



Crisis Management Experiences of Emergency Nurses in the Disaster of the Century: A Qualitative Study

Yüzyılın Afetinde Acil Klinik Hemşirelerinin Kriz Yönetimine İlişkin Deneyimleri: Niteliksel Bir Çalışma

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ABSTRACT

Objective: It is a matter of curiosity what kind of a crisis emergency department nurses experienced regarding patient care and what kind of a solution method they developed to cope with this crisis during the two major earthquakes in Turkey, which were called "the disaster of the century". The problems experienced during patient care in a major disaster and the solutions developed need to be known to take precautions against greater threats. The research aimed to determine the experiences of emergency department nurses regarding the crises encountered in the disaster of the century by investigating them in depth.

Methods: This is a qualitative study. It was conducted with 18 nurses working in the emergency department of the pilot hospital, which was the tertiary care center in the disaster of the century, using in-depth interviews, and a qualitative research method. The data was subjected to content analysis.

Results: As a result of content analysis, three main and five sub-themes were identified. The themes were: (1) problems related to safety, for patient and employee safety; (2) disruptions in patient care, teamwork, and support from other institutions; (3) psychosocial breakdown of emergency department nurses; burnout, anxiety, and helplessness.

Conclusion: According to the participants' statements, all necessary precautions were taken in terms of patient and staff safety, number of personnel, and material support to prevent serious crises during patient care. With the facilities available and offered, emergency clinic nurses took part in patient care in the emergency clinic for days without interruption. In the disaster of the century, it was determined that emergency clinic nurses were ready for patient care, but especially women experienced a complete psychosocial collapse.

Keywords: Crisis management; disasters, earthquakes, emergency, nursing

ÖZ

Amaç: Ülkede yaşanan ve "yüzyılın felaketi" olarak adlandırılan iki büyük depremde acil klinik hemşirelerinin hasta bakımı konusunda nasıl bir kriz yaşadıkları ve yaşanan krizde nasıl bir çözüm yöntemi geliştirdiği merak konusudur. Büyük afette hasta bakımı sırasında yaşanan sorunların ve geliştirilen çözüm önerilerinin yaşanacak daha büyük tehditlere karşı tedbir alabilmek için bilinmeye ihtiyacı vardır. Bu çalışma, acil klinik hemşirelerinin deprem felaketinde karşılaşılan krizler ve bu krizler ile nasıl baş ettiklerini derinlemesine belirlemeyi amaçladı.

Yöntem: Çalışma niteliksel tiptedir. Bu çalışma, Yüzyılın felaketinde pilot hastane olarak seçilen üçüncü basamak bir hastanede 18 acil klinik hemşiresi ile derinlemesine görüşme yöntemi kullanılarak yürütüldü. Veriler içerik analizine tabi tutuldu.

Bulgular: İçerik analizi sonucunda üç ana ve beş alt tema belirlendi. Ana temalar; (1) güvenlikle ilgili sorunlar; hasta ve çalışan güvenliği açısından, (2) hasta bakımında aksamalar; ekip çalışması ve diğer kurumların desteği, (3) acil servis hemşirelerinin psikososyal sorunları; tükenmişlik, kaygı ve çaresizlik.

Sonuç: Katılımcıların ifadelerine göre, hasta bakımı sırasında ciddi krizler yaşanmaması için hasta ve çalışan güvenliği, personel sayısı, malzeme desteği açısından gerekli tüm tedbirler alınmıştı. Mevcut ve sunulan imkanlar ile acil klinik hemşireleri günlerce kesintisiz olarak acil klinikte hasta bakımında yer aldı. Yüzyılın felaketinde acil klinik hemşirelerinin hasta bakımına hazır olduğu ancak, özellikle kadınların psikososyal yönden tam bir çöküş yaşadıkları belirlendi.

Anahtar Kelimeler: Afet, acil durum, deprem, hemşirelik, kriz yönetimi

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Introduction

Disasters have been occurring on Earth for centuries and cause injuries and deaths in all living things in nature and even serious material losses in societies (Tas et al., 2020). According to the World Health Organization, earthquakes, which are one of the disasters, disrupt the comfort zone with physiological and psychological losses, threaten life, and cause a sense of inadequacy in individuals by developing suddenly (Akpınar and Ceran 2020; Tas and Cakir, 2022).

On February 6, 2023, two major earthquakes [Mw7.7 (focal depth=8.6 km) at 04:17 and Mw7.6 (focal depth=7 km) at 13:24] occurred in Turkey, affecting 11 provinces. As a result of this disaster and numerous aftershocks, more than 50,000 people lost their lives, and 51.581 people were injured (The Republic of Turkey Disaster and Emergency Management Presidency, 2023). Forty-two hospitals in the region were heavily damaged, and 94 hospitals were determined to be slightly damaged (The Republic of Turkey, Presidency of Strategy and Budget, 2023), and the injured were referred to emergency departments (EDs) in nearby provinces or provinces less affected by the earthquake.

