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# Nurses' experiences responding to a devastating earthquake: the Kahramanmaraş case

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## Abstract

**Background** The roles of nurses in disaster response are noteworthy due to their contributions to the well-being and resilience of healthcare workers and affected communities. The aim of this study is to determine the factors affecting the caregiving competence of nurses with experience of disaster interventions.

**Methods** A qualitative research design with a descriptive phenomenology approach was used. Data were collected from July-December 2023 with participation of 22 nurses, face-to-face with a personal information form and a semi-structured interview form. Colaizzi's seven-step method and MAXQDA 20 were used to analyze the data. The Consolidated Criteria for Reporting Qualitative Studies was used.

**Results** Through in-depth analysis of the data obtained, three themes of inadequate preparedness and coordination, challenges due to the nature of the disaster and full preparedness for disaster emerged.

**Conclusions** In this research, it was determined that inadequate organizational preparation negatively impacted the caregiving competence of nurses. Additionally, the findings of the study support the need for comprehensive training related to disaster and emergency care nursing in order to be prepared for disasters. Examining nurses' experiences during disaster response can make a meaningful contribution to improving disaster policies. In disaster response, nurses struggle with many difficulties arising from environmental, administrative, individual and educational factors. Nurses need to be psychologically strengthened for possible disaster response. The results of academic studies should be taken into account in the formation of disaster-related policies.

**Clinical trial number** Not applicable.

**Keywords** Disaster, Earthquake, Emergency care, Nursing, Qualitative

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## Introduction

Disasters are events occurring at unpredictable times, that negatively impact the daily life of society, and lead to requirements for emergency health services [1]. Natural and technological disasters experienced around the world cause increasing numbers of deaths and injuries, economic losses, social problems and damage to the environment [2]. Preparation for disasters has vital importance to reduce the negative impacts of disasters and to minimize the numbers of dead and injured [3]. The literature emphasizes the need for nurses, the foundation stone of health systems especially in disaster-prone countries, to have adequate knowledge, skills and preparedness to be able to cope with disaster intervention and management [3, 4].

## Background

Disasters, which have always been a threat to humanity and whose numbers and severity are increasing globally, are sudden events that often exceed local response capacity, require national or international intervention, and cause significant damage and loss of life [5]. The Disaster and Emergency Management Presidency (AFAD) reports that earthquakes are the type of natural disaster that causes the most loss of life and property in Turkey. On February 6, 2023, at 04:17 and 13:24 local time, two earthquakes measuring Mw 7.7 and Mw 7.6 occurred, with epicenters in Pazarcık (Kahramanmaraş) and Elbistan (Kahramanmaraş). In addition to Kahramanmaraş, 11 provinces in the region, including Hatay, Gaziantep, and Adıyaman, were affected by the earthquake. In this earthquake, 50,783 people lost their lives and 115,353 people were injured [6].

Disaster risk management aims to minimize the health impacts of disasters, support the effective use of health service resources, strengthen preparedness processes, increase timely response capabilities, and ensure the community's recovery process [7]. The competence of nurses in disaster response is crucial in reducing the negative health outcomes of those affected by disasters [5]. However, rapid and appropriate response to disasters depends on the preparedness of nurses on the front lines. A study on this subject reports that nurses' approaches during disaster interventions reduce mortality rates and make them more successful in managing emergencies [8]. However, there are also studies in the literature that report that nurses in countries with high disaster risk have insufficient disaster knowledge and skills and, accordingly, are unprepared to respond to disaster situations [3, 9].

The International Council of Nurses (ICN) emphasizes that all nurses, regardless of their area of expertise (clinicians, educators, researchers, managers), should have the best possible competence in planning and completing

disaster care and be equipped with sufficient knowledge and skills regarding disaster preparedness and response [10]. In Turkey, nurses play an active role in the planning and delivery of health services by participating in every stage of the disaster management cycle and supporting various search and rescue organizations and the Red Crescent [11]. Therefore, every nurse who will be assigned to work in disasters must be competent and qualified according to international standards. However, in our country, the legal definition of disaster nursing has not yet been established even at the national level, and the roles and responsibilities of nurses in the disaster process have not been clarified [12]. However, sufficient nurses in disaster response can provide quality care and psychological support to the affected population, increase the community's trust in healthcare providers, and reduce post-disaster deaths and complications [13].

In order to increase nurses' competence in disaster management, it is important to improve legal regulations regarding duties in disasters, develop a standard curriculum at the licensure level, and raise awareness on disaster management issues through in-service training in institutions [14]. Another factor affecting disaster response competence is experience. Therefore, the experiences of nurses who have worked in disasters are a unique source of information for guiding preparedness initiatives [5]. In this regard, nurses' experiences during disasters will help to quickly resolve issues that may arise in post-disaster nursing care and contribute to the development of disaster care regulations [15].

Considering the limited research on the challenges nurses face in disaster risk management [5, 16–19], it is important to conduct more studies to fill this gap. In this context, identifying nurses' post-disaster experiences can contribute to the literature and provide guidance for preparing for future potential disasters. To this end, the study aimed to examine in depth the experiences of nurses who provided care to earthquake victims in the Kahramanmaraş-centered earthquake.

## The study

### Aim

The aim of the research was to determine factors affecting the caregiving competence during disaster interventions of nurses volunteering at the event site after the earthquake disaster with epicenter in Kahramanmaraş.

