Chapter 3

The Psychology of the Elderly in Disaster

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Abstract

This chapter explores the psychological impact of disasters on the elderly population, highlighting their vulnerability due to declining health and financial constraints. It highlights the role of social environment elements, such as informal network links and social capital, in mitigating or enhancing physiological vulnerabilities. The chapter emphasizes the need for comprehensive examination of seniors' psychological characteristics to inform policymakers, medical experts, and emergency responders. It highlights specific vulnerabilities of the elderly, such as cognitive impairments, chronic illnesses, and limited mobility, and advocates for tailored disaster preparedness and response strategies. The chapter also discusses the impact of age, cultural background, and past experiences on perceptions of risk among the elderly. It advocates for tailored interventions, community engagement initiatives, and mental health support to ensure effective disaster response and rehabilitation.

Introduction

The elderly may be more vulnerable to harm, death, and physical and psychological loss during disasters due to declining health and financial restrictions (1,2). Social environment factors, such as informal network links and social capital, can either mitigate or exacerbate physiological vulnerabilities in older adults. However, the impact of social capital on disaster risk and recovery is not well understood. Elderly people are more vulnerable due to health concerns, limited mobility, and fixed economic means. Social capital can help mitigate these vulnerabilities (3).

The objective of this chapter is to offer a thorough examination of the psychological characteristics of the senior population during disasters. Policymakers, medical experts, and emergency responders may create

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more effective plans to protect the elderly during and after catastrophes by knowing their vulnerabilities, reactions, and coping methods.

Definition of Disaster and the Importance of Disaster for Health

Disaster is a process of radical and rapid change that can be devastating and shocking in terms of its consequences, occurring suddenly in an unpredictable manner (4). There are three categories for disasters: man-made, natural, and hybrid. All catastrophic events are thought to be covered by the three categories of disasters. There isn't a single, widely agreed definition of a disaster. A number of standards are put forth to characterize disasters. Researchers and agencies can more effectively classify, record, and analyze disasters if they have a thorough understanding of the definitions, criteria, and types of disasters. While disasters differ in their features and effects, they are all the same in that they are severe (5).

Natural or human-caused, disasters are unusual occurrences that have an impact on civilizations on all fronts—economic, social, and physical—as well as interrupting people's lives in situations when there are not enough possibilities or resources (6). Disasters are hazardous events that can cause loss of life, injury or other health-related impacts to people; property damage or disruption to economic livelihoods (7). The degree to which a person is affected by a disaster depends on what economic class they are in, whether they are male or female, what age group they belong to, their ethnicity, their migration status (8).

1.1. Significance of Understanding Elderly Psychology in Disasters

Considering that the world's population is aging over the years, the policies to be followed for the elderly population in the future are of particular importance. The Human Development Reports of the United Nations Organization draw attention to the fact that the elderly are the most vulnerable population group affected by disasters, emergencies and risks arising from climate change, as well as disabled individuals and children. Elderly people with physical disabilities, chronic diseases, hearing and vision problems may need assistance to meet their special needs in their normal lives (9).

More than any other group, the elderly, those with chronic illnesses, and people with disabilities are impacted by disasters. Research on disasters has indicated that there is an increased risk of sickness and mortality associated with catastrophes for older people (6). The chronic illnesses that affect almost 80% of elderly persons increase their susceptibility to disasters. Frail

older persons have unique demands as a result of these illnesses as well as physiological, sensory, and cognitive changes brought on by age. Meeting these demands requires careful planning and collaboration between experts in aging services, emergency preparedness, and public health (10).

Following a disaster, medical issues might manifest as acute, acute-on-chronic, or chronic; they can arise soon after the event or long after. These issues might all be general or exclusive to certain kinds of disasters. Preparations before to and efficient medical response following large-scale catastrophes can help reduce the mortality toll. Both the regional/hospital and the national/governmental levels ought to take these actions into consideration (11).

The elderly are more susceptible to catastrophic occurrences because of cognitive impairments, long-term medical conditions, and limited mobility. These conditions may make it difficult for them to cope, which increases the risk of abuse, neglect, and exploitation. A nationwide surveillance system for elderly and other vulnerable persons, designated shelter places, and the involvement of gerontologists in emergency preparedness and care delivery are among the recommendations for future disasters. It is essential to plan ahead for the event by identifying local medical facilities, social services, volunteers, and infrastructure. Elder abuse and fraud must be prevented, and a public health triage system is necessary. Prior to an event, ethical concerns need to be addressed. Palliative care, resource distribution, transporting immobile patients, and triage decision-making should all be taken into account (12).

