



## HEALTH PSYCHOLOGY | NEW PERSPECTIVE

# Health after disaster: A perspective of psychological/health reactions to disaster

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## HEALTH PSYCHOLOGY | NEW PERSPECTIVE

# Health after disaster: A perspective of psychological/health reactions to disaster

Ursula Martin<sup>1\*</sup>

**Abstract:** Superstorm Sandy, which affected millions of people in 2012, was a disaster in structural, financial, medical, and emotional terms. Many survivors experienced post-storm health psychology impacts. Depression levels increased by 25%, and physician visits were elevated by a significant amount. Clearly, large-scale disasters have a profound effect on the physical and emotional health of survivors. Understanding these effects can improve future disaster relief programs and policies. Exploration of post-disaster issues can inform government entities and non-government organizations to assist communities and individuals left in the aftermath of natural disasters.

**Subjects:** Applied Social Psychology; Behavioral Psychology; Counseling Psychology; Environmental Psychology; Health Psychology; Social Sciences

**Keywords:** hurricane; disaster; mental health; survivors; depression; medical; stress; storm; trauma; post-disaster

### 1. Introduction

Superstorm Sandy made landfall along the eastern coast of the United States on 29 October 2012, striking with winds of 80 mph. A full moon made high tides much higher than usual and amplified the storm surge. An estimated 100 people were killed. Streets were flooded, trees and power lines were torn down, and beach boardwalks were turned upside down and shredded. More than 80 homes were destroyed in one fire in New York. Some of the more than eight million homes that lost power as a result of Sandy were left without electricity for over a month. The disaster resulted in billions of dollars in damages to homes, buildings, and businesses (Sharp, 2012).



Ursula Martin

### ABOUT THE AUTHOR

Ursula Martin has published peer-reviewed articles in the areas of job satisfaction, international social work practice, and cultural concepts in counseling. She has conducted assessments and psychotherapy with storm survivors and other individuals. The information in the current perspective article is important for disaster preparation and response planning. Disasters affect victims at every level: financial, practical, physical, and emotional. Information can assist organizational policy-makers, support communities, and help to turn victims into survivors.

### PUBLIC INTEREST STATEMENT

Superstorm Sandy, which affected millions of people in 2012, was a disaster in structural, financial, medical, and emotional terms. This perspective article describes some of the health psychology effects of the storm, based on data gathered via Gallup polls, which was used to illustrate impacts of the disaster. It was found that depression levels increased by 25% post-storm, and physician visits also increased by a significant number. Clearly, large-scale disasters have a profound effect on the physical and emotional health of disaster survivors. Understanding these effects can improve future disaster relief programs and policies. Exploration of post-disaster issues can also help government and non-government organizations to assist communities and individuals left in the aftermath of natural disasters.

The question arises: what were the medical and mental health after-effects of the disaster? This perspective article focuses on survivors' levels of depression and health issues post-storm. This is an important topic, as disasters occur throughout the world and cause major damage in financial, emotional, and medical terms. To date, research has been minimal, partially due to limited resources, and the need to focus resources on crisis-related practical needs of storm survivors. There have been studies completed about other disasters, which provides a background.

Paranjothy et al. (2011) emphasized that flooding and its after-effects are a growing public health challenge. A study by Acierno et al. (2007) revealed that significant numbers of individuals are negatively psychologically impacted by hurricanes. In their sample of hurricane survivors, greater than 15% met the criteria for at least one mental health diagnosis since the hurricane. Ruggiero et al. (2012) also studied the effects of hurricanes and found that post-storm 15% of individuals reported anxiety and stress related to the storm. Statistical analyses suggested that factors resulting from the hurricane such as lack of electricity, food, money, or transportation were most significantly correlated with mental health problems.

In a survey of individuals living in the vicinity of a European factory explosion in 2000, a significant proportion of the study group displayed related health problems three weeks after the incident. More than 50% of residents experienced anxiety and depression. Follow-up 18 months later revealed that more than 30% of the affected residents reported having these feelings (Roorda, van Stiphout, & Huijsman-Rubingh, 2004). In another study of the same disaster, 30 months post-disaster, the prevalence of psychological problems in victims was about 30% greater than control subjects. Disaster victims also showed high levels of medically unexplained physical symptoms, including gastrointestinal problems (Yzermans, Donker, & Vasterman, 2004).

Mount St Helen's volcano eruption is a natural setting for the study of stress reactions to catastrophic events. Post-disaster data collected by Adams and Adams (1984) indicated a substantial increase in illness, stress, and aggression. Data suggest that a post disaster stress reaction can occur following a catastrophe. The authors of another study examined the prevalence of somatic symptoms after a natural disaster. Results indicated that exposure to the disaster was related to a greater number of medical symptoms, particularly gastrointestinal ones (Escobar, Canino, Rubio-Stipec, & Bravo, 1992). Freedy and Simpson (2007) found that the use of primary health care services typically increases for one year following major disasters. Victims will often consult physicians for acute health problems, and for monitoring and medication for chronic conditions. Some victims may be at risk for mental health problems such as stress, depression, or alcohol abuse. Ongoing emotional distress occurs in the wake of a disaster; this is known as the "normal response to an abnormal event." (Mental Health Association of Nebraska, 2012).