## Methods

### Design

This study used a qualitative research design with a descriptive phenomenology approach. Data were collected through individual semi-structured interviews. The reporting of this study was based on COREQ

**Table 1** Characteristics related to sociodemographic data and working life of participants ( $N=22$ )

Characteristics	Answer options	n	%
Age group ( $38 \pm 6.7$ years)	28–34 years	7	31.8
	35–41 years	5	22.7
	42–48 years	10	45.5
Sex	Woman	13	59.1
	Man	9	40.9
Marital status	Married	12	54.5
	Single	10	45.5
Educational level	High School	1	4.5
	Associate degree	4	18.2
	Undergraduate	11	50.0
	Masters	6	27.3
Years of employment ( $16.1 \pm 7.8$ )	1–10 years	7	31.8
	11–20 years	7	31.8
	21 years or more	8	36.4
Clinic of employment	Intensive care	7	31.8
	Plastic surgery ward	2	9.1
	General surgery	1	4.5
	Emergency service	4	18.2
	Operating rooms	2	9.1
	Training nurse	1	4.5
	Perinatology	1	4.5
	Burn unit	2	9.1
	Hematology	2	9.1
Received disaster preparedness training	Yes	5	22.7
	No	17	77.3
Received training about the roles of nurses in disaster interventions	Yes	4	18.2
	No	18	81.8
Has advanced life support certificate	Yes	10	45.5
	No	12	54.5

(Consolidated Criteria for Reporting Qualitative Research) [20].

### Study setting and recruitment

This study was completed with nurses who volunteered in the disaster region. Due to the exploratory nature of the qualitative design, sample size was not initially determined for the study. As a result, the sampling process continued until data saturation was reached. When it was observed that no new codes were defined, the sampling process ended with 22 participants. The

sociodemographic and working life characteristics of participants are presented in Table 1.

Data were collected face-to-face with the individual interview technique using a personal information form and a semi-structured interview form containing seven questions. Data were collected from July–December 2023 by two researchers trained in qualitative research in the training room of a hospital (DK and TÇ). During data gathering, special care was taken that the researcher directing questions to the nurses comprising the sample was guided by the researcher employed in the same hospital. Nurses were asked the following questions during the interview (Table 2).

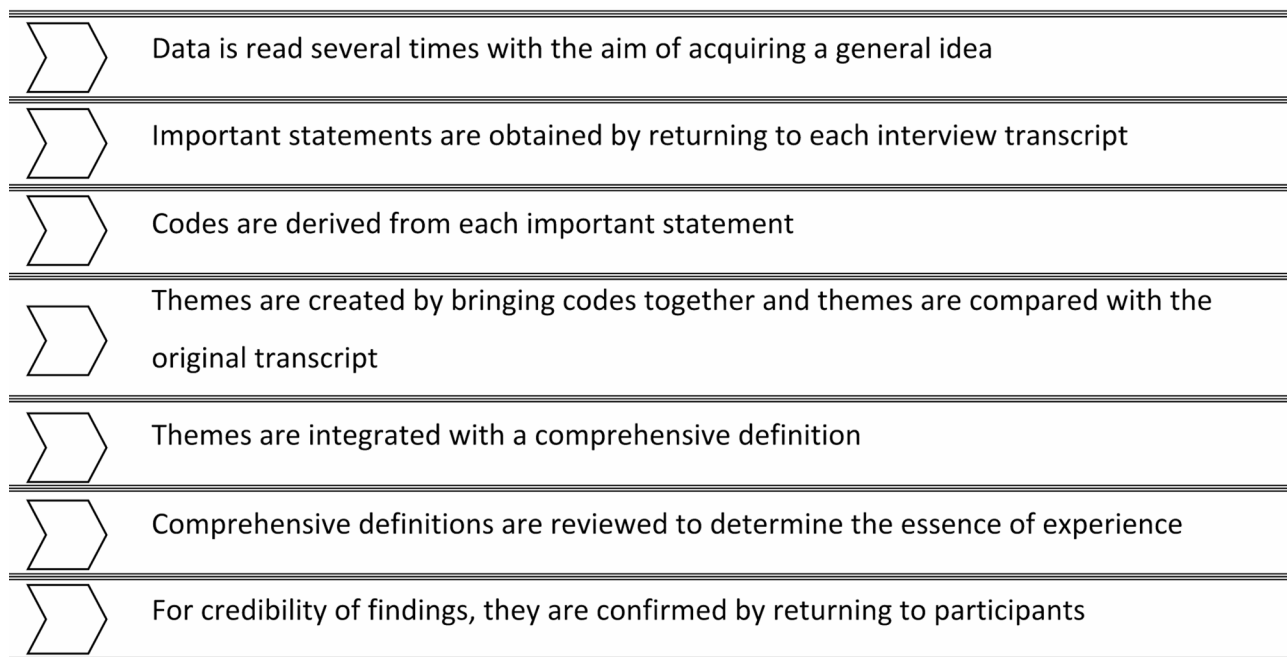
Interviews with nurses lasted 20–30 min. To test the understandability of the questions and suitability for the aim of the study, pilot interviews were held with four nurses not included in the research sample. After the pilot study, no changes were made to the interview questions. Before interviews, nurses were explained the aim of the study, method, duration and about the use of a voice recording device, and verbal consent was then obtained from nurses. Care was taken to avoid personal judgements and not behave in a directive way during interviews. For confirmation by nurses, participants were asked whether there were any topics they wanted to add at the end of the interview and responses were reviewed.