Unwanted events can be experienced frequently in the ED environment where circulation is fast. In these departments, physiological and psychological care is provided to the injured in disaster situations such as earthquakes (James and Gilliland, 2012; Buljac-Samardzic et al., 2020; Clopton and Hyrkäs 2020; Afaya et al., 2021). In case of a disaster, it is inevitable that crises related to patient care in EDs will occur (Aykan et al., 2022). Crises disrupt the well-being of an individual or an organization, threaten an individual's life, disrupt the organization's functioning, and cause undesirable events and consequences (Afaya et al., 2021). When a crisis occurs, knowledge by itself is not enough to solve it (Coombs 2020). ED nurses should have the knowledge and technical equipment to recognize, prevent or solve active crises in case of disaster (Murphy et al., 2021). In the crisis management process, plans and measures should be strengthened to prevent or minimize losses or damages (Coombs, 2020). With the regulation on the Implementation of Hospital Disaster and Emergency Plans (HAP) in the country, hospitals are required to make plans and necessary preparations to ensure that they are self-sufficient without any assistance from outside the hospital for the first 72 hours after the disaster. With this regulation, obligations are also given to nurses (especially managers, operating room, intensive

care, and emergency clinic staff) (Hospital Disaster and Emergency Plans Implementation Regulation, 2015). The International Council of Nurses (ICN) emphasizes that all nurses should have the knowledge and skills to prepare, plan, and execute patient care and disaster intervention (Loke et al., 2021). Nurses are one of the most important human resources in disasters and have roles such as disaster preparedness, participation in disaster management, effective patient management, and appropriate interventions (Taşkıran and Baykal, 2021). Therefore, it is very important that ED nurses who provide patient care services are ready for disasters and can manage the crisis that may occur (Akpınar and Ceran 2020). It was reported that 67% of nurses in Turkey are "partially prepared" for disasters (Tas et al., 2020). In previous studies, it has been reported that nurses' feeling ready for disasters and being knowledgeable and experienced are significantly related to their ability to manage the crisis in case of disaster (Younis et al., 2020; Sultan et al., 2020; Kang et al., 2023). Many studies have tried to improve the competence of ED nurses in combating disasters through education (Amberson et al., 2020; Loke et al., 2021; Sultan et al., 2020). These descriptive studies do not describe what ED nurses experience during disaster patient care. On the other hand, it was found that having experienced disasters before significantly affected disaster preparedness in nurses (Tas et al., 2020). Hence, there was a need to know the efforts of ED nurses to manage the crisis during patient care in the disaster of the century. Considering this information, this research addresses the problems experienced by ED nurses in patient care during the earthquake disaster, how they solved the problems and how they felt themselves in the process. The research aimed to determine the experiences of emergency department nurses regarding the crises encountered in the disaster of the century by investigating them in depth.

Methods

Design

The study was conducted according to Colaizzi's descriptive qualitative method (Morrow et al., 2015). The process was carried out independently by 2 researchers (by both authors).

Setting and Participants

The present study was conducted between 01.06.2023-09.06.2023 in the ED of a tertiary public hospital with a bed capacity of 1,550, located in the southern region of Turkey. In the provinces where the earthquake disaster occurred, hospitals suffered

minor, moderate, and heavy damage or collapsed. Most of the health personnel working in these health institutions lost their lives or were injured due to the collapse. It is known that non-injured health personnel or earthquake victims lost up to 50 of their relatives. Health workers in these 11 provinces were severely affected emotionally, cognitively, and physically. The Republic of Turkey Ministry of Health has chosen Adana City Training and Research Hospital, the closest and least damaged hospital, as a pilot hospital for the care of patients trapped under rubble or injured for any reason. This public hospital responded to all earthquake victims from the surrounding provinces during the earthquake and served as the upper center for patient referral afterward. During the one week of the earthquake (06.02.2023-12.02.2023), there were 1,000 patient admissions per day by air (ambulance helicopter) and road (ambulance).

In Adana City Training and Research Hospital, there were nine units (triage, yellow and green injection unit, observation 4-5-6, resuscitation, trauma intervention, plaster room, trauma unit) and a total of 71 nurses (25 in day shift and 25 in night shift/one day), five midwives and, ten emergency medical technician. For participation in the study, the study's purpose, scope, and duration were discussed with the nurse in charge of the ED. Information about the research was announced to the group via WhatsApp. Nurses who were thought to be familiar with emergency clinic functioning had at least two years of experience, were actively involved in the post-earthquake period, and volunteered to participate were included in the study. Emergency clinic nurses who were on leave for various reasons in the post-earthquake period (their houses were damaged, they were reported for health reasons) and emergency clinic nurses who had just started working in the clinic were not included. The nurse in charge prepared a suitable and calm environment in the clinic so that the interviews would not be interrupted. Nurses who met the inclusion criteria and had low clinical intensity were invited to the interview. Prior to the interview, the participants were informed about the research and told that audio recordings would be taken during the interviews, and verbal and written permission was obtained from the participants. Data saturation was reached with 18 ED nurses who were interviewed through purposive sampling (Polit and Beck 2008), and no participants were excluded from the study.