Publicly available data regarding emotional and physical health post-storm and number of physician visits was evaluated. Daily interviews conducted as part of the Gallup-Healthways Well-Being Index from September through December, 2012. Gallup included data for residents in three groups: those areas severely damaged by the storm, those in surrounding affected areas, and those in other states. A total of 6,414 interviews were conducted with subjects in the first two groups, and 35,184 subjects in the other states. As shown in Table 1, individuals in the first group reported an increase in depression levels of 25% post-storm, and the second group reported an increase of 17% (Witters & Ander, 2013). Those in other states only reported an increase of 3%.

**Table 1. Depression levels before and after Superstorm Sandy**

	Pre-storm (%)	Post-storm (%)	Increase (%)
Most affected areas	11.7	14.6	25
Nearby areas	15.5	18.2	17
Other states	16.6	17.1	3

Note: Adapted from Gallup healthways well-being index poll (2013).

Many health care visits were scheduled after the storm. An analysis by the United States Center for Disease Control found that, of the people relocated to shelters in one area after the storm, more than 5,100 reported a storm-related health care visit: 52% for an acute illness; 32% for follow-up care, such as blood tests or medication refills; 13% for a chronic illness; and 3% for injuries (Rettner, 2013).

While the mold and the stress of Superstorm Sandy created new health problems for some people, it also made other conditions worse in people already dealing with issues including asthma and allergies. Langfield (2013) discovered that a full year after the storm, doctors continue to see many people with storm-related medical symptoms. Common health complaints post-storm were headaches, dizziness, and upper respiratory infections likely triggered by flooded buildings, unheated homes or mold (Mental Health Association of Nebraska, 2012).

Graham (2012) described the emotional aftermath of the storm that left millions without power, chilled, and frightened. Emotions they experience include despair, hopelessness anger, and anxiety. Instead of acknowledging anxiety or depression, some people may complain of having a headache, a stomach ache, or some other physical ailment. Many medical offices in storm-ravaged areas remained closed for weeks, leaving survivors without access to the prescription medications for chronic illnesses such as asthma and allergies. These problems coupled with the mold that began to grow post-disaster left many people in poor health (Goodman, 2012). For the millions of people who experienced flooding and power outages, several hazards occurred. Many individuals had their health impacted due to the inability to obtain prescriptions or due to medication being lost or destroyed in the storm. Power outages ruined insulin and other medications that require refrigeration (Weiss, 2012).

## 2. Discussion

Disasters have a profound impact on mental health. “Stress and strong emotions are common after a storm like Hurricane Sandy. Many people experience fear, anxiety, anger, and sadness; other reactions may include stomach aches, changes in eating or sleeping habits, increased alcohol or drug use”. (Substance Abuse and Mental Health Services Association, 2012, September 10, <http://www.samhsa.gov>).

Disasters have disastrous effects on the physical and mental health of survivors. In concurrence with research studies on earlier disasters, it appears that many survivors of Superstorm Sandy experienced psychological and health problems. These results are significant due to the enormous number of areas affected, and the broad impact that medical and emotional issues have on individuals. Many people needed to schedule physician visits for storm-related conditions. This introduced another financial factor to the storm, along with the staggering costs of the storm, on an individual and community basis. It is also possible that having medical or emotional issues post-storm can potentially reduce survivor’s abilities to cope with numerous related practical issues (filing insurance claims and appeals, applications for governmental assistance, replacing possessions, home repairs, automobile replacement, and locating businesses which are open and functioning post-storm). On a concrete level, it can also be challenging for individuals to access services to treat medical and mental health issues post-storm, when many agencies are temporarily closed and waiting lists are long.

In practical terms, there is a clear need for programs to help survivors cope with medical and emotional issues post-disaster. To minimize negative medical and mental health consequences when facing future events, communities can plan resources for psychological and medical assistance before and afterwards. As Roorda et al. (2004) note, disasters affect large groups of people in terms of physical and psychological health, and aftercare services for disaster victims must be designed to address their physical and psychological needs.

Physical and mental health effects of disasters often co-occur. Physical problems may increase the probability of mental health problems. For example, a disaster may exacerbate a chronic health condition, with worsening physical health contributing to the worsening of mental health. The

reverse direction of causality is possible, with mental health problems resulting in poorer health maintenance efforts and inflammation of chronic symptoms (Freedy & Simpson, 2007).

The impact of disaster is an important subject that merits further exploration. The effect on health psychology is one which impacts large populations for lengthy timeframes. Future research can focus on program evaluation: which services are most utilized and most effective in helping survivors with the medical and emotional after-effects which clearly result from disasters? Several variables are worth testing quantitatively. These include the specific triggers of psychological and physical symptoms, and specific interventions (outreach, referral, short- and long-term treatment) which effectively treat them. Additionally, post-disaster physical and mental health reactions can be tested along with other individual and community variables for the purpose of determining which factors might provide support and relief from these reactions in the future.

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The author declares no competing interests.

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