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Youth's Reactions to Disasters and the Factors That Influence Their Response

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Abstract

Youth's reactions to disasters include stress reactions, posttraumatic stress disorder (PTSD), and comorbid conditions. A number of factors contribute to outcome including characteristics of the event; the nature of the youth's exposure; and individual, family, and social predictors. Demographic features may be less important than exposure and other individual variables like preexisting conditions and exposure to other trauma. While youth's disaster reactions reflect their developmental status and thus may differ from those of adults, their reactions generally parallel those of their parents in degree. Family factors that appear to influence youth's reactions include parental reactions and the quality of interactions within the family. Social factors have not been well examined. We describe these outcomes and predictors to prepare professionals who may work with youth in post-disaster situations.

INTRODUCTION

An apparent increase in disasters in recent years has garnered the attention of both professionals and the public resulting in an expanded knowledgebase about these events and their effects. Disasters can damage and overwhelm the infrastructure needed for response. As we saw with Hurricane Katrina, inadequacies in response can engender enduring mistrust, demoralization, and social disarray. While most individuals are resilient even in the face of catastrophe, the chaos, confusion, and destruction as well as the human morbidity and mortality associated with disasters can create collective trauma (McFarlane & Norris, 2006). Youth are especially vulnerable to the effects of disasters. Their reactions span the continuum from distress and transient emotional and behavioral changes to impaired functioning and enduring psychopathology (Norris et al., 2002).

Disaster mental health is a burgeoning field with opportunities for general practitioners as well as specialists. In fact, disaster management encourages, and indeed depends on, professional and lay volunteers from the community where an event occurs. Fortunately, events do not occur often, but they are commonly unpredictable. Thus, some level of professional readiness is essential. This article addresses the need for preparedness by providing a basic primer on children's disaster reactions and the factors that influence their reactions. Rather than providing a comprehensive critique of the literature, we review exemplary research to summarize pertinent findings and also present additional studies to highlight other issues of interest.

OUTCOMES ASSOCIATED WITH DISASTERS

Numerous studies have contributed to the knowledgebase about child disaster mental health. The outcomes most commonly examined in relation to disasters are posttraumatic stress disorder (PTSD) and stress symptoms, depressive and anxiety disorders, disturbed behavior, grief, and impaired functioning.

Outcomes

In a comprehensive study of youth's reactions to disasters, William Yule and colleagues (2000) assessed a survivor group of over 200 young adults five to eight years after being exposed to a shipping disaster during their adolescence. This sample was compared to a group of sex- and age-matched friends and acquaintances attending the same school. Approximately one-half of the survivors developed incident-related PTSD, which endured for over five years in one-fourth of the survivors who developed the disorder (Yule et al., 2000). Rates of any new post-disaster anxiety or mood disorder among survivors who developed PTSD were higher than rates of these disorders among the unexposed participants. Survivors who did not develop PTSD did not have higher rates of anxiety and mood disorders than unexposed participants (Bolton et al., 2000). This suggests that the occurrence of other post-disaster disorders was more tied to vulnerability to PTSD rather than comprising an independent response to disaster exposure per se.

Some studies have investigated outcomes in terms of emotional and behavioral responses rather than diagnoses. For example, Shaw and colleagues (1995; 1996) examined a host of internalizing and externalizing symptoms in a longitudinal study of elementary school children (6–11 years of age) exposed to Hurricane Andrew. Participants in this study were enrolled in both high- and low-impact schools. The high impact school was directly in the path of the hurricane, while the low-impact school was north of Miami and not in the hurricane's direct path. Most children in both high- and low-impact schools exhibited at least moderate levels of symptoms. Two months after the event, children in the high-impact school had significantly higher posttraumatic symptom frequency scores than those in the low-impact school (Shaw et al., 1995). Posttraumatic stress symptoms decreased over time. At 21 months, 70% of all of the children from the high-impact school still exhibited moderate to severe symptoms (Shaw et al., 1996).

The findings related to externalizing behaviors are of particular interest. There was an initial marked decrease in school-reported externalizing behaviors in children in the high-impact school during the first two grading periods post-hurricane which was followed by a return to levels of the previous year. By contrast, in the low-impact school, there was a temporary increase in disruptive behavior, which the authors suggested may have resulted from increased demand and limited resources in the low-impact school due to the influx of students transferring from directly affected areas coupled with a shift of resources to directly affected areas (Shaw et al., 1995).

