Introduction

In the aftermath of natural disasters like Hurricane Sandy, individuals and communities struggle to rebuild. Research suggests that disasters affect people differentially, with the most vulnerable populations, who perhaps have reduced access to resources, being most at risk (Fisher, 2010). Given this, it is important to ask how particularly vulnerable populations of children are affected by natural disasters. There are various logistical obstacles to conducting research on family dynamics in the immediate aftermath of a disaster, and so the existing literature on the impact of natural disasters on child maltreatment is scant. This research brief reviews the literature on the impact of natural disasters on children and families. After presenting some of the limitations in the research literature, the brief then reviews some of the proposed explanations for why some children may be at heightened risk for maltreatment following a natural disaster. The brief will then review the known risk factors for maltreatment as well as elements that can promote resilience after a disaster. Finally, the brief concludes with a series of suggested recommendations for child welfare agencies to potentially enhance their preparedness for large-scale disasters.
Snapshot of Current Research

What issues affect child welfare in the aftermath of a disaster?

1) Increase in domestic violence

Although little research exists on the links between disasters and child abuse, both anecdotal and scientific reports suggest that marital conflict and rates of domestic violence can increase in areas that have been affected by natural disasters (Chan & Zhang, 2011; Clemens et al., 1999; Davis & Ender, 1999; Enarson, 1999; Fisher, 2010; Schumacher et al., 2010). Enarson (1999) surveyed 77 domestic violence shelters in the United States and Canada to assess their disaster preparedness and perceived impact of natural disasters on service utilization. Out of 25 programs that had been impacted by a natural disaster, nine reported increased service demands following the disaster. Staff reported increases in crisis calls, protection orders and referrals from emergency rooms (Enarson, 1999). A survey of 140 adults in Grand Forks, ND following the Grand Forks flood in 1997 found increased rates of domestic violence, anxiety, depression and hostility (Clemens et al., 1999). Davis and Ender (1999) interviewed ten married couples from North Dakota and Minnesota who had survived the 1997 Red River flood to investigate the impact of the flood on their relationships. Five to eight months after the flood, interviews revealed that while strong marital relationships emerged stronger following the flood, vulnerable relationships appeared to be weakened further following the disaster (Davis & Ender, 1999). Interviews also revealed that couples who sustained moderate home damage appeared to fare worse than those who had either little damage or total flood-related damage.

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While the majority of this research is anecdotal or limited in generalizability, Schumacher et al. (2010) conducted a population-based representative sample in southern Mississippi following Hurricane Katrina, comparing reports of intimate partner violence (IPV) for the six months before and after the hurricane. They found that the percentages of physical and psychological victimization for women and psychological victimization for men all increased significantly following Hurricane Katrina (Schumacher et al., 2010). Supporting the findings of earlier studies, the researchers found that the strongest predictor of post-hurricane IPV was pre-hurricane IPV, and that reports of IPV were associated with greater risks of post-hurricane depression and post-traumatic stress disorder. Schumacher et al. (2010) suggest that disasters can have a profound effect on the functioning of couples, and cite an earlier study (Cohan & Cole, 2002) that found increased birth, marriage and divorce rates in South Carolina counties declared disaster areas following Hurricane Hugo. They maintain that intimate partner violence is a significant but frequently overlooked public health concern in communities affected by disasters.

Outside of the United States, international research also supports the link between natural disasters and increased rates of physical, emotional and sexual violence. Fisher (2010) interviewed community workers in women’s organizations in Sri Lanka following the 2004 tsunami, who reported high rates of domestic and sexual violence following this event. Fisher (2010) cautions that these results must be understood in the context of ordinarily high levels of violence against women in Sri Lanka. Chan and Zhang (2011) surveyed female survivors of a 2008 earthquake in Sichuan, China and found that both physical violence and psychological aggression between partners increased after the earthquake. Prior to the earthquake, the reported prevalences of physical violence was 5.0% and 10.5% for psychological aggression. Following the earthquake, these numbers increased to 6.6% for physical violence and 19.3% for psychological aggression (Chan & Zhan, 2011).