Data Collection

The questions of the questionnaire form used for data collection were obtained by reviewing the literature (Apornak et al., 2020; Hammad et al., 2017; Said and Chiang 2020; Taşkıran and Baykal, 2019). There were two sections in the questionnaire form: "Personal Characteristics Form" and "Semi-structured Interview Form". In the Personal Characteristics Form, a total of five questions were asked about the participants' age, gender, graduation status, years, and hours of employment. In the Semi-Structured Interview Form, ED nurses were asked six questions in total: "Can you tell us about the most important event that you had difficulty in patient care during the earthquake?", "What kind of solution did you develop for the problems you experienced during patient care?", "How did you feel in the face of these events you experienced while working?", "What kind of support did you receive from your friends, management, and colleagues?", "How was your private life affected in this process, and what did you experience?" and "What did this process bring you?". To evaluate whether the data collection tool's questions were appropriate, the opinions of five researchers (four academic nurses who completed their doctorate and have studies related to ED and one ED physician) were taken apart from the author.

Therapeutic communication techniques were used during the interview, participants were encouraged and motivated to speak freely. While one researcher took notes, the other researcher recorded the interview and asked questions according to the flow of the interview. Interviews lasted 30-55 minutes on average, and we tried not to exclude any findings reported during the interview.

Data Analysis

Audio recordings and notes were combined, and the interviews were transcribed verbatim into written text. The text was re-read by the participant, and confirmation was obtained. The audio recording and notes taken were transcribed. The interviews were independently transcribed verbatim (pseudonyms were assigned) by two researchers (by both authors) within 24 hours after the interviews. The researcher repeatedly evaluated the documents created and turned into a report. The report was content analyzed in line with Colaizzi's descriptive phenomenological method (familiarisation, identifying, formulating meanings, clustering themes, developing an exhaustive description, producing the fundamental structure and, seeking verification of the fundamental structure) (Morrow

et al., 2015). Accordingly, in the first step of the analysis, the report was read repeatedly, and patterns were revealed. Using MAXQDA, the researchers coded similar patterns involving the same keywords, metaphors or transitions and classified all codes. Analyses were conducted independently by the researchers. Finally, all codes were reviewed and summarized, and themes and subthemes were identified (Table 1) (Marshall and Rossman, 2014).

Three main and five sub-themes were created with codes that had similar content (Figure 1). To ensure accuracy and to avoid inconsistencies, two senior researchers (academic nurses with qualitative research and having higher seniority than the authors) were invited to discuss the findings of the data content analysis in a final step. To achieve reliability, transcriptions were revisited and discussed when necessary. To validate the coding process, transcriptions, codes, categories, and subcategories were confirmed by the authors and invited researchers. Furthermore, to verify the reliability of the data, the codes were also given to and approved by the three invited participants in the study. The Consolidated Criteria for Reporting Qualitative Research was used as a guide for reporting study findings (Albury et al., 2021).

Trustworthiness

Lincoln and Guba's (1986) four criteria (credibility, transferability, dependability, confirmability) were used to ensure reliability in qualitative research. The researcher re-read the report to the participants to increase the accuracy of the report created after the in-depth interviews, and the authors and invited researchers approved the content analysis. To increase the transferability of the research findings, literature support was sought in codes, sub-themes, and themes.

Ethical Considerations

The research was approved by a local university ethics commission (Protocol No: 01/04/ Date: 30.03.2023), and written institutional permission (Date: 31.05.2023) was obtained from Adana City Training and Research Hospital where the research was conducted. Before the interview, signed informed consent was obtained from the participants on a voluntary basis. The study was conducted in accordance with the principles of the Declaration of Helsinki (WMA General Assembly, Fortaleza, Brazil, October 2013) and the Law on Medical Research Involving Human Subjects. During data collection, participants were assigned numbers to protect confidentiality and privacy.

Results

The mean age of the participants was 35.9 ± 8.6 years (minimum 24 - maximum 52), only four of them were male, two of them had a master's degree, and they had been working in the ED for a mean of 10.3 ± 7.4 years (minimum 2 - maximum 28 years). During the week of the earthquake, the participants worked 48 hours without interruption, while the nurse in charge and a few nurses worked in the ED for a week without interruption. All participants reported that they predicted the problems that might occur during patient care and took all necessary precautions in advance. Based on the findings obtained from the content analysis conducted in line with the interviews, three main and five sub-themes were identified as "problems related to safety", "disruptions in patient care", and "psychosocial breakdown of ED nurses" (Figure 1).

