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Posttraumatic Stress Disorder in Young Children

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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).[1] However, research has shown that the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV- TR)[2] 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.[3] Therefore, the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), which was released in 2013, included specific diagnostic criteria for PTSD in children under the age of 6.[4]

Prevalence, course, and consequences of trauma reactions

In community samples, a prevalence rate of 0.5% has been reported in children aged 0-6 years old.[5] In trauma-exposed children, a PTSD prevalence rate of 24.8% has been reported in children under the age of 6.[6] However, the prevalence rate largely varies between studies due to multiple reasons. One of the reasons is that the type of trauma may affect the likelihood that a child develops PTSD. Repeated trauma's – as opposed to single event trauma's – along with interpersonal trauma seem to increase chances of developing PTSD by threefold. The highest rates of PTSD typically follow physical or sexual abuse, i.e., 26 and 60%.[1,3,7] Another reason that makes it challenging to determine the prevalence rate, are the different criteria being used across studies to assess PTSD. Some studies use age-specific PTSD criteria, whereas other studies have used DSM-IV criteria which has been shown to underestimate PTSD diagnoses in children below 6 years of age.[8] Furthermore, children aged 0-6 years old undergo rapid developmental changes, and some of the behaviors during a specific phase overlap with PTSD symptomatology (e.g., tantrum during the 'terrible two's' or sleep regression at the 4th month of infancy). Most children with PTSD experience comorbid disorders, i.e., 73%-89% of the children with PTSD.[9–11] Depression, separation anxiety disorder (SAD), oppositional defiant disorder (ODD) are often diagnosed in addition to PTSD.[9,10]

Research with children of all ages has shown that untreated PTSD can follow a chronic and debilitating trajectory.[9,12,13] 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.[14] Additionally, trauma during childhood has been associated with permanent structural[15] and functional[16] brain impairment as well as the onset of psychiatric disorders,[17] health risk behaviours and physical health conditions in adulthood.[18] 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. Results of two recent meta-analyses showed that parental PTSD rates following a child's trauma largely vary, depending on the type of trauma. The first meta-analysis reported an estimated prevalence of 17% and only included children with single-event traumas, such as a traffic accident or burn.[19] The second meta-analysis investigated parental PTSD following a child's medical trauma, and reported a prevalence rate of 30%.[20] Parental PTSD rates seemed to be

lowest following a child's injury (12.6%), but increased when the child had to be admitted to the pediatric or neonatal intensive care unit (around 20%). The highest rates for parental PTSD were reported for children that had a transplantation (30%) or a cancer diagnosis (40.7%). In addition to PTSD, parents can experience clinically elevated levels of acute stress, anxiety, depression and stress within the first 6 months of their child's trauma.[21–23] 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.[21,23,24] There is evidence that parents with PTSD may have more difficulties in showing sensitive behaviors towards their children's needs, which in turn results in higher levels of PTSS in children.[25,26] Furthermore, parents with PTSD seem to be less receptive to their child's traumatic symptoms, which may hinder them in providing adequate care.[27] Therefore, it is important to also treat parental PTSD following a child's traumatic event.[28]

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.[14,28–30] 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.[14,29] 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 parents' fear responses and maladaptive coping responses.[31,32] 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.[31]

Adverse psychological responses in the parent are likely to impact the development of children's trauma symptoms as well as the quality of the parent-child relationship. It is therefore important to also attend to the needs of parents to reduce their own distress and to support their 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. Research has shown that parental behaviors characterized by coping assistance, emotional processing assistance, modeling and encouraging seeking social support have been associated with higher resilience in the child after a traumatic event.[28]

Prevention and early intervention

It is clear that early identification and intervention to prevent the development of acute and persistent PTSS after early childhood trauma are of considerable public health significance. There is considerable potential for intervention in settings such as hospitals and early childcare settings to reduce the risk or prevent the onset of traumatic stress reactions through screening and indicated prevention or early intervention programs.[33] Early identification and intervention 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 children who experience acute transient distress and those that are at risk of developing chronic PTSD[13] and other psychopathology so as not to over-burden scarce mental health resources. It is also important to know whom will benefit from intervention, as some research has shown that early intervention for some children could have detrimental effects as it may intervene with their natural recovery.[34] This may be the case for ongoing traumatic event, such as wars.[34]

