

Original Article



Challenges of older people experienced after an earthquake disaster situation: A neglected issue

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Abstract

Introduction: Older adults' problems and needs may be ignored and not considered a priority matter during disasters due to their complexities and differences from other age groups. This content analysis study was conducted to explain the older adults' experience of living in tents after the Mianeh county earthquake.

Methods: In this research, we used a descriptive qualitative approach. The key elements of Standards for Reporting Qualitative Research (SRQR) were applied to design the research. Data were collected in-depth and semi-structured interviews were done with potential eligible participants. We used heterogeneous purposive sampling (with a maximum variety of 16 older adults with ages in the range of 60–81 years in Mianeh, East Azerbaijan, Iran. The data were analyzed using the conventional content analysis technique.

Results: Four main categories emerged, including failure to provide basic physiological needs, poor management of public support, distress and survival attempts, and loss of life authority. The main themes extracted included psychological quality of life and meeting the basic needs (disabilities and inefficiencies).

Conclusion: It is beneficial to consider the specific needs of vulnerable groups, such as the elderly population, during the program designing by counties' crisis management teams.

Introduction

Earthquake is the most unpredictable and unexpected crisis.^{1,2} Earthquakes are the most disabling and deadly disasters due to their unexpected nature and their potential impact that usually leads to widespread casualties and high death rates. Accordingly, 27000 people have died from earthquakes since 1990.^{3,4}

The noticeable point is the high rate of victims caused by disasters in undeveloped countries, which is 43 times greater than developed countries. Iran is one of the most earthquake-prone countries located on the seismic belt. A severe earthquake occurs in Iran every four years, causing the destruction of 97% of rural units and 79% damage to urban units in seismic zones. Older adults allocate a considerable part of the vulnerable population living in earthquake-prone regions.^{2,5,6} Some older adults may not be able to protect themselves and/or evacuate their buildings quickly due to their physical and cognitive

disability, chronic health conditions, and psychological-social problems.⁷ Hence, older people may experience many issues after an earthquake.⁸

Various studies indicate that older adults are major vulnerable groups at risk of danger and subsequent adverse psychological, emotional, and physical effects. Compared with younger age groups the rate of mortality is highest among the elderly,^{2,9,10} so older adults are affected and at risk differently during disasters.^{11,12} In this regard, older adults with multiple diseases such as disabilities, dementia, and cognitive disorders that live in long-term care centers experience higher vulnerability.¹³

Increased stress along with the pressure on the family and society during the crises cause the needs and problems of older adults to be ignored as prior issues during disasters due to their complexities and differences from other age groups. In this situation, older adults may feel that they have lost their lives and do not have enough time

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to recover and rebuild their lives due to their age.² There are findings of various reports on the impact of natural disasters on older persons. Hence, a study found a high emotional distress level after the earthquake. The authors concluded that veterans benefited from the interventions given after disasters, indicated more endurance, and adjusted themselves in a better way. However, they might suffer more due to their health and functional limitations before the catastrophe. Contrary to the higher death rate, reduction in physical health, functional loss, cognitive decline, emotional distress, lack of social support, and higher vulnerability of older persons after the earthquake was reported.¹⁴ Furthermore, another study showed that a person's function in the life course had a significant effect on later life vulnerability, so older adults who were at risk needed more care because of their condition.²

The injuries of older adults may lead to numerous problems and consequences due to heterogeneous and unknown aspects of life during disasters. A relevant literature review indicates that most of the studies on older adults were published in the quantitative method, and few qualitative studies were done in the field of life experiences of this age group in earthquake-affected areas.^{15,16} The previous studies on the subject are different from the studied area in the present research regarding social and cultural properties. Because aging is process-oriented, this phenomenon depends on psychological, social, and cultural aspects. The present study was conducted to find the older adult's experiences living in relief tents in earthquake-affected areas in Mianeh county, East Azerbaijan province, Iran.

Questions

- How is the quality of life in a tent after the earthquake?
- What is the difference of living in a tent after the earthquake?
- What are the changes in a person's life after the earthquake?
- What problems are likely to face after an earthquake?

Methods

Study design and participants

The key elements of Standards for Reporting Qualitative Research (SRQR) were used in the current study.¹⁷ The targeted population comprised the older adults living in earthquake-affected villages who had to continue their life in tents. Purposeful sampling was used to select older adults with inclusion criteria. The sampling process continued until data saturation. This study used a qualitative study with a conventional content analysis approach. Conventional content analysis is usually used in research techniques describing a phenomenon. This technique is practical in cases where few theories and limited literature are on the studied phenomenon. Researchers avoid applying preset categories but extract them from data in this case. Accordingly, researchers move on to the data

waves to achieve innovative recognition.