Main themes 1. Problems related to safety

Participants stated they received many applications to the emergency clinic in the first week after the earthquake. They stated that the patients admitted were naked and most of them did not have their ID cards on them. Participants explained that most patients were unconscious or some of them could not remember anything because they were still in shock. All of the participants stated that they did not have time to watch the news and that they wanted to work without stopping for a second to provide care to the incoming patients. The emergency clinic nurses understood the magnitude of the earthquake disaster from the patients arriving. In a major disaster, the uncertain identity of the patients and the uninterrupted work (without rest after work) of the ED staff could have created a crisis. For these anticipated crises, the nurse in charge of the ED had taken all measures to ensure safe patient identification, perform the observational examination, administer the necessary treatment with the physician's directive, monitor the side effects of the treatment, and transfer or refer the patient to the clinic appropriately. The nurse in charge of the ED had organized shifts of two to four hours to prevent staff errors and meet ED nurses' basic needs (sleep, food, etc.). This main theme identified two sub-themes related to patient and employee safety.

Sub-themes 1.1 Problems related to patient safety

For patient registration and identification, the names of patients who could speak were first affixed to the chest with a plaster, and then the wristband was brought to the unit and attached to the arm of

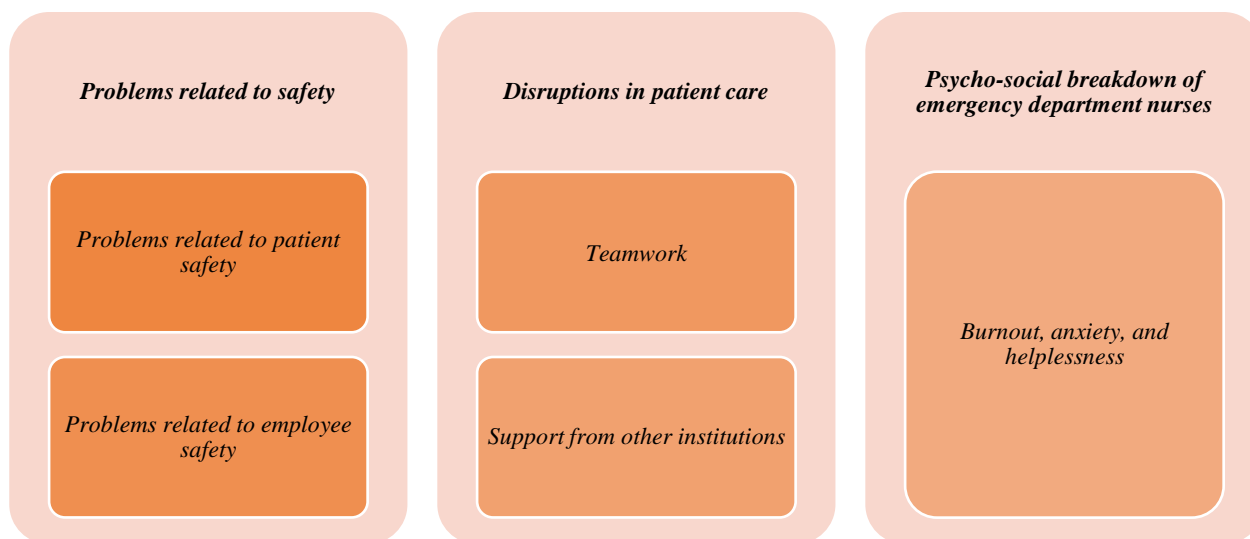


Figure 1. Main and sub-theme

Table 1. Example from data analysis

Meaning units	Codes	Subthemes	Themes
“...there was news that the identity information of missing children of earthquake victims was shared on social media. I also shared this information to prevent the possibility of child abduction.”	Difficulty in follow-up due to the intensity during patient care	Problems related to patient safety	Problems related to safety
“Normally, there would have been many problems with materials during the work, however, during the earthquake, there were many materials everywhere and easily accessible.”	Lack of supplies during patient care	Teamwork	Disruptions in patient care
“...even FHC (Primary Health Care Center) physicians examined patients...”	Staff shortage during patient care	Support from other institutions	Disruptions in patient care
“It’s been months, and I feel bad telling you about it. ...Even thinking about those moments makes me sad.”	Burnout	Burnout, anxiety, and helplessness	Psychosocial breakdown of ED nurses

FHC: Family Health Care Center

the patients. The records were opened for patients who could not speak as "unidentified 1, 2, 3...". Patients were examined individually with the support team from other units and institutions. Both the security team and the volunteer team accompanied orphaned children. While waiting for the appropriate treatment to be ordered, large serums were kept ready with the support team and used as soon as possible (maximum one hour). All earthquake victims registered in the ED were vaccinated against tetanus. The name registered on the wristband was written on the tubes containing

the blood taken for necessary tests and examinations and the tubes were attached to the patient stretcher with a plaster. The patient was accompanied by a member of the health care team for transfer to the clinic or another institution.

“We couldn't see the patients. It was not possible to see the patient a second time. The maximum time we could see each patient was five minutes. It was not clear what problems the patients had. We were very coordinated within the team.” P.4

Only one of the participants mentioned a lack of coordination in referrals between clinics. He

explained that on a few occasions, patients went up to the clinic and came back down due to the opposing views of physicians in the decision-making process of their hospitalization.

