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Traumatic Stress and Coping Experiences of Health Professionals Working in Earthquake Zones: A Phenomenological Study

Deprem Bölgelerinde Çalışan Sağlık Profesyonellerinin Travmatik Stres ve Başa Çıkma Deneyimleri: Fenomenolojik Bir Çalışma

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ABSTRACT

Objective: This study aimed to examine the traumatic stress and coping strategies of healthcare professionals who provided services during the earthquakes in Kahramanmaraş on February 6, employing a phenomenological approach.

Method: The study, which utilized the phenomenological method, involved conducting semi-structured in-depth interviews face-to-face with 20 healthcare professionals who provided services during the February 6 Kahramanmaraş earthquakes. Researchers used the snowball sampling technique to recruit participants and continued interviews until no new information emerged. Researchers recorded and transcribed all interviews for analysis. They applied thematic analysis to the data, ensuring the study aligned with the COREQ checklist for reporting.

Results: The data analysis revealed three main themes (thoughts and feelings about healthcare provision, the effects of the earthquake, and traumatic stress and coping experiences) along with eight sub-themes: thoughts, feelings, mental, physical, social, traumatic stress, effects, and coping.

Conclusion: Healthcare professionals who provided services during the February 6 Kahramanmaraş earthquakes experienced significant psychosocial effects from the traumatic stress they faced. They encountered substantial difficulties in managing these stressors. The study advocates for implementing necessary measures and support systems to help healthcare professionals effectively cope with stress in disaster situations.

Keywords: Türkiye, Kahramanmaraş earthquake, healthcare professionals, qualitative research

ÖZ

Amaç: Bu çalışmanın amacı, 6 Şubat Kahramanmaraş merkezli depremlerde sağlık bakım hizmeti sunan sağlık profesyonellerinde travmatik stres ve başa çıkma deneyimlerini fenomonolojik bir yaklaşımla değerlendirmektir.

Yöntem: Fenomonolojik araştırma yönteminin kullanıldığı bu çalışmada, 6 Şubat Kahramanmaraş merkezli depremlerde sağlık bakım hizmeti sunan 20 sağlık profesyoneli ile yarı yapılandırılmış derinlemesine görüşmeler yüz yüze gerçekleştirilmiştir. Örneklem grubuna ulaşmak amacıyla kartopu örnekleme yöntemi kullanılmıştır. Veri doygunluğu sağlanana kadar görüşmelere devam edilmiştir. Görüşmeler ses kayıt cihazıyla kaydedilmiş ve sonrasında transkribe edilmiştir. Araştırma verileri tematik analiz yöntemiyle incelenmiştir. Çalışma, COREQ kontrol listesine uygun olarak gerçekleştirilmiş ve raporlanmıştır.

Bulgular: Verilerin analizinde üç tema (sağlık bakım hizmeti sunumuna yönelik düşünceler ve yaşanılan duygular, depremin etkileri ve yaşanan travmatik stres ve baş etme deneyimleri) sekiz alt tema (düşünceler, duygular, ruhsal, fiziksel, sosyal, travmatik stres, etkileri ve baş etme) saptanmıştır.

Sonuç: Çalışma sonucunda 6 Şubat Kahramanmaraş merkezli depremlerde sağlık bakım hizmeti sunan sağlık profesyonellerinin yaşadıkları travmatik stres durumlarından psikososyal açıdan olumsuz etkilendikleri belirlenmiştir. Sağlık profesyonellerinin yaşadıkları travmatik stres durumlarıyla baş etmede oldukça zorlandıkları saptanmıştır. Afet durumlarında sağlık profesyonellerinin sağlıklı baş etmelerine yardımcı olabilecek gerekli düzenlemelerin yapılması önerilmektedir.

Anahtar sözcükler: Türkiye, Kahramanmaraş depremi, sağlık profesyonelleri, nitel araştırma

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Introduction

Natural events that occur suddenly, cause various forms of damage such as loss of life and property, and cannot be prevented by humans after they occur are called "natural disasters." Earthquakes, which are a type of natural disaster and also have man-made consequences, are common and frequent in our country and lead to loss of life and property depending on their magnitude (Bıçakçı and Okumuş 2023). Besides causing loss of life and property, earthquakes also result in psychological, social, and economic difficulties on both individual and societal levels (Güre 2021). According to the moment magnitude scale, the earthquakes of February 6, 2023, measuring 7.7 and 7.6 in magnitude and centered in Pazarcık and Elbistan in Kahramanmaraş province, caused extensive loss and destruction in Türkiye. Official figures report that these earthquakes resulted in the deaths of 48,448 people. In addition to the severe damage and losses in 11 provinces of Türkiye, nearly 17,000 aftershocks occurred (Uyar et al. 2023, Bıçakçı and Okumuş 2023).