A study analyzing the perceptions of social capital among elderly individuals in Florida found that age has a negative effect on their perceptions of disaster-related resources. The elderly reported fewer social ties, including those that could provide financial assistance, and reported fewer social ties overall. This suggests that social capital may not fully counteract the social vulnerabilities of elderly individuals to disaster impacts (3). Chronically ill elderly persons are more susceptible than others to hot, cold weather and epidemics during times of disaster. Elderly people who are not adequately prepared for a crisis may encounter issues including housing, starvation, evacuation, and financial hardships (6).

Studies addressing age as a variable in disasters or investigating the disaster experiences of the elderly are very few in both theoretical and practical terms. Especially in the field of social sciences, studies focusing on age in disasters have not accumulated enough, and it can be said that disaster studies in general are also lacking. Globally, although there has been an increase in

disaster studies in recent years only with the Covid-19 pandemic, the extent to which the elderly are affected by other types of disasters has not been sufficiently studied. In many of the pandemic studies in terms of the elderly, only the negative effects of covid-19 have been investigated. Similarly, in recent years, disaster studies related to aging have generally focused on negative effects and which factors make the elderly more vulnerable in disasters. As Campbell (13,14) points out, these studies, many of which have quantitative methodologies, create a significant gap in the literature on how the elderly experience, perceive or make sense of disasters and how they evaluate their consequences. In particular, studies focusing on how the elderly recover and resilience after disasters have been ignored (13,14).

Cherniack's study reviewed published medical literature in order to make conclusions about how natural disasters affect the elderly. According to the review, which included 45 journal articles, older people are more likely to experience negative physical outcomes in many studies. This is not surprising considering their poorer health prior to disasters and reduced capacity to seek help afterwards. The heterogeneity in populations, survey methods, and disasters is the reason for the lack of agreement between studies. Nonetheless, some research indicates that people, frequently the elderly, may be more resilient to some of the psychological effects of disasters if they are exposed to them more frequently. A number of recommendations have been put forth to cater to the possible requirements of senior citizens. These include leveraging the experience and resources of already-existing organizations and geriatric specialists in the areas of disaster preparedness, education, alerts, and aid arrangements (15).

An investigation into how disasters affect senior women's health and well-being conducted in Pennsylvania's Wyoming Valley five years following a significant flood, it became clear that the health and well-being of older women following a disaster had received little attention. A retrospective cohort survey was employed in the study to examine the mental health of 45 controls and 122 female victims who lived in the same communities. A modified Self-Report Symptom Inventory, Zung's Self-rating Depression Scale, and Langner's 22-Item Scale were the tools used to assess mental health. Significant differences were found in the participants' self-perceptions of their mental state, level of distress during their recovery, life quality, and frequency of thinking about flood-related issues (16).

In a study involving more than 200 senior citizens in South-East Kentucky, it was discovered that 18 months after a flood, there was a higher prevalence of somatic, psychological, and anxious symptoms. Ages 55–64, men, and

those with lower occupational status all had a significantly higher chance of experiencing psychological symptoms. There was no moderating effect of sociodemographic status on the physical health effects of flood exposure. The need for crisis intervention services for older adult victims of disasters was brought to light by this study (17).

Vulnerabilities of the Elderly Population

When a natural disaster strikes, elderly people are among the most vulnerable demographics. Healthcare providers, especially nurses, can better manage disaster risk for this growing population even though older age is the cause of their unequal vulnerability. This is because nurses are aware of the various aspects of vulnerability (18).

In their study, Dolatabadi et al. examined Iranian government records pertaining to the protection of the weak during natural disasters. The examination showed that the majority of the documents described the impoverished, villagers, women, children, and elderly as vulnerable groups. They did not, however, offer details on official precautions that would have kept them safe throughout the various stages of disaster management. The study concludes that because disasters occur frequently in Iran, there is a need for a precise definition of "vulnerable people" and the development of context-based policies that work (19).

One of the most vulnerable demographics in emergency situations is the elderly. But it's not just getting older that renders them differently vulnerable. The susceptibility of a particular group within society highlights the significance of focusing on the elements that jeopardize the lives of society's most susceptible members prior to, during, and following natural disasters. Older people may be particularly susceptible to disasters because of physical limits, long-term medical illnesses, or problems with their mobility. The aged population has varying perceptions of risk, which are impacted by past experiences, cultural background, and cognitive capacities. Physical, sensory, cognitive, memory, decision-making, social, and limited social networks are some of the physical, cognitive, and social vulnerabilities that individuals may experience (20-24). It is possible to develop theories and care models by thoroughly examining the experiences of individuals in these particular age groups and recognizing their vulnerability. These can be used to manage their perceived needs and give them the proper care. According to Zhu et al. (25), identifying the vulnerabilities among the elderly from their own distinct perspectives is necessary to manage disasters and achieve greater resiliency. Likewise, Barbosa et al. (26) contend that nurses must be able to

assess the vulnerability of the elderly at various levels in order to manage the vulnerability of this population and lessen it.

