

The Vulnerability of the Iranian Elderly in Disasters: Qualitative Content Analysis

Abstract

Background: Elderly people are among the most vulnerable groups in natural disaster events. Although old age is responsible for them becoming unequally vulnerable, understanding the different aspects of vulnerability can help health care providers, especially nurses, to manage disaster risk for this increasing number of people. This study intended to explore disaster-related vulnerability and its contributing factors based on older adults' perceptions and experiences. **Materials and Methods:** This qualitative content analysis study was performed in Iran in 2016. The study was conducted by semi-structured interviews of 24 participants, and purposeful sampling with maximum variation continued until data saturation. **Results:** By analyzing primary codes two main themes were extracted through content analysis, namely personal factors and social factors, from experiences of two experts in the field of health in emergencies and disaster management among 22 Iranian elderly participants. **Conclusions:** This study indicated that age is not the only criteria that makes an elderly person vulnerable, but their lifetime achievements and experiences can determine their level of vulnerability. The results of this study will help health service providers as well as disaster nurses to identify and moderate the factors affecting the vulnerability of the elderly, and by using their rich experience, enhance senior citizens' resilience to disasters.

Keywords: Aged, disasters, Iran, vulnerable populations

Introduction

Natural disasters affect all the residents of disaster-prone areas, but the elderly are considered the most vulnerable group.^[1] The elderly, 11.5% of the world's population^[2] and 7.27% of the population in Iran,^[3] form a large portion of disaster victims^[3] with high morbidity and mortality rates.^[4]

Elderly are among the most vulnerable populations in emergency situations.^[5,6] However, it is not just old age that makes them unequally vulnerable.^[7,8] The vulnerability of a certain segment of the society shows the importance of paying attention to the factors that put the lives of society's most vulnerable at risk before, during, and after natural disasters.^[4]

Understanding the vulnerability of these specific age groups through in-depth exploration of the people's experiences in disasters helps us to propose theories and models of care. These can be used to manage their self-perceived needs and provide appropriate care for them. Zhu *et al.* (2017) showed that achieving

greater resiliency and managing disasters require vulnerabilities among the elderly to be identified from their own unique perspectives.^[9] Similarly, to reduce the vulnerability of the elderly, Barbosa *et al.* (2017) believes that, to manage the vulnerability of this group of people, nurses should be able to analyze their vulnerability at different levels.^[10]

In addition, Brown *et al.* highlighted the instability in vulnerability-related studies. They argued that most studies have focused on theoretical issues and political criticisms, whereas just a few studies have paid attention to the vulnerability based on different perspectives and experiences. Consequently, a huge gap exists between the theoretical view and practical definition of vulnerability.^[11]

Considering the impact of disasters on the elderly, Cornell *et al.* (2012) observed that most studies are limited to narrative reports. Many of these studies discuss actions to resolve their challenges rather than understanding the elderly's perceptions.

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Access this article online

Website: www.ijnmrjournal.net

DOI: 10.4103/ijnmr.IJNMR_127_17

Quick Response Code:



How to cite this article: Daddoust L, Khankeh H, Ebadi A, Sahaf R, Nakhaei M, Asgary A. The vulnerability of the Iranian elderly in disasters: Qualitative content analysis. Iranian J Nursing Midwifery Res 2018;23:402-8.

Received: August, 2017. **Accepted:** February, 2018.

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They also indicated that older people’s experiences, views, and beliefs have been rarely considered.^[7]

In Iran, there are a few studies, mainly quantitative, related to the impact of natural disasters on elderly people. Due to the fast growing elderly population^[3] and increasing number of natural disasters,^[1] understanding the factors that contribute to the vulnerability of this special needs group is crucially important. On the other hand, by increasing the awareness about the vulnerability of the elderly, protecting and saving their lives could be a positive development for health care service providers and nurses. Furthermore, because this is a complex, subjective, contextual, and cultural bond issue that has not been well studied, this study aims to qualitatively assess disaster-related vulnerability and its contributing factors based on the older adults’ perceptions and experiences to provide better care for them.