Natural disasters such as earthquakes, floods, and tsunamis cause not only physical trauma but also psychological trauma (Sehlikoğlu et al. 2023). Psychological trauma is defined as any event that disrupts the habitual order of individuals, thereby shaking, hurting, and injuring their mental, spiritual, and physical existence in many ways (Uyar et al. 2023). Earthquakes are major traumatic events that lead to serious loss of life and property and can induce significant traumatic stress in those affected. The traumatic effects appear not only in people who directly experience the earthquake but also in search and rescue teams, personnel from non-governmental organizations, and healthcare professionals who come to the region to provide support (Rucklidge et al. 2021, Sehlikoğlu et al. 2023). In this context, traumatic stress symptoms may develop not only in those who are directly exposed to trauma but also in healthcare professionals who hear details from affected individuals and witness the trauma's consequences at the scene. These symptoms are categorized as secondary traumatic stress or indirect traumatization rather than primary trauma (Ren et al. 2018). After the earthquake, healthcare professionals who went to the region to provide support witnessed the traumas of the people affected and had to cope with adverse conditions, including aftershocks that continued after the major earthquakes (Schenk et al. 2017). Comparisons between disaster survivors and healthcare professionals who provided post-disaster support revealed that healthcare professionals experienced psychological disorders more frequently (Ren et al. 2018).

Post-traumatic stress symptoms, short-term adjustment disorders, Post-Traumatic Stress Disorder (PTSD), major depressive disorder, and various psychological issues such as suicide, anxiety disorders, and substance use disorders may affect healthcare professionals serving in the earthquake zone (Mao et al. 2018, Ren et al. 2018, Nagata et al. 2020). Secondary trauma often leads to symptoms such as anxiety, alertness, PTSD, and burnout in healthcare professionals (McBride et al. 2018, Güre 2021). Burnout levels may increase further when healthcare professionals, already negatively impacted by daily work life, are exposed to disasters such as earthquakes (Mattei et al. 2017). Studies conducted after the Great East Japan earthquake revealed that burnout, which adversely affects both work and daily life, can also predispose individuals to various mental health problems, particularly PTSD (Fujitani et al. 2016, Setou et al. 2018). Given that Türkiye is situated in an earthquake-prone area, assessing the mental health of healthcare professionals who play a critical role in providing medical services during and after earthquakes is crucial. Early field reports also indicate that healthcare professionals experienced psychosocial difficulties following the February 6, 2023 earthquakes in Türkiye (Yılmaz-Karaman 2023 et al.).

Yanık and Ediz (2023) stated that volunteer nurses encountered management and organizational barriers, experienced deep impacts from the psychosocial aspects of the disaster, and often struggled with inadequacies in coping with psychological difficulties (Yanık and Ediz 2023). In a systematic review and meta-analysis, Taharnejad et al. found that health workers responding to earthquakes face a relatively high risk of developing PTSD both in the short and long term. They also emphasized the need for health workers involved in disaster response to undergo screening for mental health disorders both before and after disasters and to receive essential training in stress management, psychological resilience, and the expression of feelings and emotions (Taharnejad et al. 2023).

The problems that emerged from our qualitative study on the difficulties faced by health professionals serving disaster victims after the earthquake offer significant contributions to the field. Understanding these difficulties helps identify the specific needs and support requirements of health professionals. This insight is crucial for determining the types of interventions needed in areas such as psychological support, stress management, and workload organization (Taharnejad et al. 2023, Uzun and Emirza 2024). Additionally, the study provides valuable information on managing stress and trauma experienced by health professionals after providing services to disaster victims. Health professionals dealing with earthquake victims bear substantial psychological

and physical burdens. By revealing the dimensions of trauma and stress experienced, this research may contribute to developing effective strategies and interventions to address these challenges. Detailed understanding of the difficulties faced by health professionals, as provided by this research, aids in developing support systems. Consequently, this can help create psychological support programs, supervision, group therapies, and other support mechanisms in the workplace. It may also guide the improvement of training for health professionals in stress coping skills, self-care strategies, and crisis management. Addressing the problems identified in the research could contribute to the development of psychological first aid and support practices for health professionals in disasters such as earthquakes, thereby enabling more effective management of psychological support processes in such situations.

This study is significant for its in-depth examination of the traumatic stress and coping experiences of volunteer health professionals working in the earthquake zone. By employing a phenomenological approach, the study addresses the gap in qualitative data within the existing literature, focusing on understanding the personal experiences, difficulties, traumatic stress, and coping strategies of these volunteer healthcare professionals. Although existing literature includes studies on the psychological effects, post-traumatic symptoms, and experiences of healthcare professionals in the earthquake zone, there is a lack of detailed studies that explore traumatic stress and coping experiences through individual stories (Mao et al. 2018, Bıçakcı and Okumuş 2023, Taharnejad et al. 2023, Yanık and Ediz 2024, Emirza and Uzun 2024). This research addresses this knowledge gap by revealing the traumas experienced by healthcare professionals who provided voluntary service after the earthquake and their methods for coping with these traumatic stress situations through thematic analysis. Understanding the traumatic experiences and coping strategies of healthcare professionals in the disaster zone will assist mental health professionals in developing more effective intervention strategies. By highlighting the traumatic experiences and coping strategies of those providing healthcare services in the earthquake zone, the study underscores the importance of focusing on appropriate intervention strategies during the early period. In this context, the research questions are as follows: 1. What are the traumatic stress experiences of healthcare professionals while providing voluntary healthcare services? 2. What are the coping experiences and strategies of healthcare professionals in traumatic stress situations encountered while providing voluntary healthcare services? This study aims to address these research questions by revealing the traumatic stress and coping experiences of healthcare professionals serving in the earthquake zone through a phenomenological approach.

