

PSYCHOLOGICAL FIRST AID TREATMENT FOR CHILDREN

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Abstract

It is widely recognized that the techniques used by emergency medical personnel have a direct impact on the long term physical outcome of victims. This knowledge has led to refinement of emergency medical practices resulting in fewer long term complications from traumatic injuries. During a disaster, psychological health interventions have been reported to affect the severity of conditions such as Post Traumatic Stress Disorder (PTSD). Crisis victims, including children, have the potential to develop PTSD after exposure to an extreme traumatic stressor. This paper reviews the impact of recent disasters in the United States on the psychological health of children and discusses practice implications for emergency management and emergency medical personnel working with children who have been exposed to traumatic experiences.

Introduction

Natural and man-made disasters have the potential to not only cause substantial physical harm, but psychological harm as well. One such psychological impact to children is Post Traumatic Stress Disorder (PTSD). PTSD has the potential to cause short and long term health problems and impacts individuals at any age but can be particularly devastating for children following a disaster due to the ability of PTSD to disrupt normal childhood development (Lipschitz, Rasmussen, & Southwick, 1998). Diagnosis is dependent on individuals meeting specific criteria including: 1) Exposure to a traumatic event in which actual or threatened death or serious injury to self or others evokes fear, helplessness, or horror. This may be expressed in children as disorganized or agitated behavior. 2) The individual must demonstrate re-experiencing of this event, 3) persistently avoid stimuli associated with the event with numbing of general responsiveness, and 4) demonstrate increased arousal (American Psychological Association, 1994). Symptoms of PTSD vary by age. Young children display symptoms such as distressing dreams, repetitive play simulating the incident, physical symptoms such as stomachaches, and parents or teachers may notice decreased affect and interest in activities normally enjoyed (American Psychological Association, 1994).

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The psychobiological changes that occur with PTSD have been studied extensively in adults. Less is known about these psychobiological changes in children. Typically the body returns to the pre-crisis state after a stressor has been removed. With PTSD, there is continued activation of the sympathetic nervous system which keeps victims in the flight or fight state. Schnurr, Friedman, and Barnardy (2002) state, "In short, the adrenergic system in people who have PTSD appears to have been recalibrated to deal with a permanent life-threatening crisis." Similar changes in the sympathetic nervous system have been suggested by studies of children with PTSD (Lipschitz, Rasmussion, & Southwick, 1998). In adult studies, changes in hormones that are regulated by the hypothalamic pituitary adrenocortical axis such as corticotrophin releasing factor and cortisol have been reported (Schnurr, Friedman, & Barnardy, 2002). There have been few studies that address changes in the hypothalamic pituitary adrenocortical axis in children with PTSD symptomatology. In these limited studies, changes in cortisol level among children with PTSD were noted (Lipschitz, Rasmussion, & Southwick, 1998). Fear conditioning is also exhibited in adults with PTSD. When confronted with a trauma related stimulus in the laboratory, individuals with PTSD will demonstrate sudden increases in the response of the sympathetic nervous system such as an increase in heart rate and blood pressure. Individuals with PTSD also demonstrate an increased startle response (Schnurr, Friedman, & Barnardy, 2002). Studies of startle response in children with PTSD symptomatology are lacking. One such study did find changes in the startle response of children, but these changes could not conclusively be linked to PTSD (Lipschitz, Rasmussion, & Southwick, 1998).

These psychological and psychobiological symptoms of PTSD impair the individual's ability to perform daily activities. Difficulty with daily activities has been reported in children following a trauma. Traumatized children face potential temporary or permanent difficulty with the "acquisition of cognitive, social, and emotional milestones" (Carrion, Weems, Ray, & Reiss, 2002). Among children, functional impairment has been reported in children who do not meet the full diagnostic criteria for PTSD. These children were reported to demonstrate "...substantial functional impairment and distress" (Carrion et al., 2002). This is an important consideration as many children are reported to suffer from PTSD symptomatology from a distance, thereby precluding a full diagnosis of PTSD (Terr et al, 1999).