Sub-themes 1.2. Problems related to employee safety

The ED nurses were exhausted from the disaster of the century, as food, water, nutrition, and proper necessities were not provided while non-stop work continued. Rest breaks were organized for two to four hours, rotating among the staff. Meals from neighboring restaurants were sent to the ED staff at their units.

"We didn't sleep or rest for four days. Nobody asked me to work, I worked voluntarily. The only thing that mattered to me was if I could save one more patient. I was asked to be sent home, but I didn't go. I even ate dinner standing up. There was blood everywhere. ...My only concern was not to lose any more patients. I would do the same today. As long as there is a timely intervention." P.4

Main themes 2. Disruptions in patient care

In the earthquake disaster that affected eleven provinces and injured thousands of people, one of the most important crises was the inability to keep up with patient care due to the high number of patients or to miss critically ill patients. To prevent this, internal and external health personnel came to the ED to help with patient care. Another important crisis was the lack of sufficient supplies during patient care. All the supplies in the warehouse and clinic were transferred to the ED by medical staff.

Sub-themes 2.1. Teamwork

In this sub-theme, all participants emphasized the importance of teamwork. The nurse in charge of the ED did not leave there for a week to anticipate possible crises related to patient care and take necessary measures. Almost all 71 nurses (excluding those on leave due to special circumstances) were gathered in the ED on the morning of the earthquake. A meeting was held with about 40 nurses to ensure quality nursing care services, and nurses were regularly visited one by one in their units. A total of 88 physicians, 30 specialists, and 58 assistants were also present at the ED to order the necessary diagnostic tests and treatment for the patients. A Hospital Disaster and Emergency Plan was made in cooperation with physicians, nurses, and management. While some of the participants (seven people) continued their 48-hour shifts without interruption, some of them (six people) worked for three to four days without

interruption, and the nurse in charge (one person) did not leave the ED for a week. None of the participants was able to use social media tools, so they could not understand how serious the natural disaster was in the first two days, but they stated that the disaster was too great from the condition of the patients who arrived.

"Words cannot describe the crowd and the situation when I entered the emergency clinic at 04.17 on the morning of the earthquake." P.12

"We were like a chicken with its head cut off there were a lot of people bringing food and clothes for the earthquake victims (most of the patients were wearing very thin pajamas because the earthquake happened at night, or the patient's clothes were torn because they were under rubble, so the patients were naked). People were very sensitive, and the atmosphere was very friendly..." P.14

Sub-themes 2.2. Support from other institutions

The day after the earthquake, volunteer health workers from neighboring provinces or the Red Crescent team of the province came to help. The volunteer team was guided by the nurse in charge, and the work was allocated. Since this team was unfamiliar with the clinical environment, they were assigned to positions such as carrying, unloading or lifting materials, patient transfers, accompanying the patient or preparing serum treatment (saline and 5% dextrose fluid treatment applied due to the long-term hunger of earthquake survivors under the rubble.). All participants stated they were more prepared for disaster situations for the next period.

"...we did not have any problems in obtaining materials. We normally experience the most material shortage in the chest tube opening set, but the nurse of the clinic downloaded all the sets in her warehouse to the emergency room with her..." P.2

"...from the second-third day, health personnel from neighboring provinces started coming to help and we started to be sent home to rest..." P.13

Main theme 3. Psychosocial breakdown of ED nurses

The hospital where the study was conducted was in one of 11 provinces, but material damage was almost negligible compared to other provinces. The earthquake was still ongoing and felt in the province with the aftershocks. ED nurses had first taken their families to a safe place so as not to worry about them. Afterwards, they said they could not even answer their phones, and their priority was to care for more patients. Male emergency clinic nurses stated that they were not affected much by what

happened, while female emergency clinic nurses stated that the efforts to prevent the crisis and the dramatic events created psychosocial problems such as burnout, anxiety, and helplessness. During the earthquake, all participants stated that the hospital administration did not provide psychosocial support.

Sub-themes 3.1. Burnout, anxiety, and helplessness

More than half of the participants (11 people) said that they cried for days, experienced severe burnout, their anxiety levels increased significantly, and felt helpless due to the unending number of cases received due to the earthquake. On the other hand, male participants stated that they were not emotionally affected by the situation, but they were worried about their family members staying at home.

"...I am a mother. A mother and baby (trapped under rubble), who were wrapped together for four days, came. The baby was dead. The mother smelled like a dead body.

I couldn't bear it and cried for days, I am still incredibly affected. Maybe I was more affected because I am a mother." P.3

"I hope we will never live those days again. We had Corona, where one or two patients died at the same time. In this disaster, 6-7 patients died at once. Despair and exhaustion are all I remember..." P.7

"I don't have a mother or father; I know what it feels like to be orphaned (the earthquake victims were orphans). For the first time in my life, I prayed because I had no parents." K.9

"I had no private life in those days my husband would normally be very angry at my frequent shifts. He never even asked me where I was. He wanted me to be there (ED) and do what was necessary." P.7

All participants stated they received full support from nurses, colleagues, and their families during the earthquake. They explained that they had no problems in their private lives during this process and focused only on patient care.