According to Liu et al. (27), exposure to smoke from wildfires poses health risks to older populations in the western United States. It was discovered that those who were black, lived in cities, and were from California were more likely to be within the smoke wave. Black people (21.7%) and women (10.4%) were more likely to require respiratory admissions on days when such episodes occurred. A focus on the greater vulnerability of women, Black people, and those living in lower-education counties, as well as environmental justice concerns, were highlighted by the study. With the effects of climate change on wildfires becoming more pronounced, these findings have important ramifications for public health initiatives and wildfire management (27).

Fifteen months after the 2008 Sichuan earthquake, Jia et al (28). conducted a population-based survey to evaluate the psychological effects on survivors. 327 participants, including 152 older adults and 175 younger adults, who lived in highly impacted areas participated in the study. The findings indicated that, in comparison to younger adults, older survivors had a higher risk of developing posttraumatic stress disorder (PTSD) and general psychiatric morbidity. Being elderly, being in grave danger, losing family members, and feeling guilty were risk factors. In order to effectively support post-disaster mental health reconstruction, the study underscored the significance of mental health services, particularly for the elderly (28).

Jeff Evans investigated how older people are particularly susceptible to the detrimental effects of catastrophic occurrences. In order to comprehend how these factors are interconnected, the focus was on psychological trauma, long-standing medical conditions, and poverty. The paper presented a map illustrating the synergies between these vulnerabilities, placing older people at the center, even though it did not provide an exhaustive systematic review due to the paucity of research on older populations and disasters. The authors provided recommendations for clinical practice and strategic planning aimed at reducing the severe effects of disasters on the elderly population by means of thoughtful preparation (29).

Psychological Responses to Disasters

Disasters significantly impact the psychological health of elderly individuals, influenced by social, emotional, and physical factors. Age-related vulnerabilities, limited mobility, and loss of belongings can increase the impact of a disaster on mental health. Social support, particularly on

social media, is crucial for understanding how older people mentally react to calamities. However, disruptions in these networks can worsen feelings of vulnerability and isolation, exacerbating feelings of loneliness and isolation. Efficient disaster response and rehabilitation procedures require tailored interventions that consider the special needs of the elderly population. Examples include community engagement initiatives, focused mental health support, and resilience-promoting techniques. Disasters can exacerbate pre-existing conditions and cause new health issues, including anxiety, depression, and post-traumatic stress disorder (PTSD). The immediate impact includes shock, denial, fear, and anxiety, while long-term effects include PTSD, grief, loss, depression, and isolation.

Perry and Lindell's article analyzed literature on elderly individuals' response to disaster warnings, a topic under-researched in post-disaster recovery. They found that individuals over 65 are equally likely to comply with warnings, despite previous conflicting findings. This study analyzed data from nine disaster events and addressed discrepancies by examining research temporal aspects and methodological nuances (30).

Particular psychological problems affect older persons, such as relationship breakdown, altered bodily functions, changes in job roles, and diminished independence. Losses from tragedies may exacerbate these experiences, making them more susceptible to depression. Vulnerability is further increased by the stress of moving. Multiple loss survivors may be afraid of being placed in a nursing home, which would further diminish their independence. Caregivers with empathy and grief therapy might be helpful. For certain elderly persons, cultural disparities related to language, social level, and ethnic heritage also result in a final kind of vulnerability. Hurricane Katrina's aftermath brought to light the vulnerability of older citizens who are impoverished, female, African American, weak, unwell, and crippled (31-33). The varying religious and cultural backgrounds of older persons impact their ability to access government offices and services. Additionally, they are unable to access assistance outside of their ethnic community due to language issues. Multicultural training, hiring bilingual and bicultural employees, and the provision of written information in minority languages are all recommendations for agencies (34).

Numerous individuals of all ages may experience feelings of vulnerability, helplessness, and dread as a result of natural catastrophes, according to scientific research (35,36). Uncertainty surrounds the underlying factors that contributed to the higher likelihood of psychological issues among the elderly following catastrophes. However, there might be a few causes. Pekovic

et al. contended that an unforeseen calamity may have an overpowering effect on an elderly person since they frequently already feel fragile from long-term health issues, diminished cognitive function, and less sensory awareness (37). Although there is currently no evidence that changes in these systems with aging affect the development or presentation of post-disaster posttraumatic stress disorder in older individuals, Taylor and Vidovic et al. discussed the effect of the adrenergic system and the hypothalamic-pituitary-adrenal axis on the neurobiology of posttraumatic stress disorder (38,39). More fundamental studies are required to address the processes behind the likelihood of age-dependent post-disaster psychological issue sensitivity and to offer strong evidence for remedies (28).