### Data analysis

Analysis of data in the study used Colaizzi's seven-step analysis method [21] (Fig. 1). After completing interviews with voice recordings, the raw data were transcribed word for word by the researchers (ES and ÜK). The transcribed interview output was sent to participants with the aim of determining whether there were any topics the participants wanted to add or correct. The transcribed data were read several times by two researchers (TÇ and AŞ) and firstly codes defining the main case in the study were created from each word, sentence and paragraph, and then themes and subthemes were created by classifying the codes. The data were analyzed using the qualitative research software MAXQDA 20. The reliability of the themes and explanations and accuracy of the analysis process were examined by researchers who were trained in qualitative research (TÇ and AŞ).

**Table 2** Semi-structured interview questions

Questions
1. What was effective for you to volunteer for duty in the disaster region after the Kahramanmaraş earthquake? Can you explain?
2. As a nurse, how prepared did you feel during management of the Kahramanmaraş earthquake?
3. Was there any event that you can't forget, that affected you deeply, while you were in the earthquake region? Can you explain?
4. Can you explain the event that made you feel most inadequate as a nurse during management of the Kahramanmaraş earthquake?
5. Can you explain the factors obstructing you from giving effective nursing care during disaster interventions?
6. Can you explain the factors facilitating you in giving effective nursing care during disaster interventions?
7. With the aim of increasing the efficacy of nursing care during disaster interventions, what can be done?



**Fig. 1** Colaizzi's seven-step method

### Rigor and reflexivity

To check the accuracy of the results of qualitative studies, the gold standard is accepted as the credibility, transferability, reliability and confirmability criteria [22]. To strengthen the internal validity (credibility) of the research, when preparing the personal information form and semi-structured interview form questions, screening of the relevant literature was performed and expert opinion was sought by creating a conceptual framework related to the topic. Individual interviews were conducted by two female research authors who graduated from a doctoral program in emergency nursing and received training in qualitative research. One of the interviewees worked as a training nurse at the hospital where the study was conducted and at the time the data were collected, while the other interviewee worked as a lecturer in a university's first aid and emergency program, teaching courses on emergency medical services in mass events and disasters. The interviewers adopted a reflective stance during the research and applied the bracketing method throughout the data collection and analysis processes. With the aim of protecting the reliability of data, care was taken to preserve its originality. Additionally, after transcripts were made, participants were met and asked whether there was anything they wanted to add/remove. To ensure confirmability, original interviews were followed and the responses of nurses are presented directly.

### Findings

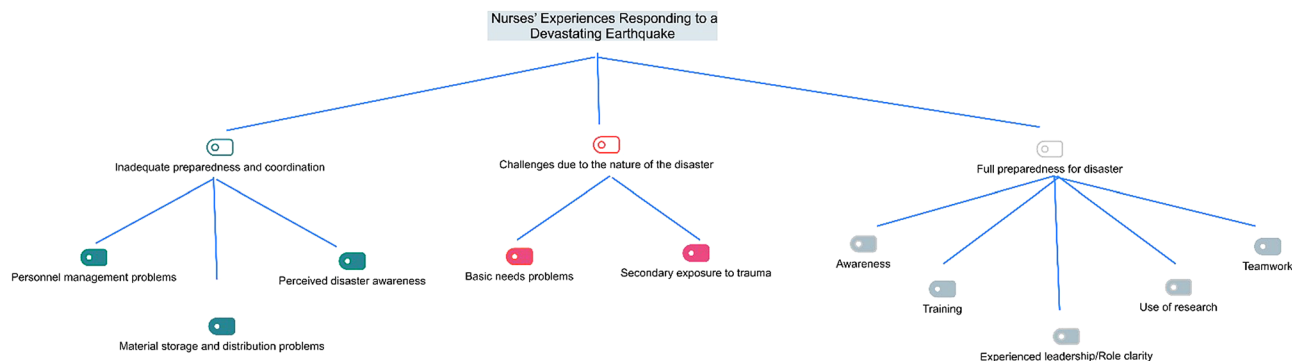
#### Identified themes

The findings illuminate the psychological, emotional and professional dimensions of disaster interventions in Türkiye from the perspective of nursing and the functionality of disaster intervention strategies adopted in Türkiye. Through in-depth analysis of data obtained in the research, three main themes of inadequate preparedness and coordination, challenges due to the nature of the disaster and full preparedness for disaster emerged. Sub-themes and each theme are presented in Fig. 2. Quotations from each theme and sub-theme are presented in Table 3.

#### *Theme 1 inadequate preparedness and coordination*

**Personnel management problems** Nurses assigned as volunteers during disaster interventions frequently stated they had no previous information about the duration, location or nature of the duties they would fulfill and this uncertainty affected them negatively, they were not immediately assigned when they arrived in the disaster region due to lack of coordination, and worked in units outside of their area of expertise where they lacked experience.

**Material storage and distribution problems** While nurses participating in interventions teams in the 24th hour after the disaster stated there was lack of materials, nurses included on the team in later days stated there was all types of materials including drugs, consumables, clothing and food; however, there were serious problems with storage and distribution.



**Fig. 2** Themes and sub-themes related to experiences of nurses in destructive disaster management

**Perceived disaster awareness** Nurses comprising the sample in the research stated they became aware that they were not sufficiently prepared for disasters at institutional, administrative, professional and societal levels after this disaster.

