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Preschool children facing mass trauma: Disasters, war and terrorism

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ABSTRACT

Preschool children are exposed to an increasingly wide variety of disasters and terrorist incidents that may have severe effects on their mental health and development. The goal of this paper is to review the research literature regarding the needs of preschoolers in the context of disasters and terrorism with the aim of understanding: a) the consequences of such events for young children and the main moderating variables influencing the event-consequence association. b) the existing methods for assessment, prevention and intervention to provide recommendations and point out required research and development. We differentiate between screening tools that provide initial evaluation and assessment tools for diagnosing preschooler children's' pathology and review possible interventions that address the preschool child's needs before, during and after the incident itself. We discuss the challenges in performing research following disaster and terrorism and the lack of dissemination and research of prevention programs and mass interventions for preschoolers. Finally, we emphasize the need for research and intervention programs aimed at dealing with the impact of terrorism and armed conflict on children's worldview.

Introduction

Two comprehensive articles published in *Current Psychiatric Reports* have recently focused on the specific characteristics of preschool children (0-6 years) exposed to mass disasters, war and terrorism[1,2]. The present article summarizes the specific vulnerabilities of preschool children, their responses and factors moderating these responses, as well as issues concerning assessment and evidence-based treatment approaches.

Outcome and moderating factors

Although it was assumed[3] that preschoolers have a mild response to severe traumas due to their cognitive immaturity, empirical evidence shows that young children, still emotionally immature and lacking autonomy, may be more vulnerable than older children and adults[4]. In addition to experiencing fears, anxiety, mood and somatic reactions or behavioral symptoms such as sleep problems, aggression or regression, many young children exposed to severe events may also develop symptoms of posttraumatic stress disorder (PTSD), some of which have a dissociative nature (e.g., flashbacks, play reenactment)[5,6]. This syndrome is characterized by intrusive symptoms (e.g., memories, dreams, flashbacks); avoidance of

stimuli associated with the event; negative alterations in cognition and mood associated with the traumatic event (e.g., inability to remember important aspects of the event; distorted cognitions about the causes or consequences of the traumatic event that lead to guilt); and alterations in arousal and reactivity associated with the traumatic event (e.g., reckless or self-destructive behavior, hypervigilance, exaggerated startle response)[5].

In the Fifth Edition of the Diagnostic and Statistical Manual[5], the PTSD criteria for preschool children are more developmentally sensitive and behaviorally anchored. For example, the need to show extreme distress at the time of the traumatic event has been deleted; intrusive memories seen through play reenactment may not present as distressing; in addition to modification in wording and some deletions (e.g., sense of a foreshortened future and inability to recall an important aspect of the event), only one symptom is required in either the avoidance symptoms or negative alterations in cognitions and mood; and "extreme temper tantrums" was included to "irritability or outbursts of anger" in the arousal criteria.

Biological outcomes as a result of stress may have neurological, neuro-endocrinal, physiological and genetic aspects for preschool children whose brains are in the process of development, affecting structures involved in emotion processing and regulation (e.g., amygdalae, hippocampus)[7]. In war-exposed children, changes in neuroendocrine markers of stress were associated with a diagnosis of PTSD[8].

Among the factors directly related to the traumatic event and its aftermath that moderate the response of preschoolers exposed to disaster and terrorism, the most important is type and number of incidents and level of exposure. Preschoolers may be exposed directly to the traumatic event, or indirectly through the impact on their caretakers and on their community. Preschool children exposed to the terrorism display significantly higher risk of internalizing and externalizing behavior problems[9], even if they were near the event or knew someone close who was injured or killed. Exposure to media after a mass disaster may also predict symptoms of posttrauma and sleep problems[10]. Displacement as a result of political conflicts or natural disasters creates significant amounts of stress on the young child as well as on the entire family system, due to the loss of the usual routines, schools, health care and economic instability. The vulnerability of a preschool child to the experience of a significant traumatic event is also determined by the accumulation of stressful life events such as migration, the birth of a sibling, the death of family members, parental divorce, or violence in the home[11].