To do so, the author referred to the health center and extracted a list of older adults living in the village from the SIB (Persian words for the integrated health system) website. The current research examined the inclusion criteria of the older adults based on the information of health employee who was familiar with the studied population. In the second step, two master experts in gerontology and epidemiology who had academic and practical experiences in disasters and incidents and an employee of the health center went to the residence place of older adults to interview them and reexamine the inclusion criteria. The eligible older adults entered the study.

Data collection

Data collection continued until the end of 2019 in earthquake-affected villages located in Mianeh. Inclusion criteria were as follows: being at least 60 years old, accommodated in tents, living in the village during the earthquake, cognitive health, and verbal ability. The mentioned criteria are considered in the sampling to express more problems.

Interview duration depended on the older adult's conditions; however, interviews did not take longer than one hour. If there was any ambiguous concept after code extractions, another interview was performed to clarify the concept. In this case, researchers made a continual connection with the health employee to help them identify potential participants with maximum variation and enriched information. The authors explained the general objective of the study, research method, audio record, information confidentiality, and their rights to participate in to leave research (informed consent) for participants and people around them. The authors did Interviews in a quiet place based on the older adults' choice inside the tent. After participants' demographic information was examined and recorded, the semi-structured interview with open, informal, and unorganized questions began. The authors gave participants some partial guidelines. The authors asked participants to explain the earthquake and what happened or what they were doing when it occurred. In the next step, the authors asked the main questions. If required, some questions were asked, such as "please, explain more." They asked complementary questions for more exploration. The authors took notes, and body language was recorded when interviewing participants. At the end of the interview, the authors asked a question to ensure accessibility to all required information: "Do you want to add anything else?" The interviewer stopped the interview if participants felt tired or wanted to end the conversation.

Data analysis and trustworthiness

Concurrently with data collection, researchers analyzed the data via the conventional content analysis approach

proposed by Braun and Clarke.¹⁸ The six steps of this approach included familiarizing with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report. In the first step, we read the transcript of each interview at least three times to get familiar with its content. In the second step, we analyzed the transcript and coded it, resulting in the generation of 142 primary codes. In the third step, the codes were refined and merged, and irrelevant or repetitive codes were removed. Consequently, a list of 64 well-developed codes was remained. In the fourth step, these 64 codes were grouped into 13 subthemes. Further review and examination of these themes revealed similarities and differences among them. Considering the identified similarities and differences, researchers categorized the 13 subthemes into four main themes. Finally, we developed a coherent framework for the findings to report. Immersion and continual observations were used to expand the validity of qualitative research; in this regard, the researchers spent two weeks among earthquake victims, so they were involved in the study and made a suitable relationship with the participants. In this way, the authors found a concepts during the study process.

The research colleagues revised the interviews. The interaction between researchers, colleagues, and consultants who had experience in qualitative studies provided the field for guiding research plans, data collection, and data analysis. In addition, revision by participants and integration technique was done by employing three researchers in the interview, collecting, analyzing, and interpreting.¹⁹

Results

Data saturation was obtained from semi-structured face-to-face interviews with 16 participants living in tents in earthquake-affected villages. Research data included overall 17 interviews and observations. Moreover, informal interviews during observations were recorded as data. The age average of the older adults ($n=16$) who participated in this research equaled the range of 60-81. Other characteristics of participants have been reported in Table 1. The interviews and notes analyzed data included 17 subcategories, four categories, and two themes. The themes indicated the older adult's experience of living in relief tents after the earthquake occurred in Mianeh. The themes covered psychological quality of life and meeting basic needs (disabilities-inefficiencies) (Table 2).

Psychological quality of life

A. Loss of life authority

Many participants explained how they lost their life authority after the earthquake. The most common opinion was disappointment about the future and disability to live the previous life. Participant 9 stated that "I am worried if I cannot repair our house because I do not have money and

Table 1. Demographic characteristics of participants in the study of the older adult's experience of living in relief tents after a county earthquake

Variables	Category	No. (%)
Age (y)	60-65	3(18.75)
	66-70	5(31.25)
	71-75	4(25)
	>76	4(25)
Gender	Female	8(50)
	Male	8(50)
Job	Homemaker	8(50)
	Rancher, farmer	3(18.75)
	Unemployed	3(18.75)
	Quran teacher	1(6.25)
	Builder	1(6.25)

salary." Participants cited that they could not have their belongings and amenities after the earthquake. Participant 8 explained, "We are worried about our animals that live farther from our tents, and we do not know what we can do for them." Some participants felt they were a burden because they did not have accommodation, and their houses were destroyed. Participant 1 expressed, "Our tent is placed in our neighbor's garden, and they have asked us to pack it away although the place is a sloping land." Another subcategory pointed to feeling helpless in case of family support by men. In this case, participant 14 explained, "ribs of my wife are broken, and she has broken her leg; she had diabetes and blood pressure, but now her situation is worse, and I cannot do anything for her."