Many American children are projected to be at risk from the physical and psychological impact of disaster related trauma experienced directly or indirectly. During 2002, the United States Federal Emergency Management Agency declared 49 major disasters in the United States due to these severe conditions (Disasters of, 2003).

Thesis

It is important that emergency management personnel have an understanding of what PTSD is, the prevalence of PTSD following disasters, risk factors for PTSD, immediate measures and protocols to follow to decrease the risk of PTSD in crisis survivors. The importance of incorporating mental health professionals in emergency planning and training efforts to meet the needs of children and families exposed directly or indirectly to a disaster must be recognized and acted upon by emergency management personnel. Just as proper treatment of physical problems during crises has the ability to decrease the negative long term consequences on physical health; interventions aimed at maintaining psychological health have the potential to positively impact the long term psychological health of crisis survivors and reduce the incidence of short and long term symptoms associated with PTSD.

Sources of Information

Information discussed was generated through a literature review of studies conducted following three major disasters occurring in the United States between 1986 and 2001: Hurricane Andrew, the Challenger Explosion, and the Terrorist Attacks of September 11th, 2001. Hurricane Andrew is listed as one of the top ten hurricanes by the Federal Emergency



Management Agency having caused \$27 billion in damages and 58 deaths in the southeast coast states of Florida and Louisiana in 1992 (Hazards, 2003; Top Ten Hurricanes, 2003). South Miami, Florida alone, had 100,000 homes damaged requiring the relocation of approximately 10,000 school age children (Shaw et al., 1995). In January of 1986 the Challenger Space Shuttle exploded upon take off killing all seven crew members. This loss of life was captured on television and watched live by many children as one of the crew members was Christa McAuliffe, a northeast coast New Hampshire school teacher. The terrorist attacks of September 11th had a profound impact on children throughout the United States. During these attacks terrorists flew two planes into the World Trade Center in New York City, one into the Pentagon in Washington DC, and a fourth plane crashed into the Pennsylvanian countryside. In total 3,044 lives were lost in this attack (September, 2003). While all of these incidents occurred in the eastern United States the events of this disaster were widely publicized on the news and were viewed by adults and children throughout the United States.

The following section outlines the results of previous studies focused on the impact of disasters in the United States on the psychological health (the incidence of PTSD) of children directly or indirectly exposed to selected disasters occurring in the United States between 1986 and 2001. The discussion will focus on the practice implications for emergency planners and emergency medical personnel working with children at risk of PTSD following a disaster.

Findings

Following Hurricane Andrew, the prevalence of self reported moderate to very severe symptomatology of PTSD among children who attended schools in the pathway of the hurricane was between 55.8% and 87.1% (La Greca, Silverman, Vernberg & Prinstein, 1996; Shaw, Applegate, & Schorr, 1996; Shaw, et al. 1995; Vernberg, La Greca, Silverman, & Prinstein, 1996). Shaw et al. (1995) reported a decrease in symptomatology from 87.1% at two months to 75.8% at 32 weeks and finally to 70% at 21 months. Le Greca et al. (1996) reported a decrease from 55.8% at three months to 41.7% at seven months and 33.5% at ten months after the event. These studies of children following Hurricane Andrew demonstrate the high degree of initial PTSD symptomatology as well as the potential for lingering symptomatology over time often due to secondary trauma associated with the disaster. These findings demonstrate that strong short term immediate crisis response and long term emergency recovery and mitigation efforts must incorporate mental health programming to both track and continue to provide services for affected children.

The continued high level of PTSD symptomatology over time among children following Hurricane Andrew was explained by Shaw et al. (1995) as process trauma related to secondary stressors such as destruction of the community's infrastructure resulting in disruptions of school, community, home displacement, loss of jobs, and support systems. Since recovery is one of the overall objectives of effective emergency management, the rapid success of recovery strategies can greatly assist in reducing secondary stressors contributing to PTSD.