Materials and Methods

This study has been conducted using qualitative content analysis to provide a comprehensive description of the Iranian elderly perceptions and experiences regarding their vulnerability in natural disasters.^[12] Without any hypothesis, by focusing on the interviewees’ viewpoints, data were collected; and then by using an inductive approach, codes and categories were extracted. Finally, based on the properties and dimensions of the explored concepts, codes were classified into subcategories and categories, and finally themes were developed.^[13,14]

The study participants included two experts from the field of health in emergencies and disaster management and 22 Iranian elderly (≥60 years old). The study was conducted from October 2015 to March 2016 in the earthquake and flood stricken areas of East Azerbaijan province (Kavich, Ahar, Varzaghan, and Harris villages) where massive twin quakes had occurred in 2012 as well as in Alborz province (Sijan village), which had experienced a flash flood in 2015. The participants were selected through purposeful sampling with maximum diversity. The key inclusion criteria were having experienced natural disasters within the past 5 years, willingness to participate, and ability to converse. To ensure diversity, participants were selected from both male and female genders, various elderly age groups, with different educational levels, and living status [Table 1].

Data were collected through individual, in-depth, semi-structured interviews.^[13] Using an interview guide, general questions followed by specific ones were posed to the participants. Some examples of the questions are “Please talk about your experiences during an earthquake,” “What kind of problems were you faced with?” and “What did you do in that period?” Participants were asked to elaborate, if needed. On average, each interview lasted 30–60 min

(mean, 45 min). The time and place of interviews were set up as per the participants’ convenience; most interviews were conducted at their workplace, in the park, or in their homes.

The interviews were recorded, transcribed, and then as a unit of analysis; recorded transcriptions were analyzed in five stages according to the Graneheim and Lundman approach.^[15] First, the text was read several times to understand the core content. Then, it was divided into meaning units, which were condensed and shortened after considering the most important sense. Subsequently, the condensed meaning units were labeled with codes at low level of abstraction, and finally, the extracted codes were classified based on their differences or similarities. The data reduction continued until all the categories and themes were developed [Tables 2-5]. To improve the credibility of the study,^[15] participants were selected from a variety of backgrounds in terms of geographical

Table 1: Demographic Characteristics of the Participant

Age: Mean (SD*)	70.40 (9.20)
Gender (n)	
Female	36.36
Male	63.64
Education level (n)	
Illiterate	54.55
Reading and writing ability	22.70
Elementary	9.10
Secondary	9.10
High school	4.55
Living status (n)	
Alone	18.20
With spouse	36.30
With children	45.50

*SD: Standard deviation

Table 2: Developing codes from meaning units

Meaning unit	Codes
In this neighborhood people love me and respect me	Having a social status
At the weekends my children came here to visit me and their mother	Being as a family gathering center

Table 3: Developing subcategory from codes

Codes	Subcategory
Having a social status; widespread social relations; being a family gathering center; ability to create trust, calm, and peace among others	Social capacities

Table 4: Developing main category from subcategories

Subcategory	Main category
Social capacities	Capacities
Individual capacities	

Table 5: Subcategories, categories, and themes from content analysis of older vulnerability

Subcategory	Main category	Theme
Personal capacities	Individual capacities	Personal factors
Social capacities		
Loneliness	Individual limitations	
Dependence		
Lack of Support	Living situation	
Living with family		
Living alone	Honour and dignity	Social factors
Personal dignity		
Social dignity		
Religious beliefs		
Religious behaviours		
	Religious values	

areas, both genders, and diverse educational levels. In addition, researchers provided data from field notes and memos, and in the analysis process, the authors repeatedly discussed the process of analysis and the relationship between meaning units, codes, categories, and themes. Member checking was performed during data collection, and then the researchers' interpretations were verified by the participants. Interviews and the analysis process were audited by the first author and then reviewed by the second and third author, making changes wherever needed. Prolonged engagement of researchers in the process of study strengthens the trustworthiness of the results. Furthermore, to facilitate transferability, the study process was reported in detail and representative quotations from the transcript were provided.

Ethical considerations

This project was approved by the Ethics Committee of the University of Social Welfare and Rehabilitation Sciences (code: IR.USWR.REC.1394.295). Written and oral informed consents were obtained from all participants. Moreover, the researchers took steps to ensure confidentiality and no harm to the participants.

Results

The mean age of the participants was 70.59 years, and 36.36% of them were women [Table 1]. All participants had experienced natural disasters within the past 5 years. The level of their education ranged from being illiterate to high school. After data analysis, a total of five main categories appeared resulting in two themes [Table 5].