Discussion

This qualitative study investigated the crises experienced by ED nurses regarding patient care during the disaster of the century (Turkey's two major earthquakes of February 2023 and aftershocks). In this qualitative study, three main themes and five sub-themes were determined: "problems related to safety (measures related to patient safety and employee safety)", "disruptions in patient care (teamwork, support from other institutions)", and "psychosocial breakdown of ED

nurses (burnout, anxiety, and helplessness)". All of the participants said that they had never experienced two such major earthquakes before, and they could not forget what they had experienced in any way, and they did not even want to remember these situations. In this recent major disaster, many situations that could have created a crisis in the ED were anticipated and resolved before they turned into a crisis.

It was emphasized that crisis management in EDs should include high communication skills, accurate planning, and the ability to make quick decisions and manage the process (Rowland et al., 2021, 1-9). In Tehran, it was reported that ED nurses performed incomplete registration and inadequate triage due to fatigue (Afaya et al., 2021). In disaster-induced crises, familiarity with disasters, scientific knowledge and experience, and competence in professional skills are necessary to fulfill professional legal responsibilities with accurate recording and reporting (Aliakbari et al., 2022). To fulfill these responsibilities, ED nurses took all necessary precautions with the available facilities and performed patient care as described in the research findings. ED nurses who provided complete and error-free patient care continued to work by ignoring their basic needs and social lives.

In the current study, ED nurses stated that the number of staff and supplies in the ED increased. Provision of material support, appropriate use of resources, and assignment of personnel duties have been addressed as the priority problems of EDs in previous studies (Apornak et al., 2020; Leeftink et al., 2020). Crisis intervention requires close cooperation between the ED team and inter-team coordination (Zhang et al., 2020). The insufficient number of nurses and insufficient supplies in EDs can create a crisis and even turn the crisis into chaos (Savioli et al., 2022). In the present study, ED nurses provided 48 hours or more of uninterrupted nursing service and provided ED functioning and coordination together with volunteer nurses. In the ED, which has 2000 (ambulances and outpatient admissions) per day, many nursing care services, such as wearing patient wristbands and keeping records, patient triage and transportation, and administering treatment, can be provided without experiencing a crisis. All participants stated that they were more prepared for disaster situations for the next period. Post-disaster readiness levels were reported to increase significantly more than before the disaster (Tas et al., 2020). Moreover, it has been reported that Chinese nurses (Said and Chiang,

2020) and nurse candidates in different countries are not sufficiently prepared for disasters and training on disasters should be planned (Longo, 2022). Although especially male participants stated that this situation was expected due to the geographical conditions of Turkey and they were not affected much psychosocially, it was reported that gender did not affect readiness against disasters (Taş et al., 2020).

Uninterrupted work and the chaos they experienced led ED nurses to a psychological breakdown. A study with 139 nurses from the earthquake region emphasized that nurses working in the disaster area should first be experienced in nursing practices and have a good psychological mood (Said and Chiang, 2020). In ED chaos, nurses' emotional and mental health may deteriorate, they experience stress and burnout, and this may even cause ED nurses to quit their jobs (Rowland et al., 2021). In the present study, the women nurses emphasized that they experienced severe anxiety, burnout, and helplessness, and all of the ED nurses participating in the study stated that they did not receive psychosocial support in this process. In disasters, nurses have a key role in providing the necessary psychological support to patients and maintaining quality and safe patient care (Al Harthi et al., 2020; Brewer et al., 2022; Jun et al., 2021).

Conclusion

In this study, ED nurses who experienced the earthquake disaster had very good crisis management regarding patient care, but they experienced serious psychological difficulties while coping with inhumane conditions. This situation led to an increase in psychological problems such as severe burnout and anxiety. Teamwork, support from other organizations, and safety measures for patients and staff helped to make the process easier. ED nurses did their best to help the earthquake victims regardless of the conditions. The findings of the study showed how ED nurses can help deal with disasters and cope with crises. The disaster in the country is a possible situation that can be seen in many parts of the world. This study, which is a guide for emergency and disaster nurses, makes a great contribution to the literature. The study provides important information on how ED nurses can provide care in case of a disaster without allowing a crisis in patient care. The study observed that ED nurses managed the process successfully by providing fast and quality care without sleeping or

resting, good coordination, and effective task sharing.

Limitations

The findings of this study, which tries to understand in depth what emergency clinic nurses experienced during the great disaster, are limited to the participants' statements. Another limitation is that the study was conducted in only one institution.

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Ethics Committee Approval: The research was approved by Yozgat Bozok University Ethics Commission (Protocol No: 01/04/ Date: 30.03.2023).

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What did the study add to the literature?