In conclusion, the problems revealed by the research hold significant potential for understanding the difficulties experienced by health professionals and for developing necessary interventions and support systems to address these challenges. This understanding can enhance both individual well-being and the overall health system. Therefore, the study aimed to phenomenologically evaluate the traumatic stress and coping experiences of healthcare professionals following the earthquake.

Method

In this study, the authors followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines and documented their findings accordingly (Tong et al. 2007).

The study employed an inductive qualitative design and took place between April and May 2024. The researchers conducted semi-structured, in-depth individual interviews with 20 healthcare professionals who provided health care services during the 6 February earthquakes centered in Kahramanmaraş.

Research Team and Reflexivity

The researchers received extensive training in qualitative research methods, which enabled them to ensure a high level of methodological precision and scientific rigor in data collection, analysis, and interpretation. Each team member contributed significantly at different stages of the study. Both researchers in the team are active lecturers in nursing schools with PhDs in psychiatric nursing. They have clinical experience as nurses in hospital settings and are trained in qualitative research methods. The third researcher works as an emergency medical technician (EMT) at an institution affiliated with the Provincial Health Directorate. This researcher managed the data collection process and conducted interviews with the participants. The other two researchers were actively involved in transcribing and thematically analyzing the data. The research team regularly reviewed and discussed the findings to ensure objectivity and impartiality in data analysis, a critical process to minimize bias and enhance the credibility of the findings. The team acknowledged that their professional backgrounds and personal experiences could influence the research process. Therefore, they prioritized reflexivity throughout the study. Reflexivity ensured that the researchers remained aware of their biases and assumptions, continuously

assessing how these could affect the data collection and analysis processes. By maintaining this awareness, the researchers increased the reliability and validity of the data. Consequently, the academic and clinical experience of the research team, their expertise in qualitative research methods, and their reflexive approach significantly enhanced the scientific robustness and reliability of the study. This combination allowed the study's findings to make valuable contributions to the literature and guide clinical practice.

Sample

The study employed the snowball sampling method, a purposive sampling technique, to determine the sample group. This method operates on the principle of chain referral. During the study, the researchers asked initial participants for the names and contact information of other potential participants who might be willing to join or who could assist in reaching additional participants (Güler 2020). The researchers first interviewed several health professionals who had experienced the February 6 earthquakes centered in Kahramanmaraş. They then requested these initial participants' help in identifying other health professionals who had volunteered to provide health services in the earthquake zone. Using the snowball technique, the researchers reached 20 participants.

In qualitative studies, data saturation is expected when the information begins to repeat with the snowball method (Tong et al. 2007, Morrow et al. 2015, Güler 2020). Additionally, the researchers reviewed sample sizes from similar studies and carefully determined the sample size for this research based on these comparisons (Emirza and Uzun, 2024, Yanık and Ediz 2024). The data obtained from interviewing 20 participants began to repeat, indicating that saturation had been achieved. Consequently, the research included 20 participants to capture diverse perspectives and include individuals with various backgrounds.

Participation was voluntary. The inclusion criteria were: (a) having voluntarily traveled to the region and provided health services during the February 6 earthquakes in Kahramanmaraş, (b) being a health worker, (c) being open to communication, (d) agreeing to participate in the study, and (e) having provided health services in the region for at least two weeks. The exclusion criterion was: (a) having a language, speech, or hearing impairment that would impede communication.

The study involved face-to-face interviews with healthcare professionals who served in Kahramanmaraş during the February 6 earthquakes. Data collection continued until responses became repetitive, and interviews concluded when data saturation was reached with a total of 20 participants.

Procedure

The Gümüşhane University Scientific Research and Publication Ethics Committee approved this research (Issue: E-95674917-108.99-239764, Date: 21/02/2024). The researchers obtained informed consent from the participants before starting the interviews. They stored recordings and transcripts on a password-protected device. The study adhered to the Declaration of Helsinki and followed the ethical standards of the National Research Committee.

The researchers first interviewed health professionals who provided voluntary health services in the earthquake zone. The aim was to include participants with diverse perspectives and experiences. Consequently, the participant group of the study was formed on a voluntary basis. The researchers conducted the study in a province in the northern region of Turkey, carrying out semi-structured in-depth individual interviews with 20 health professionals. They conducted these interviews in designated interview rooms at hospitals, scheduling them outside the participants' working hours. The interviews continued until the data began to repeat and ended when the researchers reached data saturation with 20 participants. Throughout the study, the authors adhered to the Criteria for Reporting Qualitative Research (COREQ), ensuring comprehensive reporting of the research process (Table 1).

The researchers prepared a semi-structured interview form based on a review of the relevant literature. To ensure the internal validity of the interview form, they conducted a pre-application with a nurse and finalized the questions based on the suggestions of two expert academicians in the field.