In the pediatric trauma literature, a stepped-care model has been introduced in which 1) *universal interventions* are aimed at all children following exposure to a potentially traumatic event, 2) *selective interventions* are targeted towards children experiencing elevated PTSS and/or have identifiable risk factors present and 3) *indicated interventions* are for children presenting with PTSD and additional risk factors for poor long-term outcomes. At the universal level, there are now several excellent evidence-based information provision resources available to support young children, caregivers, early childhood educators, teachers, disaster response teams, mental health clinicians, and other community providers (e.g., The National Child Traumatic Stress Network: http://www.nctsn.org/trauma-types; Healthcare Toolbox: https://www.healthcaretoolbox.org/; Community Trauma Toolkit: https://emergingminds.com.au/resources/toolkits/community-trauma-toolkit/; Birdie's Tree: https://www.childrens.health.qld.gov.au/our-work/birdies-tree-natural-disaster-recovery). There are also a growing number of evidence-based storybooks that have been written to support young children and families who have experienced a range of different potentially traumatic experiences, including natural disasters, pandemics, and medical trauma (e.g., https://www.childrens.health.qld.gov.au/our-work/birdies-tree-natural-disaster-recovery; https://piploproductions.com/).

In the first phase of the stepped-care model, i.e., the *universal level*, screening is recommended as a simple and cost-effective method for identifying children and parents who should continue to be monitored for risk or referred for more comprehensive targeted assessment or treatment.

Screening and assessment tools for identifying children at risk for PTSD have been developed and have been used in children under the age of 6 (see for an overview[8,35]). These tools have shown acceptable reliability and validity for preschool aged children. However, for infants (<12 months), no validated screening methods are available which is a significant gap in the field.

Recently, a *selective intervention* was developed and evaluated for young children specifically (1-6 years old) who had been involved in an accidental traumatic injury.[36] The *CARE Trauma Resilience Program* is a brief targeted early intervention (2-4 sessions) for families where a young child (1-5 years) has experienced a traumatic event and experiencing mild to moderate levels of PTSS and/or anxiety. A multi-site randomised control trial has provided promising preliminary evidence for the efficacy of the CARE intervention was found to be effective in reducing PTSS, functional impairment and behavioral problems, compared to children who received treatment as usual.[36]

Clinically *indicated interventions* that are recommended for treating PTSD in children are Eye Movement Desensitization and Reprocessing (EMDR) and Trauma-focused Cognitive Behavioural Therapy (TF-CBT). Protocols of these treatments have been adjusted for younger children, but the effectiveness of these treatments is mostly studied in older children with just a few studies including children <6 years of age. In younger children (4-10 years of age), two case studies have reported on the effectiveness of EMDR and showed that PTSS reduced in 85% to 100% of the children.[37,38] However, another study, in which one to three EMDR sessions were provided, did not show any improvement in PTSS for children of preschool age.[39] TF-CBT has been studied in preschool aged children (3-6 years of age), and according to a systematic literature review incorporating 11 studies, TF-CBT was effective in reducing PTSS.[40] In addition, Scheeringa and colleagues (2011) have shown that a 12-session TF-CBT with 3-6 year old children exposed to a variety of traumatic events was feasible and effective in reducing established posttraumatic stress symptoms.[41]

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.[42] Melnyk et al 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.[43] 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.

Implications for Parents, Services and Policy

Recognition and understanding of the impact of trauma during early childhood has grown over the past 15 years. However, a lack of empirical research and significant knowledge gaps of how to assess, diagnose, and treat traumatic stress responses during early childhood remain. Further research is needed to (a) determine the nature, frequency, and trajectories of PTSS and other psychological consequences across different stages (infants, toddlers, and preschoolers), trauma types and from underrepresented communities, (b) identify risk and protective factors and identify interactions that moderate or mediate PTSS over time, and (c) develop and validate age-appropriate and culturally sensitive psychological screening and assessment tools and interventions across stepped-care models.

Despite the knowledge gaps, implications for clinical practice and policy can be drawn from the current evidence base. Parents, health services, early childhood education settings and policy makers need to be aware that some (young) children are exposed to traumatic events, potentially on a regular basis. This can result in serious psychological, physical, and social consequences and can have short- and long-term implications and costs across the lifespan. Hospitals and early childcare centres are ideal settings to support child recovery following trauma. Investments are needed to support service and workforce development in early childhood mental health across the continuum of care - from universal mental health promotion, including screening and prevention, to intensive and specialized mental health care. However, any screening and intervention programme needs to be linked into a clinical service with the capacity to deliver appropriate, and developmentally sensitive care, when needed. Furthermore, it is crucial to focus on the parents' mental health, as children's recovery from stressful events occurs best in the context of healing relationships. Young children regulate affect within relationships through co-regulation and learn how to interpret and cope with events by watching how their caregiver reacts. It is therefore essential that evidence-based resources and services are available to support parental wellbeing following a child's trauma, alongside services targeting children's wellbeing.

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