2) Increase in child abuse reports

Compared to the research on domestic violence following disasters, even less research exists on the rates of child abuse and neglect following a natural disaster. Powell and Holleran Steiker (2012) report that research supports a link between trauma exposure and substance use, and noted anecdotal reports of increased domestic violence and substance abuse in the wake of Hurricane Katrina (also see Fisher, 2010). One study by Curtis, Miller & Berry (2000) analyzed child abuse
reports and substantiations by county for the year preceding and following three natural disasters: Hurricane Hugo (South Carolina), the Loma Prieta Earthquake (California), and Hurricane Andrew (Louisiana). In two out of the three regions (California and South Carolina), the number of child abuse reports and confirmations were disproportionately higher following the disaster, suggesting that the risk of child abuse may indeed be elevated in the wake of a natural disaster. The researchers suggested the greater frequency of hurricanes in Louisiana compared to the other two states may have been associated with better preparedness and utilization of stress-relieving coping strategies among the residents of that state.

**Limitations in the literature – Research and Methods**

Much of the existing research connecting natural disasters with family distress suffers from limitations. Several authors have noted that concerns about social desirability and stigma may contribute to under-reporting of violence and abuse (Fisher, 2010; Clemens et al., 1999) and that a reliance on official reports obscures the abuse that often goes unreported (Curtis, Miller & Berry, 2000). Chan and Zhang (2011) noted that they declined to survey female survivors of the Sichuan earthquake about their experiences of sexual violence because the questions would have been “too sensitive” for the population. The study by Clemens et al. (1999) in Grand Forks, ND utilized a measure of disillusionment with low reliability. Curtis, Miller & Berry (2000) note that their comparison of official child abuse reports before and after disasters could have benefited from an external comparison group that had similar demographics but did not experience a natural disaster. Communities affected by natural disasters may also benefit from official interventions, which can provide additional needed services and interventions for affected families who might otherwise be at risk for child maltreatment (Curtis, Miller & Berry, 2000).

The disruptive and sometimes unexpected nature of natural disasters means that both workers and infrastructure in child protective systems are affected, which can affect reporting rates among many other things. Daughtery & Blome (2009) observe that we know very little about the impact of natural disasters on the operations of child welfare agencies. The research that does exist highlights the importance for agencies of clear communication, attending to the needs of staff, strategic planning and rehearsal. More will be said in the final section of this brief.
Why Are Children More Vulnerable to Maltreatment After a Disaster?

Individuals affected by natural disasters can be expected to experience increased stress, trauma, social dislocation, loss and frustration (Fisher, 2010; Curtis, Miller & Berry, 2000). Families and communities can experience disrupted social connections and economic hardship in the wake of a disaster, both of which can contribute to aggression and family violence (Curtis, Miller & Berry, 2000). Large-scale disasters such as Hurricane Katrina disrupt the social fabric of neighborhoods and communities, which are key sources of informal support for individuals and families (Abramson & Garfield, 2006). Abramson & Garfield’s (2006) research in Louisiana after Katrina found that the systems previously available to provide ongoing care to children and families, including schools and primary medical care, had broken down or were severely damaged. Individuals and families who had fewer resources prior to the disaster found themselves more vulnerable in its aftermath (Curtis, Miller & Berry, 2000).

Risk Factors that May Increase Vulnerability:

- **Timing.** In their research following the Grand Forks flood, Clemens et al. (1999) describe the Missouri Model phases of disaster. In the first heroic phase, the community joins together to survive the disaster. Immediately afterward is the honeymoon phase, when the community displays high levels of support and relief following the disaster. After this phase comes the disillusionment phase, when community members may experience anger, resentment and disappointment at the slow pace of rebuilding. In the final reconstruction phase, community infrastructure finally returns to its pre-disaster state. Clemens et al. (1999) theorize that the disillusionment phase may be the longest and most vulnerable period for stress reactions. This concept was supported in interviews with child protective services workers in three states affected by natural disasters (Curtis, Miller & Berry, 2000) who suggested that maltreatment increases with frustration as the slow pace of recovery becomes increasingly apparent.