- This study investigated the experiences of emergency department nurses in patient care during the disaster of the century and what they did to prevent crises.
- The study revealed the security threat to patients and staff, the efforts to prevent disruptions in patient care, and the psychosocial problems experienced by emergency clinic nurses during a major natural disaster.
- This study observes what happened in the disaster of the century, and will shed light on many nurses in the field. Emergency department nurses need psychological support.

References

- Afaya A, Bam V, Azongo TB, Afaya RA., Yakong VN, Kpodo GK., ... & Adatarara P. (2021). "We are left with nothing to work with"; challenges of nurses working in the emergency unit at a secondary referral hospital: A descriptive qualitative study." *Plos one*, 16(2), e0247062. <https://doi.org/10.1371/journal.pone.0247062>
- Akpınar NB, Ceran M. (2020). Current approaches to disasters and the roles and responsibilities of disaster

- nurses. *Journal of Paramedic and Emergency Health Services*. 1(1), 28-40.
- Albury C, Pope C, Shaw S, Greenhalgh T, Ziebland S, Martin S, ... & Pilbeam C. (2021). Gender in the consolidated criteria for reporting qualitative research (COREQ) checklist. *International Journal of Quality in Health Care*. 33(4), mzab123. <https://doi.org/10.1093/intqhc/mzab123>
- Al Harthi M, Al Thobaity A, Al Ahmari W, Almalki M. (2020). Challenges for nurses in disaster management: a scoping review. *Risk Management Healthcare Policy*, 2627-34. <http://doi.org/10.2147/RMHP.S279513>
- Aliakbari F, Heidari M, Moezzi M. (2022). Designing a disaster training program and examining its impact on the level of competence of nursing students. *Disaster and Emergency Medicine Journal*, 7(3), 142-9. <https://doi.org/10.5603/DEMJ.a2022.0023>
- Amberson T, Wells C, Gossman S. (2020). Increasing disaster preparedness in emergency nurses: a quality improvement initiative. *Journal of Emergency Nursing*, 46(5), 654-65. <https://doi.org/10.1016/j.jen.2020.05.001>
- Apornak A, Raissi S, Keramati A, Khalili-Damghani K. (2020). Optimisation nursing employees in a hospital emergency department by using linear programming. *International Journal of Management Concepts and Philosophy*, 13(3), 184-95. <https://doi.org/10.1504/IJMCP.2020.111026>
- Aykan EB, Fidancı BE, Yıldız D. (2022). "Assessment of nurses' preparedness for disasters." *Int J Disaster Risk Reduct*, 68, 102721, 1-8 <https://doi.org/10.1016/j.ijdrr.2021.102721>
- Buljac-Samardzic M, Doekhie KD, van Wijngaarden JD. (2020). Interventions to improve team effectiveness within health care: a systematic review of the past decade. *Human Resources for Health*, 18(1), 1-42. <https://doi.org/10.1186/s12960-019-0411-3>
- Brewer CA, Ranse J, Hammad K, Hutton A. (2022). Experiences of rural and remote nurses during and following disasters: a scoping review. *Rural and Remote Health*, 22(4), 1, 12. <https://doi.org/10.22605/RRH7230>
- Coombs WT. (2020). Crisis management and communications. *Institute for Public Relations*, 4(5), 6. Accessed May 20, 2023. <https://instituteforpr.org/wp-content/uploads/Crisis-Comms2-Revised2020.pdf>
- Clopton EL, Hyrkäs EK. (2020). Modeling emergency department nursing workload in real time: An exploratory study. *International Emergency Nursing*, 48, 100793, 1-9. <https://doi.org/10.1016/j.ienj.2019.100793>
- Hammad KS, Arbon P, Gebbie K, Hutton A. (2017). Moments of disaster response in the emergency department (ED). *Aust Emerg Nurs J*, 20(4), 181-185. <https://doi.org/10.1016/j.aenj.2017.10.002>
- Hospital Disaster and Emergency Plans Implementation Regulation (2015). T.R. Official Gazette, 29301, Accessed Jan 14, 2024. <https://www.resmigazete.gov.tr/eskiler/2020/03/20200318-2.htm>
- James R, Gilliland B. "Crisis intervention strategies." 2012. Belmont, CA: Cengage Learning. Accessed May 15, 2023. https://books.google.com.tr/books/about/Crisis_Intervention_Strategies.html?id=d5V4CgAAQBAJ&redir_esc=y
- Jun J, Ojemeni MM, Kalamani R, Tong J, Crecelius ML. (2021). Relationship between nurse burnout, patient and organizational outcomes: Systematic review. *Int J Nurs Stud*. 119, 103933. <https://doi.org/10.1016/j.ijnurstu.2021.103933>
- Kang JS, Lee H, Seo JM. (2023). Relationship between nursing students' awareness of disaster, preparedness for disaster, willingness to participate in disaster response, and disaster nursing competency. *Disaster Medicine and Public Health Preparedness*, 17 e220. <https://doi.org/10.1017/dmp.2022.198>
- Lincoln YS, & Guba EG. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Dir Program Eval*, (30), 73-84. <https://doi.org/10.1002/ev.1427>
- Loke AY, Guo C, Molassiotis A. (2021). Development of disaster nursing education and training programs in the past 20 years (2000–2019): A systematic review. *Nurse Education Today*, 99, 104809, 1-19. <https://doi.org/10.1016/j.nedt.2021.104809>
- Loke AY, Li S, Guo C. (2021). Mapping a postgraduate curriculum in disaster nursing with the International Council of Nursing's Core Competencies in Disaster Nursing V2. 0: the extent of the program in addressing the core competencies. *Nurse education today*, 106, 105063. <https://doi.org/10.1016/j.nedt.2021.105063>
- Longo BM. (2022). "Earthquake preparedness and knowledge of recommended self-protective actions: A survey of nursing students." *Disaster Medicine and Public Health Preparedness*, 16(2), 495-499. <https://doi.org/10.1017/dmp.2020.422>
- Marshall C, Rossman GB. (2014). *Designing qualitative research*. Sage publications.
- Morrow R, Rodriguez A, King N. (2015). Colaizzi's descriptive phenomenological method. *The Psychologist*, 28(8), 643-644.
- Murphy JP, Kurland L, Rådestad M, Magnusson S, Ringqvist T, Rüter A. (2021). "Emergency department registered nurses overestimate their disaster competency: A cross-sectional study. *International Emergency Nursing*, 58, 101019. <https://doi.org/10.1016/j.ienj.2021.101019>
- Polit DF, Beck CT. (2008). *Nursing research: Generating and assessing evidence for nursing practice*. Lippincott Williams & Wilkins.
- Rowland M, Adefuye AO, Vincent-Lambert C. (2021). The need for purposeful teaching, learning and assessment of crisis resource management principles and practices in the undergraduate pre-hospital