#### **Theme 2 challenges due to the nature of the disaster**

**Basic needs problems** Nurses included within the scope of the research reported that due to challenges brought by the disaster, they experienced problems with food, accommodation, heating, and hygiene, they paid for their accommodation needs from their own means, and took action to ensure hygiene through interventions outside of their duties.

**Secondary exposure to trauma** Nurses included within the scope of the research stated they could not believe the scenes they encountered were real, they felt they were inside a film scenario, they found it difficult to forget their experiences related to the disaster when they returned to normal life, and they were negatively affected psychologically.

#### **Theme 3 full preparedness for disaster**

**Awareness** According to nurses, full preparedness in the face of disaster would be displayed if the following interventions were implemented, such as if individual and social disaster awareness was developed and investments made to build earthquake-resistant buildings. Nurses stated preparedness could be improved if duties they will undertake during interventions occurring for any disaster event were previously determined, if accessible stores were created for medical material that would be required in any possible disaster situation, and if sister cities were identified for cities with high disaster probability. They stated that health professionals experienced in disasters or disaster intervention should host regular meetings about being prepared for disasters and participation in these meetings should be ensured.

**Training** For full preparedness for disaster, a statement continuously mentioned by nurses was the topic

of education. Nurses proposed that everyone should undergo comprehensive and effective training programs about disaster, trained professionals should play roles in disaster intervention and that nursing undergraduate education should be enriched in a serious way for both disaster nursing and emergency nursing.

**Experienced leadership/role clarity** Participants stated that some nurse managers were not familiar with planning and processes related to potential disaster interventions or emergency situation management, that service given with leadership by experienced health professionals positively affected the adequacy of disaster interventions and that nurses should be assigned more in every stage of disaster management.

**Use of research** Participants recommended that studies by health professionals experienced in disasters be increased to ensure full preparedness for disaster interventions and the use of strategies for disasters developed from the results of these studies.

**Teamwork** Nurses included in the sample showed that another factor facilitating disaster intervention was teamwork.

#### **Discussion**

Nurses have critical importance for planning of disaster interventions and implementing and improving practices, and more research into their experience is needed to manage practices in the future. There are several quantitative studies related to disaster interventions by nurses. Though the basic elements of disaster interventions are known, the ability of quantitative research to present rich details about the experiences of nurses is limited. Additionally, quantitative research may not be able to evaluate in depth the opinions, intentions and role awareness of nurses during disaster interventions [23]. This article offers a general perspective on the experiences of 22 nurses who volunteered during the interventions after the February 6, 2023 Kahramanmaraş disaster, called the disaster of the century, with a descriptive phenomenological approach, one of the qualitative research methods.