The form is divided into two sections. The first section collects demographic information, including age, gender, marital status, and years of employment. The second section features a semi-structured interview guide with six core open-ended questions. The researchers discussed these questions individually with the participants in face-to-face interviews (Brinkmann and Kvale 2015). During the interviews, participants described the impact of the earthquake and their patient care experiences. The researchers used follow-up questions such as “Can you

elaborate on that?" and "What do you mean by this?" to explore their responses in greater depth. The interviews were recorded using a Sony voice recorder and transcribed verbatim by the same three researchers. After completing all interviews, the researchers prepared the data for analysis.

The questions in the semi-structured interview form:

1. What does the earthquake mean to you? How would you define it? Please express it in a few sentences.
2. What did you experience when the earthquake occurred? What emotions did you feel? What are your experiences regarding this event?
3. How would you describe the fear you experienced during the earthquake? What are the effects of the earthquake on you?
4. How would you describe the situation you encountered in the disaster area where you provided services after the earthquake? What are the traumatic effects of this situation on you? What are your life experiences related to this?
5. What was the most traumatic event in the earthquake zone that you remember most vividly? How did you react to the traumatic events you experienced in that region?
6. How did you cope with the effects of the trauma you experienced while serving in the disaster area after the earthquake? Which coping strategies did you use? Did these strategies help you?

Table 1. Combined criteria for reporting qualitative research (COREQ)

	Area 1: Research team and reflexivity		
	Personal Characteristics		
#	Item	Guiding questions	Explanations
1	Interviewer/facilitator	Which author/authors conducted the interview or focus group?	The third author conducted the interview.
2	Credentials	What were the credentials of the researcher, e.g. PhD, MD	First author :PhD Second author. PhD Third author .Associate Degree
3	Profession	What was their occupation at the time of the study?	First author: Dr. Psychiatric Nursing Instructor Second author: Dr. Lecturer, Psychiatric Nursing Third author: Emergency Medicine Technician
4	Gender	Was the investigator a man or a woman?	Three researchers Female
5	Experience and training	What experience or training did the researcher have?	The first author has taken qualitative courses, has experience in qualitative research and has published qualitative studies in international journals. The second author has taken qualitative courses has published qualitative studies in international journals.
	Relationship with participants		
6	Relationship status	Was a relationship established before the training started?	No relationship was established before the start of the study.
7	Interviewer's participant information	What did the participants know about the researcher, e.g. personal goals, reasons for doing research	Participants were aware of the purpose of the study and that the researchers consisted of three people, including lecturers and emergency medical technicians.
8	Interviewer characteristics	What characteristics were reported about the interviewer/ facilitator, e.g. bias, assumptions, motives and interests in the research?	At the beginning of each interview, participants were informed about the purpose and objectives of the study.
	Area 2. Study design		
	Theoretical framework		
9	Methodological orientation and Theory	Which methodological orientation was specified to support the study, e.g.	This was a qualitative study.

		discourse analysis, ethnography, phenomenology, content analysis?	
	Participant selection		
10	Sampling	How were participants selected, e.g. purposeful, convenience, consecutive, snowball	Snowball sampling method was used.
11	Approach method	How were participants approached, e.g. face-to-face, telephone, postal mail?	The timing of the interviews was determined by the individuals who voluntarily agreed to participate in the study. Interviews were conducted face-to-face.
12	Sample size	How many participants were there in the study?	A total of 20 individuals were included in the study.
13	Non-participation	How many people refused to participate or dropped out? Reasons?	No individual refused to participate in the study.
	Setting		
14	The setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Detailed information is given in the data collection section of the research.
15	Presence of non-participants	Was anyone else present apart from the participants and the researchers?	There were no observers.
16	Description of the sample	What are the important characteristics of the sample, e.g. demographic data, history	Individuals who agreed to participate in the study were included in the study.
	Data collection		
17	Interview guide	Were questions, prompts and guidelines provided by the authors? Has it been pilot tested?	Detailed information was given in the "Methods" section.
18	Repeat interviews	Have there been re-interviews? If yes, how many?	No.
19	Audio/visual recording	Was audio recording or visual recording used to collect data in the study?	Interviews recorder
20	Field notes	Were field notes taken during and/or after the interview or focus group?	Responses of all individuals and researcher observations were recorded.
21	Duration	How long were the interviews or focus groups?	Each interview lasted between 35 and 45 minutes.
22	Data saturation	Has data discussed?	Saturation
23	Transcripts returned	Have transcripts been returned to participants for comments and/or corrections?	No.
	Area 3: analysis and findings		
24	Number of data coders	How many data coders coded the data?	Two researchers and a third individual coded the data.
25	Description of the coding tree	Did the authors provide a description of the coding tree?	The titles and subtitles in the results section represent the final coding tree.
26	Derivation of themes	Were the themes predetermined or derived from the data?	Themes were derived from the data.
27	Software	What software, if any, was used to manage the data?	Data were analysed manually.
28	Participant control	Did participant provide feedback on the findings?	No.
	Reporting		
29	Quotations provided	Are participant quotes presented to illustrate themes/findings? Is each quote identified, e.g. participant number?	Participant quotes are provided to illustrate themes/findings. e.g. participant number.
30	Data and findings consistent	Was there consistency between the data presented and the findings?	Yes.
31	Clarity of main themes	Are the main themes clearly presented in the findings?	Yes.
32	Clarity of small themes	Is there a description of the different cases or a discussion of minor issues?	Yes.