- emergency care curriculum: A narrative literature review. *Australasian Journal of Paramedicine*, 18, 1-9. <https://doi.org/10.33151/ajp.18.820>
- Said NB, Chiang VC. (2020). The knowledge, skill competencies, and psychological preparedness of nurses for disasters: a systematic review. *International Emergency Nursing*, 48, 100806, 1-9. <https://doi.org/10.1016/j.ienj.2019.100806>
- Savioli G, Ceresa IF, Gri N, Bavestrello Piccini G, Longhitano Y, Zanza C, & Bressan MA. (2022). Emergency department overcrowding: understanding the factors to find corresponding solutions. *Journal of Personalised Medicine*, 12(2), 279. <https://doi.org/10.3390/jpm12020279>
- Sultan MAS, Løwe Sørensen J, Carlström E, Mortelmans L, Khorram-Manesh A. (2020). "Emergency healthcare providers' perceptions of preparedness and willingness to work during disasters and public health emergencies. In *Healthcare* 8(4), 442. <https://doi.org/10.3390/healthcare8040442>
- Tas F, Cakir M. (2022). Nurses' knowledge levels and preparedness for disasters: A systematic review. *International Journal of Disaster Risk Reduction*, 103230, 1-10. <https://doi.org/10.1016/j.ijdrr.2022.103230>
- Tas F, Cakir M, Kadioglu S. (2020). "Identification of the preparedness level of nurses for disasters in Turkey: A university hospital example. *International Journal of Disaster Risk Reduction*, 44, 101441, 1-9. <https://doi.org/10.1016/j.ijdrr.2019.101441>
- Taşkıran G, Baykal Ü. (2017). Disasters and nurses' preparedness for disasters in Turkey: Literature review. *Journal of Health and Nursing Management*, 4(2), 79-88. <https://doi.org/10.5222/SHYD.2017.079>
- Taşkıran G, Baykal U. (2019). Nurses' disaster preparedness and core competencies in Turkey: a descriptive correlational design. *International Nursing Review*, 66(2), 165-175.
- The Republic of Turkey Disaster and Emergency Management Presidency. Accessed May 15, 2023. https://deprem.afad.gov.tr/assets/pdf/Kahramanmara_s%20%20Depremleri_%20On%20Degerlendirme%20Raporu.pdf
- The Republic of Turkey, Presidency of Strategy and Budget. Accessed May 15, 2023. <https://www.sbb.gov.tr/wp-content/uploads/2023/03/2023-Kahramanmaras-ve-Hatay-Depremleri-Raporu.pdf>
- Younis NM, Ahmed MM, Hussein AA. (2020). Nurses' knowledge, attitude and practice towards preparedness of disaster management in emergency of mosul teaching hospitals. *Medico-Legal Update*, 20(3), 775-779.
- Zhang Z, Brazil J, Ozkaynak M, Desanto K. (2020). Evaluative research of technologies for prehospital communication and coordination: a systematic review. *Journal of Medical Systems*, 44, 1-14. <https://doi.org/10.1007/s10916-020-01556-z>