- **Children’s Post-Traumatic Stress Reactions.** Following a disaster, children and adolescents may demonstrate a range of psychological reactions, including depressive symptoms, aggression, post-traumatic stress and other emotional and behavioral difficulties
Some children's post-disaster stress reactions may be misunderstood by their parents.

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(Vigna, Hernandez & Kelley, 2009; Abramson & Garfield, 2006). Abramson and Garfield (2006) surveyed Louisiana families living in FEMA-subsidized post-Katrina housing and found high rates of asthma, emotional and behavioral problems, missed school days and learning disabilities among children ages 0-17, as well as high rates of mental health problems among parents, particularly mothers. Vigna, Hernandez & Kelley (2009) found that among displaced New Orleans preadolescent youth who had life-threatening experiences during Hurricane Katrina, those whose parents used corporal punishment displayed higher rates of conduct problems, compared to those who did not report life-threatening experiences. This research suggests that physical punishment can be especially deleterious for youth after a disaster, when families have been exposed to a major stressor (Vigna, Hernandez & Kelley, 2009). The authors suggest that for youth exposed to corporal punishment at home, the stress caused by physical punishment is compounded with the stress caused by hurricane exposure to result in increased conduct problems. It is possible that some children's emotional and behavioral reactions to disasters could be misunderstood by some parents and thus contribute additional post-disaster stress for parents who are already coping with multiple stressors (Curtis, Miller & Berry, 2000; Powell & Holleran Steiker, 2012).

Other Risk Factors: Researchers have noted that natural disasters can be especially damaging for vulnerable populations, who may have less education, less access to resources, and more limited coping strategies (Chan & Zhang, 2011). The literature on gender and disaster notes that disasters are social processes that compound existing levels of conflict, violence, inequality and social stratification (Enarson, 1999; Fisher, 2010). One study suggested that families who suffer moderate damage in a disaster may be more vulnerable than those who suffer little damage or complete damage, since they may be less likely to come to the attention of service providers (Ender & Davis, 1999).

Rural communities have unique service needs, compared to urban populations, since their practitioners are frequently generalists who are responsible for larger, less dense areas while working at a distance from colleagues (Alston, 2007). Rural social services may also experience more frequent staff turnover, which results in more fragile service provision that is exacerbated during times of crisis (Alston, 2007). Children who are already involved in foster care when a disaster strikes can experience complex trauma in the wake of a disaster when both families and formal and informal support systems are disrupted. Agencies are advised to provide additional support to children, families, caseworkers and collaborating agencies to ensure minimal disruptions of service (Daughtery & Blome, 2009).
Factors Promoting Resilience

In spite of the many clear risks associated with natural disasters, researchers encourage child welfare agencies to plan for disasters using a strengths-based approach (Daughtery & Blome, 2009), recognizing that communities have inherent assets, resources and relationships that support their capacity to deal with challenges. Froma Walsh (2007) observes that while trauma is most often conceptualized as an individual-level response, it can be helpful to think about trauma, recovery and resilience at the levels of the family and the community. Davis & Ender (1999) advise providers to normalize increased tension and conflict in family relationships during and following periods of crisis. Walsh (2007) highlights nine processes that can facilitate resilience within families and communities, which may be helpful for agencies developing disaster-preparedness plans:

- normalizing and contextualizing distress
- affirming strengths
- finding meaning and transcendence
- maintaining flexibility to adapt and re-stabilize
- maintaining and repairing supportive relationships
- facilitating access to economic/institutional resources
- maintaining clear, consistent communication
- collaborative decision-making
- empathic responses, allowing for individual and cultural differences