Table 2. Demographic characteristics of the participants

#	Age	Gender	Marital status	Profession	Duration of working time	Time went to the disaster area	Voluntary or compulsory	Loss of a relative	Degree of closeness of lost
K1	26	Male	Single	Nurse	3 years	In the first 24 hours	Volunteer	No	-
K2	32	Male	Married	Nurse	13 years	In the first 24 hours	Volunteer	No	-
K3	24	Female	Single	EMT	3 years	5 months later	Volunteer	No	-
K4	25	Female	Single	EMT	4 years	1 month later	Volunteer	No	-
K5	24	Female	Single	EMT	3 years	1 month later	Volunteer	No	-
K6	29	Female	Single	EMT	10 years	6 days later	Volunteer	Yes	Friend
K7	27	Female	Single	Nurse	9 years	In the first 24 hours	Volunteer	Yes	Cousins
K8	27	Male	Single	Nurse	5.5 years	In the first 24 hours	Volunteer	No	-
K9	38	Female	Married	EMT	19 years	3 months later	Volunteer	No	-
K10	42	Male	Married	EMT	22 years	In the first 24 hours	Volunteer	No	-
K11	26	Male	Single	EMT	2 years	2 weeks later	Volunteer	No	-
K12	27	Male	Single	EMT	7 years	1 month later	Volunteer	No	-
K13	33	Male	Single	EMT	10 years	5 days later	Volunteer	No	-
K14	29	Male	Single	EMT	9 years	4 months later	Volunteer	No	-
K15	30	Male	Single	Nurse	7 years	5 days later	Volunteer	No	-
K16	30	Male	Single	Nurse	11 years	In the first 24 hours	Volunteer	No	-
K17	25	Male	Single	Nurse	4 years	In the first 24 hours	Volunteer	No	-
K18	27	Male	Single	EMT	6 years	In the first 24 hours	Volunteer	No	-
K19	26	Female	Single	EMT	4 years	In the first 24 hours	Volunteer	Yes	Friend
K20	29	Female	Single	EMT	6 years	15 days later	Volunteer	No	-

EMT: Emergency Medical Technician

Data Analysis

Colaizzi's (1978) seven-stage phenomenological analysis method guided the analysis of the qualitative data obtained from the interviews. The analysis process included the following steps:

1. Describing the Data: Three researchers independently read the interview texts to develop an in-depth understanding of the overall content and meaning.
2. Selecting Important Statements: The researchers identified, selected, and organized important and meaningful statements in the texts. These statements provided information that answered the research questions or supported the research purpose.
3. Extraction of Basic Themes: The researchers identified expressions with similar meanings in the written text and performed coding. They categorized the codes into themes and sub-themes based on their similarities and differences.
4. Identification of Themes: The researchers created sub-themes by associating the meanings of the themes and continued the analysis until they identified new themes.
5. Organizing the Themes: The researchers organized the themes according to the research questions and purpose, structuring them in a unified manner while considering their interrelationships.
6. Interpretation of Results: The researchers analyzed the themes and drew meaningful conclusions about the data.
7. Feedback of Results: An expert in psychiatric nursing with qualitative research experience evaluated the data, which strengthened and validated the accuracy of the themes and content.

Table 3. Traumatic stress and coping experiences of healthcare professionals providing voluntary health care services after the February 6th Kahramanmaraş Earthquakes		
Themes	**Sub-themes**	**Codes**
1. Thoughts and feelings towards health care service provision	A. Thoughts	A1. Terror A2. Little apocalypse A3. Near death A4. Darkness A5. Demolition A6. Intensive destruction A7. Hell. A8. Destruction of cultural heritage A9. Thinking that death is the only truth
	B. Emotions	B1 .Despair B2. Desperation B3. Fear B4. Restlessness B5. Panic B6. Shock. B7. Anxiety
2. Effects of earthquake	A. Spiritual	A1. Fear A2. Anxiety A3. Panic A4. Despair A5. Hopelessness A6. Sadness A7. Terror A8. Collapse
	B. Social	B1. Willingness to go immediately to help B2. Sharing pain B3. Thinking that the world is coming to an end B4. Feeling sorry for society and willingness to help
	C. Physical	C1. Demolition of buildings C2. Anergy C3. Hard work C4. Hunger C5. Thirst C6. Insomnia C7. Fatigue C8. Crying C9. Not washing for days
3. Traumatic stress and coping experiences	A. Traumatic events	A1. The smell of death in the streets A2. Bodies wrapped together in the rubble A3. Individuals who survived the rubble with the bodies of their wives and children in their arms for hours A4. Removing the bodies of your mates from the rubble A5. Cemeteries built for thousands of people A6. Deceased mother who shielded and protected her baby in her arms A7. Screams in the rubble A8. Bodies of mum and dad huddled together under the table A9. Screams of children who have lost their parents A10. Objects and memories recovered from the wrecks A11. Amputees
	B. Effects	B1.Post traumatic stress disorder B2. Depression B3. Anxiety disorders B4. Apathy B5. Sleep disorders
	C. Coping	C1. Thinking to stop worrying about unnecessary things in life C2. Praying C3. Crying C4. Psychotherapy C5. Making time for loved ones C6. To stop following social media C7. Prayer C8.Orientation towards spirituality

Validity in qualitative research requires researchers to observe the phenomenon as impartially as possible. Therefore, colleague and participant confirmation played a crucial role in ensuring the validity of the study (Colaizzi 1978, Arastaman et al. 2018, Yıldırım et al. 2021, Ulutaşdemir et al. 2023).