**Table 3** Themes, sub-themes and quotes related to related to experiences of nurses in destructive disaster management

<b>Theme 1 Inadequate preparedness and coordination</b>	
<b>Sub-themes</b>	<b>Quotes</b>
Personnel management problems	<p>"Were there deficiencies in organization? Yes. Generally, Türkiye has general lack of organization, in my observation. From making lists to where a person would be sent, clarity never emerged in some way... When leaving here, though the team leader said Ayşe you will work in the internal intensive care, no one made a sound. We had our troubles due to uncertainty, we did." (P1)</p> <p>"...I'm an emergency nurse, I have an emergency certificate. They say to me - go to intensive care. I say - I have no intensive care experience. But they say - go now, we'll correct it later..." (P11)</p> <p>"Let's say, there was no duty defined. Like, when we went there, we went 12 days later. Honestly, I was a little anxious because we didn't know where we would be assigned. I could do my duties as a pediatric nurse, but there was anxiety; would I be able to work as a gynecology nurse or as an internal medicine nurse?" (P7)</p>
Material storage and distribution problems	<p>"There was incredible material there, on the first days. After the capacity of the hospital was exceeded, lots of aid arrived; however, we experienced lots of problems related to storage of that material." (P1)</p> <p>"Not just hospital material, there was material like food and drink, but no one knew what the material was... That was the biggest problem. Distribution couldn't be done as it wasn't known what the material was..." (P3)</p>
Perceived disaster awareness	<p>"As a nurse, actually, you may be more prepared for disaster. At least if a disaster occurred in a hospital, what would I be able to do myself in the first 24 hours, first 72 hours? What would I be able to do in my surroundings? I noticed we were not ready for that." (P10)</p> <p>"I think as the whole of Türkiye, we were not prepared for disaster. We saw that. In fact, we are in an earthquake region but we realized we had not implemented such a live scenario as a country before. Because everyone, unfortunately, tried to do whatever they knew..." (P10)</p>
<b>Theme 2 Challenges due to the nature of the disaster</b>	
<b>Sub-themes</b>	<b>Quotes</b>
Basic needs problems	<p>"We didn't change our clothes for days. Toilets were a very big problem. The wall was demolished. There were water problems. You can't even find physiological serum. You can't sterilize tools. No sterilization. Like, you throw material into X (disinfectant material), you wash but there's no water, you can't fully wash it..." (P6)</p> <p>"That night we didn't rest because of the cold. It was very cold. There was frost. For example, when I saw a blanket, I was very happy. I felt warmed. We rested in a council bus there. Because you couldn't trust the buildings..." (P8)</p> <p>"Lack of sleep, hunger, etc., we didn't eat anything hot for 3 days. I can say we just were fed with water. That was how it passed. Like, those things are not important, but I had a feeling that the job would never end, never finish." (P12)</p>
Secondary exposure to trauma	<p>"The man was taken out alive, but his arm was amputated or his leg was amputated or both arms, both legs were amputated. Like, those who came out remained half-done. After a certain point we began to think whether the work we did was good or bad." (P12)</p> <p>"It was a very weird environment. I spent all the nights there crying. Seda, who we came with, said you wake every morning sobbing and crying. Why don't you ask me why I cried? I thought I cried due to despair at that time, but we experienced intense emotions." (P1)</p> <p>"We lived a film scenario in reality. It was like a war zone. Everyone was pushing us. Help us, help us they said, everyone was pushing us. Bloody stretchers on the ground, exitus cases wrapped in blankets to the left and right. Everyone grabbing our lapels saying - help me. It was very impactful." (P10)</p>
<b>Theme 3 Full preparedness for disaster</b>	
<b>Sub-themes</b>	<b>Quotes</b>
Awareness	<p>"Much sturdier buildings, especially health facilities, could be built. That's very important. We were forced to work in a building that was half demolished. Because there was nothing to be done. Creation of earthquake awareness" (P19)</p> <p>"We say the organization of the Maraş earthquake was very bad, but who is criticizing, I am criticizing. Have I prepared? No. My superior criticizes, have they prepared? No. I guess we can call this fatalism. No one has prepared. We need to prepare." (P19)</p> <p>"...I think each region should have a sister city. So they can provide support if a disaster happens to us. There may be introductory meetings for this." (P1)</p>
Training	<p>"I think everyone should have disaster training. Not voluntary linked to the person, everyone needs to know it..." (P21)</p> <p>"For example, when intervening for a patient, it should be known that while I open venous access, another colleague needs to prepare emergency drugs, and another colleague needs to prepare intubation materials. We need to prepare everything that patient could possibly need. What we need to do in emergency situations should be systematically taught." (P8)</p> <p>"I said this previously to the lecturers in my master's exam. In fact, I was accepted for the masters in this way. Nurses reach graduation without any knowledge accumulation about interventions in emergencies, without even knowing how to put on a neck brace and form the back bone of the emergency service. I am in favor of starting more effective emergency education in universities. I am very against being sent into the field like a fish out of water." (P12)</p>
Experienced leadership/role clarity	<p>"As nurses, in disaster situations we are at the forefront of caregivers and implementors. We give the serum, we do the dressings... My reason for wanting nurses to be included in organization is that we will be able to make the physical conditions of our own working environment more suitable in the environment in which we find ourselves." (P15)</p> <p>"The colleague managing us, for example, was a nurse colleague only in their second year in the profession. Due to their inexperience, the recommendations they offered raised certain defenses, our problems were due to that." (P1)</p> <p>"The hospital's senior nurse, people we called supervisors, they organized there. They were earthquake victims but they helped us about every topic. They were the coordinator for us." (P4)</p>
Use of research	<p>"What was missing, for example? Opportunities should be given to share experiences during duties during disaster interventions in congress environments. These experiences should be evaluated with a professional eye. I think these studies need to be increased, clearly. The topic needs to be mentioned more by nurses who went to the region, with contact there." (P10)</p>

**Table 3** (continued)**Theme 1 Inadequate preparedness and coordination**

Teamwork	<p><i>"Team work is very important. Everyone is aware actually. Very few are unaware. There were doctors from an AFAD team working in the emergency service of a hospital. I understood the importance of team work one more time there." (P8)</i></p> <p><i>"...I worked with a willing team. We gave very good care to intensive care patients. We worked in very good cooperation with doctors. From that perspective, there was no problem" (P9)</i></p>
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Disaster risk management is the process of minimizing the effect of a disaster through organizing and directing resources to cope with a disaster and coordinating the roles and responsibilities of those intervening [24]. In this research, participants proposed that personnel resources were not effectively organized and managed; hence, the disaster intervention process was negatively affected. Another research, investigating and assessing the disaster of the century in the field, supports our research findings [25]. This research, conducted by Arıkan and Arıkan (2024), reported search and rescue teams and assistance were not organized in a planned way, a long duration passed while search and rescue personnel working with state institutions prepared their assignment documents for the disaster region and search and rescue teams set out for disaster intervention very late after waiting for permission documents [25]. Disaster management is reported to comprise five processes of planning functions, organizing, implementing, coordination and auditing. The organizing stage encompasses the process determining which sub-units will be created and who will be assigned to these units. The duty distributions made here facilitate and acceleration operations [26]. In line with this, it is inevitable that clear determination of the roles and responsibilities of individuals in the organizing stage will positively affect the disaster intervention process.

There is a growing consensus in the international field about the need for nurses to have basic information and skills to be able to effectively cope with the challenges of disasters [16]. Developing disaster nursing on a local and global scale requires a multidirectional approach beginning by enhancing the understanding of nurses related to basic competence areas. It was reported that integration of these areas in training and disaster drills will assist in strengthening practical skills and will ensure productive and effective responses in real disaster situations [27]. In this research, participants stated the need to prepare comprehensive and effective educational programs about disasters and to seriously enrich the undergraduate nursing syllabus in terms of both disaster nursing and emergency nursing. In the literature supporting our research findings, nurse reported they had inadequate information in the disaster field and did not have a comprehensive educational program [16, 28, 29]. It was proposed that full preparedness for disasters could be provided by strengthening disaster skills with innovative education

technologies like virtual reality and e-learning platforms, simulation training [27] and also clinical and technical training, in addition to training to increase knowledge and skills of nurses related to team leadership in disasters, problem-solving, creativity, resource management, communications, and team work [30–32].

