reality and internalization in disorders of infant mental health. *Infant Mental Health Journal*, 2004. 25(4): p. 336-351.
24. Scheeringa, M.S. and C.H. Zeanah, A relational perspective on PTSD in early childhood. *Journal of Traumatic Stress*, 2001. 14(4): p. 799-815.
25. Nugent, N.R., et al., Parental posttraumatic stress symptoms as a moderator of child's acute biological response and subsequent posttraumatic stress symptoms in pediatric injury patients. *Journal of Pediatric Psychology*, 2007. 32(3): p. 309-318.
26. Kazak, A.E., et al., An integrative model of pediatric medical traumatic stress. *Journal of Pediatric Psychology*, 2006. 31(4): p. 343-355.
27. Roberts, N.P., et al., Systematic Review and Meta-Analysis of Multiple-Session Early Interventions Following Traumatic Events. *American Journal of Psychiatry*, 2009. 166(3): p. 293-301.
28. Kenardy, J., et al., Information-provision intervention for children and their parents following pediatric accidental injury. *European Child & Adolescent Psychiatry*, 2008. 17(5): p. 316-325.
29. Cox, C.M., J.A. Kenardy, and J.K. Hendrikz, A Randomized Controlled Trial of a Web-Based Early Intervention for Children and their Parents Following Unintentional Injury. *Journal of Pediatric Psychology*, 2010. 35(6): p. 581-592.
30. Zehnder, D., M. Meuli, and M.A. Landolt, Effectiveness of a single-session early psychological intervention for children after road traffic accidents: a randomised controlled trial. *Child and adolescent psychiatry and mental health*, 2010. 4: p. 7.
31. Berkowitz, S.J., C.S. Stover, and S.R. Marans, The Child and Family Traumatic Stress Intervention: Secondary prevention for youth at risk of developing PTSD. *Journal of Child Psychology and Psychiatry*, 2011. 52(6): p. 676-685.
32. Scheeringa, M.S., et al., Trauma-focused cognitive-behavioral therapy for posttraumatic stress disorder in three-through six year-old children: a randomized clinical trial. *Journal of Child Psychology and Psychiatry*, 2011. 52(8): p. 853-860.
33. Melnyk, B.M., et al., Creating opportunities for parent empowerment: Program effects on the mental health/coping outcomes of critically ill young children and their mothers. *Pediatrics*, 2004. 113(6): p. E597-E607.

34. Kramer, D.N. and M.A. Landolt, Characteristics and efficacy of early psychological interventions in children and adolescents after single trauma: a meta-analysis. *European journal of psychotraumatology*, 2011. 2.