This systematic approach enabled thorough analysis and reliable results in the phenomenological research. The study developed themes and sub-themes through clear articulation, and the researchers included participants' statements to allow readers to verify the interpretation and analysis of the data (Yıldırım et al. 2021).

Results

The mean age of the individuals in the study was 28.88±4.5 years. Twelve participants were male, and nineteen were single. All participants voluntarily traveled to the earthquake zone and provided health care services. The demographic characteristics of the participants are presented in Table 2.

The analysis of the data from the semi-structured interviews led to the determination of themes, sub-themes, and codes (Table 3).

Theme 1. Thoughts and Feelings about Health Care Service Provision

Sub-theme 1. Thoughts

The interviews with individuals revealed that healthcare professionals experienced negative effects due to the earthquake. Participants expressed that the earthquake evoked thoughts of terror, a minor apocalypse, and intense destruction.

"For me, earthquake reminds me of the possibility that the truth called destruction and death can come suddenly. It expresses that the world is empty and meaningless, that there are things that we cannot afford. I see it as a situation that cannot be changed, that cannot be played on, that is difficult and difficult to prevent (P3).

"It is a situation that leaves people helpless and cannot be prevented. It is a situation where short preparations will not work because the time and place are not known exactly (P6).

"A natural disaster that has been ignored for years, even though its devastating impact could have been prevented (P10)."

Sub-theme 2. Emotions

As a result of the interviews, individuals reported experiencing feelings of hopelessness, helplessness, fear, alarm, and panic.

"It is a situation that leaves people helpless and cannot be prevented. It is a situation where short preparations would not work because the exact time and whereabouts are unknown. It was a situation of complete helplessness... (P6).

"The fact that a supernatural power reminds us that death is as close as a second to human beings by shoving the realities of life in our faces, the fact that everything can be destroyed in seconds." (P10).

"I felt extremely helpless that day. I wondered what I could do, so I volunteered to go. I tried to support in every possible material and moral way, believing I should be there without expecting anything in return" (P15).

Theme 2. Effects of Earthquake

Sub-theme 1. Spiritual

The interviews revealed that the earthquake had profoundly negative effects on the individuals.

"Since I did not experience the earthquake itself, I cannot comment on living through that moment. However, when I saw the cries for help from the earthquake region on social media, the horror I felt due to the lack of aid in the area is something I will never forget." (P9).

"It was an environment where feelings of sadness, terror and fear were experienced beyond human comprehension." (P17).

Sub-theme 2. Social

The interviews revealed that individuals were socially impacted by the earthquake, including an immediate desire to help, sharing in the collective pain, a belief that the end of the world had come, and sorrow for society.

"I felt completely helpless that day. I asked myself what I could do and decided to volunteer. I tried to contribute in every material and moral way, believing that I should be present without expecting anything in return" (P12).

Sub-theme 3.Physical

The findings indicated that individuals were physically affected negatively by the earthquake disaster.

"We tried to touch the lives of every person we could touch with complete impossibilities, without electricity, without water, without a morsel of bread to eat, without the most important communication network, and the horrible view of the people we could not touch caused a bad PTSD that took place in my mind after the mission (P1).

"In a word, it was a total despair, a relentless fight for survival and fear for one's life in the face of impossibilities. After returning from the region, certain loud noises reminded me of that place every time, creating a feeling that I was still there and there were aftershocks. (P13)"

"Within the very first hours of my presince, no logistical support and rescue efforts had yet begun. I witnessed the helplessness of the first emergency aid team I was part of, as rescue efforts for earthquake victims had not yet started. and I realized how much the institutions needed each other (P18)."

Theme 3. Traumatic Stress and Coping Experiences

Sub-theme 1. Traumatic events

The interviews reveal that individuals experienced and witnessed many different traumatic events.

"On that day and afterward, we found the rescue efforts to be inadequate, and as a paramedic, I felt a profound sense of helplessness. Debris surrounded my house, and we continuously tried to rescue people. Despite hearing sounds coming from the debris, we couldn't help anyone. We managed to clear a path for some individuals using our hands, but we couldn't help the critically injured patients. With no vehicles or roads available to transport them to the hospital, we faced numerous obstacles. We encountered bodies everywhere, and after a while, the smell of corpses filled the air (K4)."

"The most traumatic event for me was the collapse of the apartment building where my close friend Banu, who worked at the Hatay 112 head physician's office, was located. After ten days, we still couldn't reach her lifeless body and had to remove her from the wreckage. This experience made me cry so much that at times, I felt as though I had lost my mind. (P14)."