Child Welfare Agencies and Disaster Preparation

Researchers who have investigated the link between natural disasters and family violence have found that family service agencies are rarely aware of their need to prepare for disasters. Enarson (1999) surveyed domestic violence shelters in the United States and Canada and found that overall, agencies reported low levels of disaster awareness and preparedness, which she attributed to a lack of past disaster experience, a lack of information, and organizational constraints. Of the 25 agencies she surveyed who had been impacted by a natural disaster, 13 experienced disruptions in their ability to provide services as a result of the disaster.
Daughtery & Blome (2009) note that child welfare agencies rarely participate in the statewide conversation about how to prepare communities for disasters, even though disasters may precipitate unexpected increases in the population of unaccompanied minors, or the need to move large numbers of children in foster care from one state to another. They cite a 2006 Government Accountability Office (GAO) report, which found that following Hurricane Katrina, nearly half of Louisiana's foster children were dispersed to 19 different states. The lack of current emergency contact information made following up with evacuated foster families difficult. Further, administrative difficulties, lack of communication between agencies, displacement of social workers and loss of case records impeded the provision of services following the hurricane. Following the attacks of September 11, 2001 and Hurricane Katrina, the Washington Metropolitan Area Disaster Planning Project was initiated to engage child welfare agencies in preparing for future disasters. Daughtery & Blome (2009) collected government-mandated emergency planning tasks and best practices used by other agencies, reviewed the literature, and conducted consultations with district child welfare agency staff to explore issues around disaster preparedness. The results of their research were collected into an article and also presented at a day-long conference titled “Planning, Partnering and Practicing: A Multi-Jurisdictional Day of Collaboration for Disaster Preparedness among Child Welfare Agencies in the Washington, D.C. Metropolitan Area.” Nearly 30 child welfare administrators, supervisors and workers participated in a tabletop exercise at the conference, simulating how a severe ice storm might affect the metropolitan area and its child welfare services.

The GAO recommends that state child welfare systems develop a state disaster plan for child welfare that should ideally include provisions for the following:

1. Identify children who may be dispersed
2. Identify caseworkers who may be dispersed
3. Continue services to children who may be dispersed
4. Preserve essential case information
5. Coordinate services within the state
6. Coordinate services outside the state
7. Place children from other states
8. Provide in-home family services
9. Identify new child welfare cases

After Hurricane Katrina, nearly half of Louisiana's foster children were relocated to 19 different states.
Researchers also recommend, in the aftermath of a crisis, to co-locate social workers with financial counselors so that affected families can obtain emotional support at the same time as needed financial support (Alston, 2007). Interventions have also been developed to build resilience among children exposed to disaster, including Hurricane Sandy (for more information, see uscenter.savethechildren.org).

In their collection of advice for child welfare agencies, Daughtery & Blome (2009) report that individuals who have had experience navigating past disasters are most valuable in helping organizations prepare for future disasters. In that vein, they share the following lessons learned from a director of a facility for elderly veterans that was evacuated following Hurricane Katrina:

- Have a master plan for disaster response & recovery.
- Establish contacts with providers in advance.
- Recognize that electronic and paper records are vulnerable; computer servers should be in a different location from the primary office.
- Assure that staff know what is expected of them during a disaster, including requirements to stay at the site or travel with clients if there is an evacuation.
- Think about how to use volunteers during and after a disaster.
- Use the media to get information to families and the community.
- Leadership is crucial – act to get results.
- Ask for help, since no one person can do everything.

Child welfare agencies need a master plan for dealing with natural disasters.

Have an idea for a future Research to Practice topic? Please let us know. For More Information: Please contact Dr. Cassandra Simmel at csimmel@ssw.rutgers.edu. Electronic versions of briefs are available upon request.

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REFERENCES