Traumatic grief, which may occur with loss of a loved one in traumatic events such as disasters, is conceptualized as intrusion of trauma symptoms into the bereavement process. Youth do not typically experience persistent trauma symptoms as part of the grief process even if the loss is traumatic (Cohen et al., 2002). With traumatic grief, thoughts and images can be so terrifying and anxiety-provoking that the child avoids or suppresses other thoughts and images of the deceased that might serve as comforting reminders of the person (Brown & Goodman, 2005). Preliminary evidence suggests that traumatic grief can be distinguished from normal grief. Brown and Goodman (2005) studied children (8–18 years of age) of uniformed service personnel killed in the 2001 World Trade Center attack. Factor analysis identified three distinct child response factors. The first, a traumatic grief factor, included PTSD symptoms (intrusive reexperiencing, avoidance/numbing, hyperarousal), revenge, yearning, and impaired functioning. Two other factors, positive memory and ongoing presence, delineated normal grief responses. Positive memory appeared to capture the process of memory construction needed for the child to maintain an inner representation of the deceased. Ongoing presence of the deceased may provide comfort to the bereaved child.

FACTORS AFFECTING OUTCOME

Many factors can influence how youth respond to disasters. These can include the characteristics of the disaster and youth's exposure to it, individual characteristics, family factors, and the social environment – both pre- and post-disaster. See Table 1.

Disaster Characteristics and Exposure

The literature identifies disaster characteristics, and characteristics of the environment in which the disaster occurs, as predictors of outcome. These characteristics include, for example, predictability, duration, morbidity and mortality, property loss and destruction, disruption and chaos, and later secondary disaster-related adversities (e.g., unemployment and lost income) (Institute of Medicine, 2004). Predictability of a disaster is likely to influence preparedness activities. Duration may influence perceived life threat, loss, and secondary adversities. The extent of victimization and property damage may determine response and recovery efforts.

Youth may be exposed to disasters in many ways. For example, they may be physically present at the disaster site or their close family members and/or friends may be directly exposed. We know little about the relative importance of these exposures or about confounding effects among them. While not representing disaster exposure per se, children may also lose cherished possessions in disasters, and they may watch extensive and graphic television coverage of the event, which can also be distressing and further confound exposure effects. Secondary adversities in the recovery environment may further stress children by creating hardship that precipitates, maintains, or increases negative reactions. Shaw and colleagues (1996) attributed increased psychopathology and high levels of enduring posttraumatic stress and behavioral disruption 21 months after Hurricane Andrew to experiences of persistent secondary adversities, ongoing traumatic reminders, and pervasive demoralization.

The youth's subjective appraisal of danger and life threat in association with an event is a key aspect of the traumatic experience. The diagnosis of PTSD requires a subjective reaction of "intense fear, helplessness, or horror" as part of exposure (American Psychiatric Association, 2000, p. 463). Numerous studies document the association between subjective appraisal of danger and life threat with adverse outcomes (Silverman & La Greca, 2002). For example, with the young adults exposed to the shipping disaster, subjective appraisal of life threat, along with the degree of exposure and level of anxiety measured five months post-disaster, were the best predictors of PTSD (Udwin et al., 2000).

Child Characteristics

A number of individual characteristics have been linked to disaster outcomes. These include demographic features such as age, gender, and racial/ethnic heritage; preexisting disorders; and exposure to prior trauma.

Demographics—Of the demographic factors thought to be important in child outcomes, only gender has been well studied and the results are inconsistent. The influence of age on trauma is complex (Silverman & La Greca, 2002). Immature cognitive and verbal ability may limit or alter the expression of distress in very young children, but that does not mean young children are unaffected. Greater cognitive capacities of older children and adolescents enable them to conceptualize the dangers that accompany disasters. Older children and adolescents also should have better developed coping skills to deal with these events. Studies suggest that ethnic minority youth may be at greater risk for maladaptation in the context of disasters than youth from the majority population (Silverman & La Greca, 2002). It is unclear, however, to what extent poorer outcome reflects differences in socioeconomic status, different disaster experiences, exposure to other traumatic events, and/or family or other social influences rather than ethnicity.

In the final analysis, demographic characteristics of youth exposed to disasters may prove less important than exposure and other variables in predicting disaster outcome. These other variables include preexisting conditions, exposure to other trauma, and family and social variables, as described in more detail below.

Preexisting Conditions—Disaster studies have identified the importance of preexisting conditions, especially anxiety symptoms and disorders, in disaster outcomes. For example, preexisting anxiety symptoms, attention problems, and academic difficulties predicted PTSD symptoms associated with Hurricane Andrew three months after the disaster while preexisting anxiety symptoms predicted PTSD symptoms seven months after the disaster (La Greca et al., 1998). Similarly, one year after the Northridge earthquake, children (8–18 years of age) with pre-event anxiety disorders had significantly more posttraumatic stress symptoms than did those without pre-event anxiety disorders. Neither pre-event depressive disorders nor disruptive behavior disorder were associated with PTSD symptoms (Asarnow et al., 1999).