Sub-theme 2. Effects

In the interviews, individuals reported that the earthquake disaster had a negative impact on them as healthcare professionals.

"My anxiety increased significantly. I don't view this solely as an earthquake; rather, it intensified my anxiety, fear, and stress. I sought psychological support and consulted a psychiatrist. My life became dominated by chaos and anxiety. I faced uncontrollable situations, and at times, I felt emotionally numb despite my efforts. These strategies did not prove sufficient" (P2).

"I describe it as an environment where life halts, akin to the day of judgment. The earthquake left me psychologically shattered, leading me to undergo therapy for 4 months following the disaster" (P6).

"After the earthquake, I started therapy after work and continued for 4 months. I have not yet completely finished this process. I specifically went to Antakya after my duty and continue to visit there to support my memories and friends, so they are not left alone" (P7).

"I bid farewell to my children, realizing that a smile, a pain endured or alleviated, and a hand held are immensely valuable. In the days that followed, I experienced an earthquake that made me realize the world's foundations are not truly solid. I leave my pajamas in my closet so my children can smell me when I go on duty, and I avoid closing the room doors at night" (P8).

Sub-theme 3. Coping

Healthcare professionals reported significant challenges in managing the traumatic stress they experienced. They attempted to cope through various activities, including embracing spirituality, praying, and spending more time with their loved ones.

"The responsibilities of our work, both during our time in the region and after returning to our original duty station, required us to remain level-headed. I believe that, over time, this obligation took precedence over everything else. Therefore, I did not need to develop any specific strategy in this regard" (P20).

"It is incredibly hard to believe; I cannot understand how such a disaster could occur, how people endured days under the rubble. I could not reconcile this in my mind. During and after the earthquake, I realized the meaninglessness of life. I turned to worship, began to disregard trivial issues, and still do not recall many events. I have numerous memories from that time which seemed trivial then, but I cannot remember now" (P19).

Discussion

The aim of this study is to evaluate the traumatic stress and coping experiences of healthcare professionals who provided health care services during the 6 February Kahramanmaraş earthquakes employing a phenomenological approach. This study discusses the traumatic stress and coping experiences of healthcare professionals in three themes.

Healthcare needs are universal, and healthcare professionals play a crucial role in controlling public health risks and actively protecting and improving the health of themselves, their immediate environment, and the community before, during, and after disasters. Ensuring that society recovers from disasters as quickly as possible is among their fundamental responsibilities (Çopur and Karasu 2023). This study found that healthcare professionals were highly motivated to go to the earthquake zone and worked diligently for public health.

The study identified two sub-themes related to healthcare professionals' feelings and thoughts about delivering care. These sub-themes are categorized as emotions and thoughts. Healthcare professionals frequently work under challenging conditions and make critical clinical decisions in the field. Alongside family deaths, housing damage, and financial losses caused by the disaster, they may face issues such as inadequate infrastructure, the risk of endemic disease transmission, long working hours, personnel shortages, physical fatigue, anxiety, burnout, and even chronic effects such as PTSD (Çopur and Karasu 2023, Şehlikoğlu et al. 2023). In our study, healthcare professionals reported feelings of helplessness following the earthquakes, difficulties in providing care, and experiencing devastation that they felt was unavoidable. They indicated that these challenges left a profound impact on them. Many participants believed that if adequate interventions had been implemented, fewer deaths and less destruction would have occurred. This suggests that preparedness and response measures for healthcare services are crucial both before and after natural disasters.

Post-traumatic stress symptoms can vary widely among individuals, with some not experiencing any symptoms at all. Others exposed to trauma may develop psychological problems such as suicidal ideation, anxiety disorders, substance use disorders, short-term adjustment disorders, PTSD, or major depressive disorder (Mao et al. 2018, Nagata et al. 2020). In our study, healthcare professionals exhibited symptoms such as trauma, anxiety, and sleep disorders, indicating that disasters adversely affect their mental health as well as the health of the broader society. Additionally, the challenges faced in providing healthcare services contributed to profound feelings of helplessness, inadequacy, anger, sadness, and hopelessness among healthcare professionals. These negative emotions can have long-term psychological effects. Consequently, there may be a need for mental health support for healthcare professionals who experience such issues.

Providing health services during disaster situations is crucial. Healthcare professionals are key service providers in such contexts (Cansel and Ucuz 2022). They operate under challenging conditions as part of rescue teams (Tyer-Viola 2019). The earthquake has been found to have a negative impact on society at large, with particular effects on healthcare professionals. At the same time, healthcare professionals may face extreme difficulties, including family deaths, housing damage, and financial loss caused by the disaster. They may also experience anxiety due to the potential recurrence of disasters and the need to provide health services for an indefinite period (Çopur and Karasu 2023). The study found that earthquake-related factors, such as witnessing extensive damage, encountering numerous corpses, and observing various events in the rubble, negatively affected mental health.