B. Distress and survival attempts

Most participants complained about the distress after the earthquake and pointed to survival attempts as the main concerns after the crisis. Participant 7 stated, "We do not have any appliances because all of them have been destroyed". Participant 13 explained, "We lost all properties that have hardly been collected over time." Participant 3 cited, "I am thinking to build only one room to live there because we do not have anything more in this age." Participant 14 stated, "I have to go to Mianeh city or Tehran to live with my son until spring when I can renovate our house. We cannot live in the tent under such circumstances." Participant 4 explained, "We are living in tents for months while all know that tent is not suitable for living for several months. If I had relatives, I would have gone there."

Meeting basic needs (disabilities and inefficiencies)

A. Failure to provide basic physiological needs

Most participants unconsciously pointed to poor facilities and adverse living conditions in the tent after the earthquake. When the interviewer asked participants about their living conditions after the earthquake, for instance, participants 4 and 15 answered, "We do not

Table 2. Example of coding and breaking into subcategories, categories, and themes of participants in the study of the older adult’s experience of living in relief tents after the Mianeh earthquake

Themes	Categories	Subcategories	Codes: example
Meeting basic needs (disabilities and inefficiencies)	Failure to provide basic physiological needs	Poor basic life requirements	Lack of heating devices, WC, and bathrooms
		Undesired life conditions	Cold weather days and nights in tents Far distance between tents and WCs and fear to go WCs at nights
	Insufficient management of public supports	Lack of fair access to amenities and facilities	Meeting the needs of younger people and those who live close to the distribution place
		Lack of attention to people with hazardous behaviors	Not considering diseases of older adults
		No aid for people with disability	Not considering the physical weakness of older adults
		Abusers who look for free amenities	Giving tents and other facilities to residents living in Tehran province
		Insufficient assistance	Lack of cover for tents
		Lack of spiritual support for earthquake survivors	No response and responsibility from officials
		Lack of trust in government support under adverse conditions	Concerns for upcoming snowy days
		Psychological quality of life	Distress and survival attempts
Desire to have minimum living standards	Having a room to live there		
Forced acceptance of life with minimum standards	Forced to live in a tent		
Loss of life authority	Leaving the living place due to poor amenities		Going to relatives' house in upcoming days
	No dominance over our belongings		Inability to keep animals and provide for their needs due to their distance from tents, and lack of ability to go to personal gardens
	Sense of being a burden		Set up tents in neighbors' gardens
	Feeling helpless in case of family support	Inability to do anything for my wife whose ribs are broken	
	Disappointed about future and inability to live previous life	Worried about building a house due to lack of money and salary	

have any place to wash the clothes and dishes”. Moreover, participant 1 replied, “We cannot sleep on cold nights, we do not have enough blankets, and these tents are not appropriate for cold areas in this season”

B. Insufficient management of public supports

All participants were dissatisfied with the distribution and allocation of public and private aid, and the majority of participants complained about the inattention to age-related conditions. Participant 6 stated, “The younger people and those who live closer to mosque or distribution centers take all appliances, while we get no amenities because we are older and live farther from the village center.” Participant 7 explained, “Those people who can visit officials, cry, and explain their conditions can receive aid, while we do not receive anything for our worse conditions because we could not cry and beg...” Participant 3 stated, “Officials do not give older adults any service and do not pay attention to their diseases and disabilities that prevent them from commuting and moving equipment.” Participant 5 cited, “Many people who live in Tehran came here and went to their old houses or lands and took relief tents and many equipment and food!” Participant 8 explained, “We do not have any coverage to protect the tent and our life on rainy or snowy days.”

Discussion

The main purpose of the present study was to explain the lived experience of the rural older adults living in relief tents after the earthquake in Mianeh County. After the qualitative study was conducted with a content analysis approach, the initial codes, subcategories, main categories, and themes were extracted. Two main themes (disabilities and inefficiencies) included basic meeting needs and psychological quality of life. The four main categories comprised failure to provide basic physiological needs, poor management of public support, distress and survival attempts, and loss of life authority.