Other Trauma—Exposure to other trauma also contributes to disaster outcome. In a study of children six months after Hurricane Andrew, lifetime trauma and post-hurricane events were among a number of variables that predicted PTSD (Garrison et al., 1995). Pfefferbaum and colleagues (2003) found that posttraumatic stress reactions related to other trauma contributed significantly to disaster-related posttraumatic stress in Nairobi school children (9–17 years of age) 8 to 14 months after the 1998 bombing of the U.S. Embassy.

Family Factors

While children's disaster reactions reflect their developmental status and thus may differ from those of adults, children's reactions generally parallel those of their parents in degree (Silverman & La Greca, 2002). Children may respond to parental distress, and they take cues from their parents about danger and safety. Decreasing strength in the relationship between parent and child reactions as children age may reflect increasing autonomy as youth develop and mature (Laor et al., 2001).

The quality of interactions within the family also influences the child's adjustment (Laor et al., 2001; McFarlane, 1987). For example, McFarlane (1987) found emotional and behavioral problems in children from families characterized by parental irritable distress, over-involvement or enmeshment, and overprotection. Neither parental overprotection nor irritable

distress alone was a problem, but together they did constitute problems for children, perhaps, because parents in these families conveyed the potential for danger. High involvement and high parental irritable distress also created problems (McFarlane, 1987). A five-year longitudinal study of Israeli families displaced because of damage to their homes by SCUD missile attacks during the first Persian Gulf War found that family cohesion—the emotional bonds among family members—was a predictor of preschool-aged child adjustment. Both disengaged and enmeshed families created risk for displaced children. Disengaged families may not help the child process traumatic experiences while enmeshed families may spread unmodified negative emotions from one family member to another (Laor et al., 2001).

Social Factors

Social factors have not been well examined as predictors of child adjustment to disasters. Udwin and colleagues (2000) found that self-reported perceived and received social support just after a shipping disaster and at follow-up were associated with the development and duration of PTSD. Among adolescents with PTSD, those who reported receiving little or no help from their schools following the disaster had more PTSD symptoms (Udwin et al., 2000). Similarly, La Greca and colleagues (1996) found that children reporting high levels of social support from significant others during the three months immediately after Hurricane Andrew had fewer posttraumatic stress symptoms at ten months.

CONCLUSIONS AND IMPLICATIONS FOR PROVIDERS

Research has documented stress reactions, PTSD, and comorbid conditions in youth exposed to disasters. As many as one-half of those directly exposed to severe events may develop diagnosable psychopathology which may endure for years. PTSD appears to be the most prevalent post-disaster disorder and to be associated with vulnerability to other disorders. Thus, providers working with youth in post-disaster environments should anticipate PTSD symptoms but must not be so focused on PTSD that they miss other treatable symptoms and conditions. In some youth, preexisting externalizing behavior problems may decrease initially, but these behaviors appear to resume later. Follow-up is essential to understanding the full course of children's reactions and recovery.

Research has also elucidated a number of factors that contribute to youth outcomes including event characteristics and exposure and individual, family, and social predictors. These factors help providers identify high-risk groups and they suggest service delivery strategies. For example, youth with the greatest exposure and those with preexisting conditions are likely to suffer the most. In addition, since youth in the disaster setting tend to respond to parental distress, interventions aimed at helping parents should benefit youth as well.

Additional research is essential to address numerous gaps in our knowledge. For example, more precision is necessary in exploring trauma exposure and its differential effects on outcome. Further research is also necessary to clarify the potential interactive risks created by socioeconomic disadvantage, preexisting conditions, and exposure to other trauma as well as to better delineate the contributions of family and various social factors. Moreover, our appreciation of outcomes and the factors that predispose and protect youth would be enhanced by systematic exploration of resilience, coping, and the factors that promote healthy adaptation.

While many youth are resilient in the face of disaster, distress in many and suffering in some requires professional attention. Disasters are often unpredictable, and they have the capacity to damage social and professional infrastructures, sometimes overwhelming response systems. The disaster mental health field is advancing, with apparent increased interest in the field. Providers who serve youth must prepare for disasters by learning about the effects of these events and about the factors that influence their effects.

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Table 1

Factors Affecting Outcomes in Youth Exposed to Disasters

<u>Disaster Characteristics</u>	
>	Predictability of the disaster
>	Duration of the disaster
>	Morbidity and mortality caused by the disaster
>	Property loss and destruction due to the disaster
>	Disruption and chaos created by the disaster
>	Secondary adversities
<u>Exposure</u>	
>	Physical presence
>	Close relationship to victims and survivors
>	Subjective appraisal of danger and life threat
>	Media coverage
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<u>Child Characteristics</u>	
>	Demographics (age, gender, ethnicity, socioeconomic status)
>	Preexisting conditions
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<u>Family Factors</u>	
>	Parental reactions
>	Family interactions
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<u>Social Factors</u>	
>	Social support