In this study, some nurses stated leaders were not experienced about planning related to disaster interventions or emergency situation management and that leadership by experienced health professionals would positively affect the adequacy of service in disaster interventions. Similarly, a study performed about the topic reported that some nurse managers had no experience of coping with disasters and those with previous experience were not competent in effectively managing this new and unique situation [16]. Research investigating the effect of nursing experience on disaster skills stated that experience affected skills, and that nurses working for longer durations had higher disaster management skills [33]. This result shows how important having experience and competence is for nurses to act as leaders.

Research and development (R&D) was reported to have critical importance to advance disaster nursing. Evidence-based information that will direct clinical practice can only be produced through research. Results obtained from research focusing on competence of nurses emphasize that it will be more applicable if it is based on real world experience [27]. In the study, participants focused on the importance of research for full preparedness for disaster and recommended that studies investigating the experiences of nurses in disasters be increased and the results of these studies be used to develop strategies for disaster intervention. A study investigating the challenges faced during disaster interventions by nurses, which supports our research findings, reported that the majority of participants stated there was inadequate scientific evidence to guide nursing practice during disasters, they perceived the importance of using research findings and transferring them into clinical practice and expressed a strong desire about increasing cooperation and coordination to implement evidence-based approaches during disasters [16]. In line with this, it may be said there are several priorities for research into disaster nursing in the future. It is clear that there is a need for further scope and systematic reviews to identify gaps in the evidence base within disaster nursing research.

The Centers for Disease Control and Prevention (CDC) state that health employees are among groups affected by disasters [34]. A study by Sato et al. [35] reported that a significant portion of nurses (87.3%) experienced traumatic events during disasters, 26.3% met the positive limit criteria for post-traumatic stress disorder and 11.9% experienced high levels of anxiety and depression. Supporting the literature, in this research participants mentioned they could not forget what they experienced during disaster interventions even when they returned to normal life and were negatively impacted in psychological terms. Similarly, a meta-analysis study showed that health employees participating in earthquake interventions had relatively high risk of developing post-traumatic stress disorder both in the short and long term [36]. Nurses need more knowledge and skills about psychoemotional stress management and providing psychological support to survivors [5]. In a comprehensive review study, it emerged that nurses had low or moderate levels of being prepared for disasters in terms of knowledge and skill competence and attached less importance to psychological preparation [37]. In line with this, it is important that training related to disasters include topics related to self-care like psychological resilience and coping with stress.

### Strengths and limitations

The experiences conveyed by the participants in this study are related to a large-scale disaster and reflect the perspective of the situation in the most critical days of the disaster in terms of human life. Another strength of the study is that the research was conducted in the provinces that were primarily affected by the earthquake. The high level of participation from the participants allowed for in-depth data collection during the research process, which allowed for detailed and rich descriptions of the findings. This will allow healthcare professionals and researchers working in similar disaster situations to evaluate the relevance of the findings to their own contexts. However, the fact that the sample of participants was selected from a single province is a limitation of the study. Though rich information is presented in this study about the disaster experience through the eyes of nurses, the time difference between these experiences and the interviews may cause concern related to the complete transfer of memories.

### Recommendations for further research

In this study, the health care service provided by nurses in a large-scale disaster was evaluated from their own perspective. Future research can focus on how disaster victims who experienced a large-scale disaster evaluate the emergency care service they received. In addition, if research is allowed to evaluate the perspectives of other

health care professionals who experienced large-scale disasters in Türkiye, the goal of disaster victims receiving holistic care will be achieved.

### Implications for policy and practice

It is recommended that the nursing curriculum be enriched in terms of disaster and emergency nursing, and that theoretical knowledge on disaster nursing be transformed into skills using learning techniques such as simulation learning, field studies, role playing, and case discussions. As the next step, a comprehensive legal regulation should be made regarding the duties of nurses during disasters. When making legal arrangements, the results of studies conducted with groups that have experienced disasters should be taken into consideration.

### Conclusion

This study, completed with nurses who mostly were not professionally prepared for disasters, provided the opportunity to determine the thoughts of participants related to disaster preparedness, challenges encountered while coping with disasters and strategies that can be developed for full disaster preparedness. The research found nurses had to cope with many challenges due to individual and social, institutional, management and educational factors during disaster intervention.

In this study, for full preparedness for disaster, the need to develop a comprehensive training program about disasters, in addition to focusing on practices to increase emergency care skills, the lack of sufficient inclusion of emergency nursing practice in the undergraduate nursing syllabus, and the need to enrich the syllabus in terms of emergency patient care and relevant knowledge and skills training were emphasized. The findings support the need for nurses to take active roles in all stages of disasters, due to a variety of characteristics like being creative, adapting well, leadership skills, and ensuring communication and coordination in a multidisciplinary team. In conclusion, nursing leaders, health policy makers and governments should use these findings to better support nursing labor in disasters.