Theme one: Personal factors

Personal factors was one of the main theme identified from data analysis. This theme included four main categories: (1) individual capacity, (2) individual limitations, (3) demographic characteristic, and (4) family situation. According to the participants' experiences, the personal factors of the elderly play a very important role in their response and behavior before, during, and after disaster.

Individual capacity

This category was one of the main categories of elderly vulnerability in disasters. It includes two subcategories – personal capacities and social capacities. According to the study's participants, personal capacities such as being experienced, being knowledgeable, having a good health state, and being in good financial standing, enable them to manage their own difficult, critical, and unwanted situations resulting from the disasters. *“Young people could do nothing, the earthquake daunted them, and they were scared and confused, but the elderly were still better because they were more experienced! We are seasoned and have seen many ups and downs in life!”* [The 14th participant]

Moreover, from the perspective of elderly individuals, social capacities fundamentally change their ability to function with the disaster. Based on their experiences, having a social status, being the central point for the family unit, along with having the ability to create trust, calm, and peace for others, not only supports them but facilitates the resolution of collective unwanted problems as well. *“I am old, but thank God I have respect and reputation in my neighborhood. All my children are here on Fridays; they come to visit my wife and me. My neighbors, like my children, treat us respectfully and give us help in times of need.”* [The 4th participant].

Individual limitations

The seniors' personal constraints limit their ability to cope with and manage critical conditions in emergency situations.

“What our senior residents experience during disasters is apparently different or even unequal from the others, it could be in terms of physical problems and disabilities for obtaining services or even unwillingness to ask for help. In any case, these (issues) can put their lives at risk differently and unequally.” [An expert participant]

Another participant stated: *“I have a lot of problems, I am very sad. My husband died in the earthquake. Although my children visit me very often, I always miss him. It is very difficult for me, I have no income and cannot do anything; I have become dependent on my children!”* [The 8th participant]

Demographic characteristics

One of the main explored categories was demographic characteristic such as age, gender, low literacy, illiteracy, rural/urban resident, and social class (high, average, and low income). Elderly people mentioned these as underlying factors for their weakness and inability to manage complicated situations such as disasters. *“I am an old and feeble woman, I am illiterate as well, I become worried and afraid when I need to sign something (and) an illiterate person is like a blind (person)!”* [The 9th participant]

Family situation

The elderly believe that living with a family member is really reassuring for them. In their view, family situations, lifestyles, living with family, or living alone, changes their level of resiliency. Thus, affecting their response to natural disasters. *“After the death of my husband in an earthquake, I had to live with my son, so service providers didn't consider me as a (separate) family, they did not give me anything—not even a tent! So I was obliged to live with my family.”* [The 9th participant]

Theme two: Social factors

The second theme that resulted from the data analysis was social factors, which included three main categories – cultural attitudes, religious beliefs, and religious behaviors. Based on the experiences and perceptions of the study participants, social factors are rooted in their place of residence, kind of life, and family nurture. Attitudes and beliefs affect both the manner in which they think and behave.

Cultural attitudes

This category is an important factor in the vulnerability of the elderly in Iran. The aged believed that honor and dignity in old age is a two-faced concept, which sometimes leads to life satisfaction and causes violation to their rights. For cultural reasons, in difficult times, the family members and children are expected to support and care for the elderly family member, handling the burden of his/her problems, thus allowing the elderly to enjoy dignity, which is expected from their family members. However, there is another side to this as well. *“...In this situation, it's my son's duty to take care of me, I'm happy. But if the government had made my own home for me, I would have been comfortable”* [The 9th participant].

Another participant stated: *“We felt very embarrassed. We asked help from no one, not even from the committee Imam (A charity organization supporting low income elderlies in Iran) because of shame! They gave us a tent but we had nothing. I had lain down, when a few people came and said to me, ‘oh dear dad! You have nothing!’ I was embarrassed; I did not say anything to them. They left and returned with tea, bread, and a teapot for me. It was their kindness but I was willing to die of shame!”* [The 7th participant]

Religious beliefs

From the Iranian elderly's viewpoint, religious beliefs are an important source of support, and it is apparently tangible when they are faced and confronted with challenges in their later life. They believed that faith affected their decisions in times of trouble and reduced the resulting pain and panic.