A German research comprising 1456 senior citizens, 60–85 years of age, discovered a connection between physical morbidity in old age and traumatic events and posttraumatic stress disorder. Individuals who have experienced trauma were more likely to develop hypertension, cancer, cardiovascular disorders, and other illnesses. In addition to these medical conditions, posttraumatic stress disorder has been linked to asthma, cancer, and back discomfort. As independent risk factors for posttraumatic stress disorder symptoms and general psychiatric morbidity, variables like being elderly, being in extreme danger, losing family members, feeling guilty about death or injury, and not seeking mental health services have been found (40).

Successful aging (SA) contains both objective and subjective components, according to a study on the topic in the context of a tragedy. 5,688 New Jerseyans between the ages of 50 and 74 who took part in baseline interviews between 2006 and 2008 and four reassessments over a period of nine years were included in the study. In order to assess how objective and subjective SA changed over time and how Hurricane Sandy affected SA, multilevel mixed effects models were employed. Average levels of both subjective and objective self-esteem decreased over the course of the nine years, even after adjusting for age, gender, income, and education. Compared to those who were not exposed, those who were exposed to Hurricane Sandy saw greater drops in both subjective self-esteem and measures of objective self-esteem, such as pain and functional capacity (41).

Cherry et al.'s research focused on the connections between social support and religiosity while examining the long-term psychological consequences of disasters on older persons. It involves comparing 219 people of south Louisiana's disaster-affected neighborhoods with previous residents and a control group. It was found that a strong predictor of post-traumatic stress disorder (PTSD) was regular participation in non-organizational

religious activities. Depression symptoms were linked to coastal fishing and low income. Mental health results were shielded by social support. To sum up, those who suffer from significant trauma caused by disasters are susceptible to negative psychological impacts, particularly those who have little social support, low income, and high non-organizational religiosity. In addition, according to this study, older people were more likely than younger people to have experienced other types of trauma over their lives (42). It is important to exercise interpretive caution because age alone did not significantly predict psychological effects. However, older persons who survive technological and environmental disasters may be resilient in spite of (or perhaps because of) past life hardship (43,44). In a 1994 study, Knight et al. looked at the emotional reactions of 166 people, ranging in age from 30 to 102. The purpose of the study was to investigate how aging affects emotional suffering after natural disasters. The study discovered that older persons reacted less strongly to stressful situations, with the youngest age group exhibiting the least amount of despair. Age, however, had no mitigating effect on the association between rumination and harm exposure. Participants with past earthquake experience scored lower on post-shock depression measures, supporting the inoculation theory, which postulates that prior experience with disasters is protective against depressive mood (43). More than 200 senior citizens participated in a study carried out in southeast Kentucky in 1984, which involved interviews both before and after a significant flood. The goal of the study was to ascertain whether variables such as age, sex, marital status, occupation, degree of education, and pre-flood symptom levels made older persons more or less susceptible to increasing psychological and physical symptoms. According to the findings, 18 months after the flood, there was a rise in somatic, anxiety, and depressive symptoms due to flood exposure. Psychological symptoms were more common in men, those with lower occupational status, and people between the ages of 55 and 64. The study's implications for crisis intervention services for catastrophe victims who are older adults were also covered (44). A study in southeastern Kentucky found that prior experience can moderate the impact of disaster on anxiety symptoms in older adults. The study involved 234 older adults who were interviewed before and after serious flooding. It found modest flood effects on trait anxiety and weather-specific distress in those without prior experience, but no flood effects in those who had been in floods before (45).

In a research examining at how floods effect older persons' mental and physical health, it was shown that those who experienced flooding (21.2%) had far greater rates of post-traumatic stress disorder symptoms than those

who did not experience flooding (78.8%). Poorer mental and physical health was also shown to be associated with higher flood exposure and a lack of social support. Increased stoicism was linked to worse self-reported mental health and increased post-flood despair. Following floods, it was shown that emotionally oriented coping strategies like acceptance, positive reframing, and humor prevented mental health from declining as much as maladaptive coping strategies like venting and diversion (46).

Additionally, it has been proposed that older persons may underreport anxiety symptoms, such as PTSD (47,48). Given that even sub-threshold symptom levels can result in severe functional impairment in older persons, this is especially concerning (49). Although it is unclear if study participants with higher Impact of event scale-revised scores had addressed their concerns with a medical practitioner or sought official or informal assistance, research indicates that older persons may be less likely to seek mental health treatment (50).

Conclusion

The text emphasizes the importance of understanding the psychology of the elderly in disaster situations for developing effective interventions, support systems, and policies. It highlights the role of coping mechanisms, resilience, communication, emergency preparedness, and policy support systems in helping the elderly navigate stress. Resilience is the ability to recover from adversity, while communication strategies address sensory impairments, language barriers, and cognitive abilities. Emergency preparedness involves community education and personalized plans. Policies and support systems should cater to the unique needs of the elderly, including tailored evacuation plans, healthcare provisions, and social services. This holistic approach considers physical, mental, social, and cultural factors for comprehensive care during and after disasters.

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