### Abbreviations

COREQ	Consolidated Criteria for Reporting Qualitative Studies
ICN	International Council of Nurses
CDC	Centers for Disease Control and Prevention
R&D	Research and Development

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### Author contributions

TÇ, AŞ and DK developed the research questions and conceptualized the work. TÇ and DK acquired the data. TÇ and AŞ analyzed the data and interpreted the findings and drafted the manuscript. DK, ES, and ÜK contributed to the interpretation of the findings and critically reviewed the manuscript for important intellectual content. All authors revised the manuscript. All authors read and approved the final manuscript.

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## Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

## Declarations

### Ethics approval and consent to participate

Permission for the research was obtained from the Ondokuz Mayıs University Social and Human Sciences Ethics Board (No: 2023 – 605). The data collection process abided by ethical principles. Nurses included in the study were given information about the study and provided written consent by signing the Informed Consent Form. Nurses were informed that participation in the study was voluntary, that they could interrupt the interview at any time if they felt unwell, and that they had the right to withdraw completely from the study at any time. However, no participants withdrew from the study. Participants were informed that all information obtained would be kept confidential. In line with this, printed copies of interview transcripts were numbered serially to protect anonymity and stored in secure cabinets that could only be accessed by the researcher. All digital data were kept on password-protected computers accessed by the researchers. The study was completed according to the ethical standards stated in the Helsinki Declaration. Participants were also guided to seek professional psychological support to effectively cope with the negative consequences of secondary trauma.

### Consent for publication

Not applicable.

### Competing interests

The authors declare no competing interests.