“Earthquakes and floods are acts of God, we can't fight against God, and we must accept it! With this event, the

Lord wanted to show His power to those who say there is no God and do as they want.” [The 19th participant]

Some old people even experienced strengthening in their faith after a disaster. They believed that disasters brought greater commitment to their faith and helped them to be in closer communion with God. *“Hardships make you to remember that God is on your side. I praised God to help me as a mother, he did! And, my son came back to me. He did not die in the flood!”* [The 17th participant]

Religious behaviors

The study findings showed that, by engaging in religious actions, praying, reciting Dua, reading, and listening to the holy script (Quran), the elderly try to help themselves. The participants emphasized that by practicing religious behaviors they find mental strength and support to manage and deal with life's difficulties. *“Day and night, I prayed and asked God for patience and kept my faith, so that I could tolerate all the pain and misery.”* [The 3rd participant]

Although they had lost their loved ones, possessions, or what they called their whole life, they managed to cope with the situation by seeking help from God and trusting in Him. *“I lost my life, but I have no complaints of God. Whatever happened was my destiny. I do not tell my stories to anyone, except God. I tell him as it gives me great peace.”* [The 9th participant]

Discussion

This study explored the main factors concerning the vulnerability of the elders that emerges after a disaster. The experiences and perceptions of seniors as well as experts who were involved in disasters revealed two key themes, namely personal factors and social factors. Understanding and realizing these themes and their characteristics can help us to clarify and explain the nature of the older adults' vulnerability in a disaster and to improve nursing care for them post disaster.

Individual capacities are one of the most important influencing factors in the vulnerability of elderly people. According to the findings, before the arrival of search and rescue teams, a majority of people pulled out of debris were rescued by family, friends, or neighbors. In many cases, the young people helped the elderly to receive assistance and supplies. This could suggest that the elderly individuals view their personal and social capacities mainly as a support system. Similar to our findings, a study carried out by Aldrich *et al.* in America (2015) mentioned that personal and social capital networks that provide access to resources such as personal assistance, financial resources, as well as emotional and psychological aid act as the basis for support and enhance resilience in crisis situations.^[16]

The elderly believe that individual limitations as a crucial vulnerability factor in disasters. This corresponds with a study conducted by Schroeder and Marianti in UK (2006),

which showed that elderly people are vulnerable for reasons such as homelessness, independence, loss, dependence, lack of social relationships, and loneliness. They also noticed that the inequality when faced with a disaster, together with the inability to access social supports makes them even more vulnerable.^[17]

Demographic characteristics are another group of influencing factors that affect the vulnerability of the elderly. Age, gender, race, ethnicity, and class are the most common vulnerability indexes.^[18] In fact, each separate factor in relation with other demographic factors creates different levels of vulnerability and exacerbates the risk of the disasters.^[4]

The findings of Barry *et al.* in USA (2011) showed that, in terms of demographic factors, some characteristics of people can help them to respond appropriately and some others cause people to not respond properly in emergency situations. This means that the interaction of these features can cause individuals to be vulnerable.^[19]

Based on the experiences of the elderly, family circumstances—living with family members and getting their support—play a significant role in their lives. As an empowering factor, it helps them to manage and control difficult conditions. On the other hand, the elderly who do not have access to their families suffer physical and mental problems during their time of difficulties. As Ardalan *et al.* (2010) pointed out in a study conducted in Iran, this issue, in line with the socio-economic status and cultural backgrounds, has had a huge impact in elderly people's vulnerability and their response to a disaster.^[20]

Social factors in the form of honor, dignity, and religious values contribute to the elderly's perspective on life. It creates the foundation to justify and manage life's issues in addition to determining how to deal with tough situations. According to the results of this study, it is not only the personal and social dignity of the elderly but also the commitment of the community to support these seniors that have made them somehow less vulnerable than the rest of society. However, there are some situations in which the older adults' dignity causes deprivation and disappointment, including when honor and respect prevent them from expressing their needs or accepting help from others, for example, when an old person places the health and welfare of the children and young people before their own, thus putting their own life in danger.