In this research, the failure to provide basic physiological needs was introduced as the most critical challenge of living in relief tents among older adults after the earthquake. Similar studies^{10,20} expressed similar needs as the most crucial needs of older adults during natural disasters. Moreover, another study²¹ found that equal attention was paid to different needs of age and sex groups in earthquake-affected villages. Accordingly, the specific needs and conditions caused by physiological and anatomic changes, chronic diseases, and somatic and motion limitations were not considered. In these cases, no specific measures were taken for older adults, so some could not use the provided equipment and services due to their physical weaknesses and somatic diseases or

disabilities. Under such circumstances, only a few older adults could use the provided services and products directly or indirectly. Although some groups and organizations do vast operations during natural disasters, e.g., earthquakes, to distribute numerous goods and services to help affected areas, older adults and their specific needs are ignored in most of these relief attempts.²²

Because few services were provided for the older adults studied in this research, many complained about insufficient services and support management, like in other studies.^{2,8} Many supportive individuals, organizations, and institutions preferred to help those who were available applicants closer to the distribution place. Hence, it seems that many UN principles for the development and implementation of social and civil aids for older adults had been forgotten to improve their independence, participation, care, self-actualization, and self-esteem during the studied earthquake.²³ The public aids and reliefs were not suitable for the older adults because of their specific conditions, including physical function limitations, mobility limitations, and need for aid and rehabilitation appliances (e.g., cane, hearing aid, glasses, and dentures). High prevalence of chronic diseases (e.g., high blood pressure, diabetes, and other cardiovascular diseases) were not considered compared to young people and other age groups that usually received aid and amenities. On the other hand, it was essential to consider the physical, mental, treatment, and rehabilitation needs of the older adults besides other age groups when distributing aid and planning relief programs by health experts and relief organizations during natural disasters. In this case, participants believed that the fundamental needs of older adults with physical mobility problems must be met by providing them with aids and amenities in their tents. They explained that the competitive conditions deprived older adults with disabilities of relief goods and services. Participants stated that younger people and those living in other cities born in the affected cities received the best services, while older adults had no minimum amenities. Such discrimination was annoying more than the earthquake.

Distress, survival attempts, and loss of life authority were the most effective themes obtained from the interviews because many older people were unsure about their future and living after the earthquake. The reason was that they could not do work anymore, did not have minimum living means and standards (money and house), and had to live in tents or immigrate to cities and live with their children. Some issues, such as poverty, earthquake, inability to start new jobs or learn skills, negligence of the older adults, and ignoring, are the most important factors causing poverty and deprivation. In this case, some studies pointed to unaffordability, physical disability, and unawareness of older adults. Some formal supportive mechanisms contribute to more access of the

older adults to services to alleviate their poverty. This finding was consistent with the results of previous studies. Findings showed that some older adults felt that they lost their authority. Hence, housing and financial support organizations must renovate their houses and reinforce their buildings to convert their sense of distress to hope and self-confidence. In this case, they must help them with personal growth, and improve their quality of life.^{24,25}

Limitations

This study's interviews were done in the presence of spouses and other family members because it was winter in earthquake-affected areas; hence, there may be some biases in reported problems. Therefore, the information may not be accurate. Moreover, the presence of two researchers and health employees of the village and a one-session interview may have affected the answers given by participants.

Conclusion

According to the present paper's results, the daily problems of older adults get considerably bigger after the earthquake. However, we can prevent many of these problems, at least in villages, by planning and considering the conditions of older adults and vulnerable groups based on the data published on the Sib website of the Health Ministry. Moreover, Crisis and Disaster Management teams in counties, provinces, and associated ministers can employ experts in older adults' issues to predict the needs, potentials, abilities, and weaknesses of this age group to provide the needs of older adults among other age groups. Therefore, it is recommended to do further studies on different needs and problems of older adults during other disasters within different time intervals after their occurrence. The different time intervals must be considered because it is impossible to generalize the present paper's results to other different conditions and time intervals. However, the findings can be used as valuable information in other studies.

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Authors' Contribution

Conceptualization: Mehdi Abbasian, Hassan Soleimanpour, Hadi Hamishehkar, Ehsan Sarbazi.

Data curation: Hassan Soleimanpour, Morteza Ghojzadeh, Mehdi Abbasian.

Formal analysis: Morteza Ghojzadeh, Mehdi Abbasian, Ehsan Sarbazi.

Study Highlights

What is current knowledge?

- The complexities of older adults' problems and needs may result in their neglect and lack of prioritization during disasters.

What is new here?

- Incorporating the unique requirements of the older adults into regional crisis management teams can address their fundamental physiological needs, mitigate the shortcomings of past public assistance, alleviate distress and survival efforts, and preserve their autonomy.

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Competing Interests

There is no conflict of interest.

Ethical Approval

This study was reviewed and approved by the REC (Research Ethics Committee) of Tabriz University of Medical Sciences (IR.TBZMED.REC.1399.897). We confirm that all methods were performed in accordance with the relevant guidelines and the World Medical Association Declaration of Helsinki. Also, we confirmed that written informed consent was obtained from all patients who participate in the study.

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