Not all children experiencing a disaster develop symptoms of PTSD. When considering children at risk, level of exposure was a strong predictor of increased PTSD symptomatology during Hurricane Andrew (Shaw et al., 1995; La Greca, et al., 1996; Vernberg, et al., 1996). Other predictors included being female (Shaw, Applegate, Schorr, 1996; Vernberg, et al., 1996), children from minority ethnic groups (La Greca et al., 1996), using blame and anger as a means of coping (Vernberg, et al. 1996), and having less social support (La Greca et al., 1996; Vernberg, et al. 1996). The impact of the disaster on the support network of children is an important consideration as children are impacted by the responses of the adults (Helping Children Cope, 1998). In working with children after Hurricane Andrew, Shelby and Tredinnick (1995) noted that children often felt a sense that security and predictability had been shattered "Many children experienced their parents screaming, crying, and being out of control, as never before." Davidhizar & Shearer (2002) note that positive adult attitudes facilitate a child's ability to deal with trauma.



While direct exposure was a strong predictor of PTSD symptomatology, it is also important to note that studies of children who were not in the direct path of the hurricane also reported a high degree of PTSD symptoms (Shaw et al. 1995). Of children found not to be in the direct path of the disaster 38.6% were found to have severe to very severe symptomatology, 40.9% moderate symptomatology and 20.5 doubtful to mild symptoms. Shaw et al. (1995) discussed PTSD symptomatology among these children in relation to “effects of the press of evacuation, emotional contagion, the peripheral impact of the storm, the initial uncertainty as to where the storm would strike, and media exposure”. The development of PTSD symptomatology among children who did not personally experience a life threatening situation but watched it live or taped on television was also reported in studies of children following the Challenger explosion and the terrorist attacks of September 11th.

Terr et al. (1999) studied the distance impact of the Challenger incident on children from the west coast who did not watch the incident live with those on the east coast from Christa McAuliffe’s home town who watched the broadcast live or attended the lift off. PTSD symptomatology was reported in both groups of children even though almost all of these children (115 of the 124 children evaluated did not view the liftoff in person) watched the event only on television. Children on the east coast evaluated from Christa McAuliffe’s home town in New Hampshire were more likely to report PTSD symptoms from television exposure than children on the west coast. The authors concluded that “...for children raised from birth with television, the immediacy of the medium seems almost as real as pure, untouched reality.” Indeed, the authors reported that there were no statistically significant differences between the symptoms of those who viewed the incident live on television on the east coast and those from the east coast who attended the lift off in person (Terr et al. 1999). Television viewing has also been reported to be an important aspect of PTSD symptomatology among children viewing the events of the September 11th terrorist attacks. In a recent study, Schuster et al. (2001) reported an association between the number of hours of television coverage of the attacks watched by a child and the number of stress symptoms that were reported.

While children in the immediate vicinity of the September 11th terrorist attacks were most impacted, children throughout the United States were also impacted by these events. The distress among children has been documented nationally with a high in New York City of 60.7% (where the two planes collided with the twin towers of the World Trade Center), other major metropolitan areas 57.3%, Washington, DC 54.9% (where the plane collided with the Pentagon), and the remainder of the United States 48% (Schlenger et. al., 2002). Increased access to psychological health care following the terrorist attacks was reported by Hoge and Pavlin for the Washington D.C. area. Military beneficiaries living within 50 miles of Washington D.C. had a post September 11th increase of 46% in children seeking treatment for anxiety disorders and a 50% increase in children seeking treatment for PTSD (Hoge & Pavlin, 2002).

The magnitude of reported PTSD symptomatology among children in these studies clearly demonstrates the need to incorporate interventions aimed at the psychological health of children in emergency management plans.

Discussion

The synthesis of the preceding studies focused on PTSD symptomatology in children provides valuable information for emergency managers and planners as well as emergency medical service personnel as they identify resources, plan and co-ordinate needed teams to address the physical and psychological health needs of children during and after disasters. Emergency planners must insure that the emergency plans developed at the regional, state and local levels consider the following issues:



- First and foremost it is important that emergency medical personnel serving as first responders understand the psychological consequences of trauma on children which is important in recognizing at risk situations. PTSD symptoms are common following a disaster and these symptoms may persist over time impairing the child's ability to function on a daily basis.
- Mental health professionals are an essential component of the emergency response team in developing treatment plans and in working directly with children. While first responders may be the initial contact for many at risk children, it is important for these children to have immediate access to mental health professionals with extensive knowledge in assessing and addressing the psychological needs of children. As a part of the planning team, mental health professionals are critical in identifying and providing adequate resources to address the psychological needs of children.
- Children's perception of the level of danger can be influenced by the reactions and responses of a parent or an individual in authority. The ability of first responders to remain calm and to also calm parents is important in maintaining the most positive atmosphere possible for a child during and following a disaster.
- Emergency response plans must include measures to strengthen coping skills of the parents and to support the social structure for at risk children. Assisting parents in gaining control through the prior development and practice of home emergency response plans can also help both parents and children increase their sense of control.
- It is important that emergency response plans address the fact that post disaster stressors add to the psychological impact of the disaster for children. These stressors can include fear of physical safety as well as over exposure of children to disaster coverage provided by the media. Emergency management plans may include information for parents and caregivers recommending that children's exposure to repeated discussions or media coverage of disaster events be very limited.
- The issue of "process trauma" clearly demonstrates the importance of reestablishing the continuity of community services. Emergency response plans typically focus on returning the community to pre-disaster service levels as soon as possible. However, resource allocation for emergency services must recognize that areas of the community with the longest lag time before services are returned may need greater resources for mental health services to meet the needs of affected children than those sections of community with quick recovery time.
- Plans mitigating the psychological impact of a disaster experience on children should include protocols and strategies to meet both the short and long term needs of children at risk of PTSD. One time interventions in most cases will not be sufficient to reduce the symptomatology of PTSD in at risk children. Plans must address the need for mental health professionals to have access to the children for an extended period of time.
- Children may have stress reactions even though they have not directly experienced trauma. While prevalence rates are increased among certain children, it is clearly evident from the studies discussed that children need not experience an event directly in order to demonstrate symptoms of post traumatic stress but may experience traumatic events if observed through a media such as television.
- Planning and training must recognize that children react differently to a stressor than do adults and their behaviors are related to their developmental level. For example, while an adult may re-experience a traumatic event through intrusive memories of the event, young children tend to demonstrate repetitive play based on the event.
- Just as any other aspect of an emergency response plan, all protocols and practices within the section to mitigate the psychological impact on children must be practiced and resources to continue ongoing training and drills must be acquired and maintained.
- Emergency management professionals responsible for the development of an emergency plan must collaborate with mental health professionals to insure that each plan that is created has specific objectives addressing the mental health needs of



children and strategies addressing how the emergency management unit will mobilize to meet those needs.

As a special population, children after direct and indirect exposure to an extreme traumatic stressor can be at great risk of PTSD. The development, practice and implementation of effective strategies outlined within the emergency management plans of municipalities and regions should go beyond meeting the physical needs of children and address the psychological needs as well. Sufficient resource allocation and the practice of effective protocols by emergency medical personnel and other emergency responders working with children has been demonstrated to greatly reduce the short and long term physical negative consequences of children exposed to disaster conditions. In future emergency response operations, sufficient mental health resources should be allocated and specific mental health protocols implemented to assist children and their families. The implementation of these procedures has the potential to greatly reduce the short and long term negative consequences such as PTSD symptomatology of children exposed to psychological stress during a disaster.

Author Biographies

Dr. Susan M. Smith is an Associate Professor at The University of Tennessee Department of Health and Exercise Science and Director of the UT Safety Center. Prior to accepting her current position, Dr. Smith completed a successful 20 year career working with rural communities on the complex issues of disaster mitigation, environmental protection, and community safety. She teaches graduate courses in emergency management, accident prevention and environmental health. Dr. Smith's research areas include: emergency evacuation and warning systems for special populations and the evaluation of effective strategies to mitigate disaster impacts.

Dr. Mary Jane Tremethick is an Assistant Professor at Northern Michigan University. Dr. Tremethick has a broad nursing background in the practice of nursing and as an educator. She is currently in the Department of Health, Physical Education and Recreation where she teaches classes in Community Health, International Health, and Human Disease. Dr. Tremethick's research interests include emergency readiness of schools, safety aspects in nursing, and behavior change at the community level.

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