Based on the experience of the elderly in Iran, neglect of their personal and social dignity causes vulnerability to multiply. In this context, seniority, individual autonomy, and being treated respectfully are considered important values for an elderly person, the loss of these due to a disaster causes the person to feel that he/she has lost his/her social status and personal dignity, which is accompanied with a sense of shame. Similarly, Rehnsfeldt *et al.* reported in

their Scandinavian project (2014), that the elderly's social dignity is fulfilled only through effective communication, respecting independence, and meeting their needs in a manner that they do not feel offended.^[21] Moreover, a loss of physical capabilities, negligence, disrespectful behavior toward an elderly, and deprivation from human dignity are the factors that could reduce individuals' resiliency,^[5] resulting in more vulnerability.^[22] These factors should be considered in any nursing plan created for them.

The findings also showed that religious beliefs molded the manner in which the aged perceived life's challenges and problems. The elderly may also feel fatalistic when they have little control over their living conditions, such as when they are faced with natural disasters. Some seniors believed that their efforts and actions would be construed as resisting the will of God, and thus, be considered a sin. Some others mentioned that they should be in absolute obedience to God to receive goodness in this world and the hereafter. Asgari *et al.* (2013) in their research in Iran, argued that for a religious person who believes in the power of God as a source of blessing, all events—even disasters and tragedies—are the blessings and gifts from God. Therefore, based on this belief and with the power of faith, one binds himself/herself to God to bear all difficulties and achieve growth and progress in life.^[23] Because nursing is a science that pays attention to various dimensions of human existence, understanding the impact of religious beliefs and behaviors is considered of great importance.^[24] Moeini *et al.*, in a study in Iran (2008), demonstrated that by considering religious aspects of life, nurses can meet the elderly's substantial needs through providing spiritual care and religious interventions.^[25]

On the other hand, in the Iranian context, religion and a relationship with God is considered to provide a kind of identity, value, social reputation, and dignity. This motivates the people to take care of themselves as well as help others. However, on facing hardships caused by disasters, particularly in the later stages of life, few could become skeptical about their lifetime religious beliefs and values. In this area, conducted studies confirm our findings by showing the influential relationship of religious behaviors and beliefs with physical and mental health, especially under critical conditions.^[23,26,27]

Based on our findings, religious behaviors help older adults to ease their stress and to release their negative feelings. Further, prayer motivates them to endure difficult situations and receive emotional comfort, collectively helping them to become emotionally resilient. Rahimi *et al.* (2013), through a study conducted in Iran, also confirmed this finding by pointing out that creating and enhancing hope through religious attitudes and behaviours can reduce mental distress and create inner peace;^[28] they also mentioned these as contributing factors to cope with life difficulties and feel more healthy.^[25] These coping factors can inspire

a person to get out of crisis mode and find a way into a feeling of calmness.^[29] Nevertheless, our study showed that many of the older people's religious behaviors are not only a way for attracting God's mercy but is also a way to escape from the anger of God resulting due to ignorant and neglectful deeds. The present study was not free of limitations, it was not easy for the elderly to express and recall the difficult and painful experiences they underwent, so in some aspects, due to ethical considerations, we were not able to explore and discover their experiences in depth. However, continuing our sampling with some other older adults who were interested in sharing their experience in detail and using some probing questions helped us to further explore this phenomenon .

Conclusion

Although age is considered an important indicator of vulnerability, the individual, psychological, and social characteristics intertwined with cultural and religious factors can positively or negatively affect personal vulnerability. Accordingly, the results of this study can help health service providers, like nurses, to formulate effective measures at the level of prevention, preparedness, response, and recovery. They could use our finding at the event site or the hospital together with their personal, professional, and ethical competencies to provide proper and timely care in disaster situations. The findings of this study show that health care providers, especially nurses, should consider the physical and mental health status of the elderly to determine and investigate their vulnerabilities accurately. The utilization of their rich experience and sociocultural capacities can help health policymakers to promote the coping capacity of the community. This was a qualitative study aimed to identify factors affecting the Iranian elderly's vulnerability; recent findings could serve as a guide to design a vulnerability assessment tool for the Iranian elderly, and future studies can also be designed based on findings of this research study.

Acknowledgement

These results were derived from PhD dissertation in the University of Social Welfare and Rehabilitation Sciences with proposal number 1892. The authors express their gratitude to the support of University of Social Welfare and Rehabilitation Sciences, Health in Emergency and Disaster Research Center and would like to thank all the study participants.

Financial support and sponsorship

University of Social Welfare and Rehabilitation Sciences.

Conflicts of interest

Nothing to declare.

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