In regard to the factors related to the human environment, the most critical for preschool children concerns the level of protection and containment felt from the parents. In that regard, children will be more protected and display fewer psychological symptoms (e.g., posttrauma, behavioral problems, somatic complaints) if they enjoy a healthy relationship with the parents and if the parents' reaction to the trauma is more contained[12]. Therefore, a secure attachment is of particular importance in the ability of the preschool child to regulate and process traumatic events, supported by the caregiver's containment, emotional availability and empathic responsiveness[8]. Notably, most studies in this domain do not focus on the child-father or the triadic relation but mainly on the mother vis-à-vis the young child[13]. The quality of family atmosphere may also play a significant role in the processing of trauma, particularly the parental ability to maintain their role, the level of tension and anxiety that may naturally increase, and how much support the family experiences from friends, the extended family, and the community.

However, when understanding the association between the reaction of parents and children to traumatic events, one should consider two important issues: first, that the influence in the parent-child dyad could be bidirectional, that is the reaction of the child may also influence that of the parents, and second, that a genetic susceptibility for developing posttraumatic stress may be transmitted to the children by the parents[14]. To support the importance of genetic contributions to the child's reactions to trauma, research has found that PTSD risk is associated with an interaction between genetic dispositions and early experiences[15] and with a combination of a biological, oxytocin-vasopressin genotype and sensitive caregiving by mothers during evocation of a traumatic event[16]. Some characteristics of the preschooler's inborn temperament, such as the capacity for self-regulation, have been found to impact the type of response and the level of adjustment following exposure[17], especially when parental containment is compromised.

Studies suggest the importance of considering the child's age during the traumatic exposure, an indicator of psychological development of the preschooler, as another significant moderating factor. In one study, the probability of developing PTSD was twice as higher in children exposed to trauma at the ages 3 to 5 compared to younger ones (ages 1.5 to 3)[18]. The vulnerability of the 3 to 5 age-period may be a consequence of increased anxiety and regression due to the acquisition of skills that enable children to project to the future (linguistic, symbolic, and executive).

Assessment

Assessment of preschool children ought to consider their limited verbal abilities and the fact that parents are more likely to notice their symptoms (e.g., sleep disturbance, separation difficulties)[11,19,20]. Screening tools

reported by parents of risk factors (stressful life events and disaster-related incidents) and acute stress predicting later psychopathology allow swiftly reaching significant numbers of children. These include the Child Behavior Checklist-Posttraumatic Stress Disorder[21], the Pediatric Emotional Distress Scale Early Screener[22], the Change of Functioning Scale[23] and the Devereux Early Childhood Assessment[24]. Assessment scales such as the Diagnostic Infant Preschool Assessment (DIPA)[25] are critical to identifying the specific criteria of preschoolers' posttraumatic stress that have been recently adapted[26]. Because parents of traumatized young children usually report a significant level of distress that may affect the objectivity of their report, the direct assessment through behavioral observation of the children seems paramount.

Prevention/Resilience and Preparedness

Caring for masses of exposed children requires enhancing their readiness by strengthening their resilience prior to the traumatic exposure. Within the family, secure attachment and supportive care influence children's adaptation[27]. By preparing families for future disasters, we may enhance their role and decrease helplessness, guiding caregivers during and immediately after an incident.

Resilience enhancement prevention programs to face mass trauma have been published for school children[28] but not for preschoolers. For example, a universal cost-effective teacher-delivered intervention aimed at building resilience among children exposed to ongoing rocket attacks demonstrated a 57% lower rate of post-trauma symptoms in the intervention compared to a control group. The intervention included techniques of cognitive balance, physiological management and emotional containment and regulation[29]. In addition, by reinforcing the child-parent relationship, parental sensitivity, and attachment patterns, parental resilience programs may mitigate preschoolers' exposure. Because most societies could be exposed to natural or human-made disasters, it seems that resilience enhancement programs targeting all children could be a cost-effective public health approach.

During, immediately and several weeks after the incident

The role of providing basic needs (e.g., water, food, shelter, sleep) and helping caretakers in the containment and processing of children's stress is paramount. However, the stressful reaction of parents to the traumatic incident may affect their ability to contain the preschoolers' feelings. Exposure to media can be distressing for adults and also for preschoolers, who are sensitive to the reactions of their parents and lack understanding of the images watched as well as may not understand that they are watching the same event over and over [9,30,31]. Therefore, a general recommendation is to restrict preschool children's media viewing of disaster events and/or to provide parents with strategies for addressing the media with children [32,33].