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## References

- Dinçer S, Kumru S. Preparedness situations of health personnel for disaster and emergencies. *Gümüşhane Univ J Health Sci*. 2021;10(1):32–43. <https://doi.org/10.37989/gumussagbil.790884>.
- Sever MS, Remuzzi G, Vanholder R. Disaster medicine and response: optimizing life-saving potential. *Am J Disaster Med*. 2018;13(4):253–64. <https://doi.org/10.5055/ajdm.2018.0305>.
- Labrague LJ, Hammad K. Disaster preparedness among nurses in disaster-prone countries: A systematic review. *Australasian Emerg Care*. 2024;27(2):88–96. <https://doi.org/10.1016/j.auec.2023.09.002>.
- Dos Santos PAF, Rabiais ICM, Frade JM, Coutinho VRD, Baptista RCN. General nurse competencies in disaster: A Delphi study. *Nurse Educ Pract*. 2024;79:104037. <https://doi.org/10.1016/j.nepr.2024.104037>.
- Kaya ŞŞ, Erdoğan EG. Being a nurse during an earthquake that affected ten provinces: A qualitative study on experiences and expectations. *Int Nurs Rev*. 2024;72(1):e13051. <https://doi.org/10.1111/inr.13051>.
- Afet ve Acil Durum Yönetimi Başkanlığı (AFAD). 06 Şubat 2023 Pazarcık-Elbistan Kahramanmaraş (Mw: 7.7 – Mw: 7.6) Depremleri raporu. [https://depr.em.afad.gov.tr/assets/pdf/Kahramanmara%C5%9F%20Depremi%20%20Raporu\\_02.06.2023.pdf](https://depr.em.afad.gov.tr/assets/pdf/Kahramanmara%C5%9F%20Depremi%20%20Raporu_02.06.2023.pdf). Accessed 24.09.2025.
- Avcı S, Bor NA, Kaplan B, İpekçi NN, Ortabağ T. Hemşirelerin Afet yönetimine ilişkin Uygulama becerileri algısı ölçeğinin Türkçe geçerlik ve güvenirliği çalışması. *Sağlık Akademisyenleri Dergisi*. 2025;12(2):240–52.
- Erdoğan Ö. Disaster nursing education. *Türkiye Clin Disaster Educ*. 2018;115–20.
- Taşkıran G, Baykal Ü. Disasters and nurses' preparedness for disasters in turkey: literature review. *J Health Nurs Manage*. 2017;2(4):79–88. <https://doi.org/10.5222/SHYD.2017.079>.
- International Council of Nurses. <https://www.icn.ch/resources/publications-and-reports/core-competencies-disaster-nursing-competencies-nurses-involved;2020>. Accessed 20.10.2024.
- Şimşek P, Gündüz A. Türkiye'de Afet hemşireliği. *Uludağ Üniversitesi Tıp Fakültesi Dergisi*. 2021;47(3):469–76. <https://doi.org/10.32708/uutfd.981301>.
- Arslan H, Çakır GN, Demirkan S, Baş Z. Yeni Bir eğitim modeli önerisi: Yeterlilik-bazlı modüler Afet hemşireliği eğitimi. *Afet Ve Risk Dergisi*. 2024;7(3):573–86. <https://doi.org/10.35341/afet.1322491>.
- Chegini Z, Arab-Zozani M, Kakemam E, Lotfi M, Nobakht A, Aziz Karkan H. Disaster preparedness and core competencies among emergency nurses: a cross-sectional study. *Nurs Open*. 2022;9(2):1294–302. <https://doi.org/10.1002/nop.21172>.
- Dönmez E. Afet Hemşireliği. *Sosyal Bilimler Ve Sağlık Bülteni*. 2023;7:22–7.
- Doğan SD, Tosunöz İK, Kaya P, Yurtseven Ş, Aydınli A. Being a nurse in turkey's disaster: A phenomenological study on post-earthquake experiences. *Int J Disaster Risk Reduct*. 2024;103:104346. <https://doi.org/10.1016/j.ijdrr.2024.104346>.
- Farokhzadian J, Mangolian Shahrabaki P, Farahmandnia H, Taskiran Eskici G, Soltani Goki F. Nurses' challenges for disaster response: a qualitative study. *BMC Emerg Med*. 2024;24(1):1. <https://doi.org/10.1186/s12873-023-00921-8>.
- Dehkordi AH, Tali SS, Gheshlagh RG. The experiences of Ira Nian nurses in critical events and natural disasters: a qualitative study. *Qualitative Rep*. 2021;26(9):2872–81. <https://doi.org/10.46743/2160-3715/2021.4682>.
- Moradi K, Abdi A, Valiee S, Rezaei SA. Nurses' experience of providing ethical care following an earthquake: a phenomenological study. *Nurs Ethics*. 2020;27(4):911–23. <https://doi.org/10.1177/0969733020907952>.
- Rezaei SA, Abdi A, Akbari F, Moradi K. Nurses' professional competences in providing care to the injured in earthquake: a qualitative study. *J Educ Health Promotion*. 2020;9:188. [https://doi.org/10.4103/jehp.jehp\\_214\\_20](https://doi.org/10.4103/jehp.jehp_214_20).
- Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care*. 2007;19(6):349–57. <https://doi.org/10.1093/intqhc/mzm042>.
- Colaizzi PF. Psychological research as the phenomenologist Viewsit. In: Ronald S, Valle, King M, editors. *Existential-phenomenological alternatives for psychology*. New York: Oxford University Press; 1978.
- Yıldırım A, Şimşek H. *Qualitative research methods in social sciences*. 11th Edition. Ankara: Seçkin Publishing. 2016:83–152.
- Xue CL, Shu YS, Hayter M, Lee A. Experiences of nurses involved in natural disaster relief: A meta-synthesis of qualitative literature. *J Clin Nurs*. 2020;29:4514–31.
- Rehman J, Sohaib O, Asif M, Pradhan B. Applying systems thinking to flood disaster management for a sustainable development. *Int J Disaster Risk Reduct*. 2019;36:101101. <https://doi.org/10.1016/j.ijdrr.2019.101101>.
- Ankan YA, Ankan U. Field investigation and evaluation of the earthquakes in Kahramanmaraş. *OneHealth Plus J*. 2024;2(1):43–53.
- Ozkaynar GK. A study on the implementation process of management functions in the disaster period: the case of Sivas Cumhuriyet university in the Kahramanmaraş earthquake. *Turkish Earthq Res J*. 2023;5(2):105–27. <https://doi.org/10.46464/tcad.1282726>.
- Al Thobait A. Overcoming challenges in nursing disaster preparedness and response: an umbrella review. *BMC Nurs*. 2024;23(1):562. <https://doi.org/10.1186/s12912-024-02226-y>.
- Abdi A, Vaisi-Raygani A, Najafi B, Saidi H, Moradi K. Reflecting on the challenges encountered by nurses at the great Kermanshah earthquake: a qualitative study. *BMC Nurs*. 2021;20(90):1–8. <https://doi.org/10.1186/s12912-021-00605-3>.
- Songwathana P, Timalisina R. Disaster preparedness among nurses of developing countries: an integrative review. *Int Emerg Nurs*. 2021;55:100955. <https://doi.org/10.1016/j.ienj.2020.100955>.
- Pourvakhshoori S, Khankeh HR, Mohammadi F. Emergency and disaster preparedness in nurses: a concept analysis. *J Holist Nurs Midwifery*. 2017;27(1):35–43.
- Park HY, Kim JS. Factors influencing disaster nursing core competencies of emergency nurses. *Appl Nurs Res*. 2017;37:1–5. <https://doi.org/10.1016/j.apnr.2017.06.004>.
- Mao X, Yang Q, Li X, Guo C, Wen X, et al. An illumination of the icn's core competencies in disaster nursing version 2.0: advanced nursing response to COVID-19 outbreak in China. *J Nurs Adm Manag*. 2021;29(39):412–20. <https://doi.org/10.1111/jonm.13195>.
- Hasan MK, Younos TB, Farid ZI. Nurses' knowledge, skills and preparedness for disaster management of a megapolis: implications for nursing disaster education. *Nurse Educ Today*. 2021;107(105122). <https://doi.org/10.1016/j.ne.2021.105122>.

34. Sançar B, Cüceler S, Özcanarlan N, Özcanarlan F. Determining the experiences, feelings and thoughts of nurses caring for earthquake victims: A qualitative study. *J Nursology*. 2024;27(1):38–46. <https://doi.org/10.17049/jnursology.1457909>.
35. Sato Y, Nozue K. Posttraumatic negative cognitions and nurses' mental health: one year after the great East Japan earthquake and nuclear accident in Fukushima. *Int J Disaster Risk Reduct*. 2023;89:103635. <https://doi.org/10.1016/j.ijdrr.2023.103635>.
36. Tahernejad S, Ghaffari S, Ariza-Montes A, Wesemann U, Farahmandnia H, Sahebi A. Post-traumatic stress disorder in medicalworkers involved in earthquake response: a systematic review and meta-analysis. *Heliyon*. 2023;9(1):e12794. <https://doi.org/10.1016/j.heliyon.2023.e12794>.
37. Said NB, Chiang VCL. The knowledge, skill competencies, and psychological preparedness of nurses for disasters: A systematic review. *Int Emerg Nurs*. 2020;48:100806. <https://doi.org/10.1016/j.ienj.2019.100806>.

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