In their study on the psychosocial challenges faced by nurses in the earthquake zone, Emirza et al. (2024) identified that nurses experienced psychological devastation, significant social difficulties, substantial losses, and numerous obstacles. They developed themes that explained these social and psychological difficulties and their impacts. Another study by Guo et al. (2022) found that the earthquake adversely affected the long-term psychological resilience of healthcare professionals and created both psychologically and socially destructive effects. Rezaei et al. (2020) conducted a qualitative study on nurses' competencies in providing care to individuals injured in the earthquake and concluded that nurses who witnessed the devastating effects experienced physical, mental, and social difficulties and felt inadequate. These findings align with our research. Our study indicates that the traumatic situations encountered after the earthquake led to feelings of inadequacy, helplessness, a lack of social support, and challenging physical conditions among health professionals. This

situation has had negative physical, social, and psychological effects on health professionals. In this context, providing social and psychological support for healthcare professionals may enhance both their physical and psychological resilience and improve the quality of health care.

Health professionals who arrived in the region after the earthquake witnessed the traumas experienced by those affected and had to contend with various negative conditions. Both health professionals who experienced the earthquake firsthand and those who came to assist are susceptible to post-traumatic mental issues (Harrel et al. 2020, Şehlikoğlu et al. 2023). Health professionals providing emergency medical services in disaster areas may face greater exposure to trauma and secondary traumatization due to images such as corpses, severe injuries, blood, and individuals in distress (Şehlikoğlu et al. 2023). Furthermore, compared to the general population of disaster survivors, health professionals are found to experience psychological disorders more frequently (Ren et al. 2018). Factors such as unwillingness to accept the risks of their duties, separation from their families, inadequacies in meeting daily needs, and mental fatigue negatively impact the mental health of healthcare professionals deployed in disaster areas (Nafar et al. 2021). Our study concluded that health professionals in the earthquake zone faced psychologically devastating effects due to the traumatic events they witnessed, the losses and challenges they encountered, and the inadequacies during their service. These devastating effects instilled deep fear and anxiety about losing their loved ones. Participants also reported persistent thoughts of death or a tendency to ignore the devastation over time. In this context, it is advisable for health professionals to develop strong psychological resilience, receive psychological support both before and after their deployment, and be encouraged to utilize their social and spiritual resources.

As a result of our study, we determined that health professionals experienced significant negative impacts from the trauma and were exposed to numerous traumatic events. They had considerable difficulty coping with the traumatic stress they encountered. Research indicates that nurses working in disaster areas developed various coping strategies to manage the traumatic situations they faced. These strategies include increasing social support resources by spending more time with family, receiving professional psychological support, and enhancing spiritual well-being through practices such as worship and prayer. Additionally, some professionals attempted to cope by focusing more intensely on their work or by trying to ignore or forget the trauma (Emirza and Uzun 2024). Tahernejad et al. (2023) also observed trauma symptoms in health professionals working in the earthquake zone and noted that they engaged in initiatives such as seeking psychological support and bolstering their social support networks to manage these symptoms. Our study's findings align with these observations. Health professionals in the earthquake region reported seeking psychological support to address the negative psychological effects of their traumatic experiences, enhancing their spiritual practices, maintaining composure, focusing on their work to distract themselves from the trauma, spending more time with loved ones, and avoiding dwelling on every negative situation. While some coping methods provided positive support, others may exacerbate the trauma. It is crucial to ensure that all health professionals who have worked in disaster areas develop effective coping skills to handle traumatic effects. Given that inadequate coping strategies can lead to more significant difficulties in the future, the necessity of providing psychological support to health professionals becomes even more apparent. These findings underscore the need for psychosocial rehabilitation services for health professionals.

A limitation of the study is that all participants were healthcare workers who volunteered their services following the February 6 Kahramanmaraş earthquake. Consequently, the findings are specific to these participants and the research context and may not represent the broader population of healthcare workers. Another limitation is that the study took place in only one province in the northern region of Turkey, which may not account for regional and cultural differences.

Conclusion

Earthquakes negatively affect the mental health of healthcare professionals, who are among the groups working in disaster areas. The study determined that healthcare professionals who provided services during the February 6 earthquakes centered in Kahramanmaraş experienced significant traumatic stress. These professionals faced difficulties coping with the traumatic stress situations they encountered. It is recommended to organize psychosocial support and rehabilitation programs for healthcare professionals to enhance resources such as social support, effective coping strategies, and solidarity.

It was determined that health professionals serving in the earthquake region experienced psychological distress due to the traumatic events they witnessed. This situation placed significant psychological strain on the health professionals. They faced various psychosocial difficulties and traumatic stress symptoms, which could also impact their daily lives. Therefore, it is crucial to assess health professionals serving in the disaster area from a

psychosocial perspective after their service. Evaluations should address their physical, mental, and social well-being, and professional interventions should be provided if necessary. This study examined the traumatic stress, psychosocial difficulties, and coping experiences of health professionals who served in the earthquake zone in depth. In this context, evaluating the coping strategies of health professionals serving in the disaster area is also essential. Health professionals with negative coping strategies or those who do not attempt to cope should receive psychosocial support. This study offers guidance for developing intervention strategies to address traumatic stress and psychosocial difficulties experienced by health professionals in the disaster area.

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