Traumatic memories are created by experiences that cause high levels of emotional arousal that activate stress hormones. These memories may become consolidated as enduring long-term memories shortly after the exposure, with harmful long-term consequences in young children. Therefore, interventions aiming at processing traumatic experiences need to be provided shortly following the event, despite the possible disruption of naturally recovery processes. For example, through storytelling and drawing, Psychological First Aid recruits family resources to strengthen the traumatized family system and facilitates the expression and processing of feelings in the immediate aftermath of disaster and terrorism[34]. Psychoeducation to caregivers offers information about adaptive and maladaptive responses of children and adults following mass trauma[19] to help sensitively conceptualize reactions and needs[18]. Despite the clinical experience, the evidence of these promising approaches still needs to be demonstrated for preschool children.

Interventions

Because most societies lack the resources required to individually assist masses of children, post-disaster therapeutic approaches may require a group format, such as universal teacher-delivered interventions in the kindergarten setting[35,36,37]. Supported by the trusting relations with children and parents, these non-stigmatic interventions have been found to effectively reduce the post-exposure suffering of school-age children following natural disasters and wars[35,36,37,38,39].

However, for the most symptomatic preschoolers, group interventions may not be sufficient to alleviate their suffering. In these cases, cognitive behavioral therapy (CBT) approaches[40], narrative exposure therapy[41], and Eye Movement Desensitization and Reprocessing[42] could be considered. Trauma-focused cognitive-behavioral therapy (TF-CBT) for preschoolers with PTSD has shown efficacy in controlled trials[43]. The protocol comprises psychoeducation about PTSD, recognition of feelings, training in coping skills, graduated exposure to reminders and safety planning.

Preliminary findings also demonstrated the efficacy of Prolonged Exposure therapy (PE) adapted to children aged 2-3 and their parents following invasive medical procedures[44]. This approach combines psychoeducation, recounting traumatic scenes and in-vivo exposure.

Child-Centered Play Therapy may provide preschoolers with a nonverbal means of expression[45]. A meta-analysis of 93 controlled studies demonstrated the effectiveness of play therapy with children exposed to traumatic experiences[46].

For example, Huggy-Puppy (HPI), in which children are asked to take care of a Huggy-Puppy doll, found significant reductions in stress reactions among children aged 3-6 exposed to a war[47].

As disasters or terrorism affect entire families, family or parent-child approaches, though still awaiting empirical support, may enhance parents' ability to mobilize resources, contain own fears and those of their child and learn skills to cope with avoidance and reminders[48].

Despite the extensive use in the treatment of preschool PTSD[49], psychopharmacological interventions are not recommended until randomized controlled trials are conducted. The practice guidelines[50] of the American Academy of Child and Adolescent Psychiatry emphasize the need to address the safety and efficacy of these medications with preschoolers, especially considering the developing brain of young children. Medications are justified primarily to treat comorbid symptoms among children[51], for example sleeping problems[49,52].

Conclusions

Empirical studies contribute critical information concerning assessment, prevention and intervention with young children. The challenges in performing research following disaster and terrorism concern the categorization of different types of traumatic exposure (e.g., type and severity), the capability to operate under a state of urgency and chaos characteristic of post-disaster environments, ethical concerns regarding withholding treatment, and using assessment tools that control for caregivers' bias.

As working in a group format may be more cost-effective following mass disasters, there is a need for mass interventions for preschoolers to be validated. Moreover, teacher-delivered evidence-based interventions that have shown promising results in preventing and reducing psychological symptoms are needed for preschoolers in kindergarten and daycare settings.

Another research area that is particularly lacking is the potential impact of events such as mass disasters, continued terrorism, and armed conflict on children's worldview. Psychotherapeutic and socio-educational programs aimed at dealing with this impact on traumatized children may help prevent the formation of stereotypes and the potential cycle of violence in future generations.

This review described the needs of preschool children by discussing how to strengthen their endurance, assess their problems, and intervene to help them avoid or overcome the negative consequences of disasters and terrorism. Intervention programs are also needed for refugees worldwide who require culture-sensitive professional support, and for victims of inner-city violence. The coordination of service providers during routine times may augment social capital and the resilience of communities at risk to face future challenges[53].

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Conflicts of Interest

The authors conform that they have no conflicts of interest.

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