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On-site evaluation of emergency response carried out after earthquakes with epicentral base Kahramanmaraş/Pazarcık-Elbistan in Türkiye: An observational study[1]

Türkiye'de merkez üssü Kahramanmaraş/Pazarcık Elbistan olan depremler sonrası gerçekleştirilen müdahale ve iyileştirme çalışmalarının yerinde değerlendirilmesi: Gözlemsel çalışma[2]

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ABSTRACT / ÖZ

Disasters are one of the complex and global problems that people around the world can face. Türkiye is one of the countries where natural disasters occur frequently. In the study, the researchers aimed to observe human behavior and post-disaster services by being in the environment where the earthquake took place and to make inferences about it. The data were collected from the provinces of Malatya, Diyarbakır, Adıyaman, Kahramanmaraş and Hatay, which are the places where earthquakes centered in Kahramanmaraş occurred in Türkiye, between 07-15 February 2023 by observation technique. In collecting the data, an unstructured field study called "participatory observation" was carried out by using the control form created by the researchers. The data obtained from the field were coded by the researchers and the categories were reached from the codes and the themes were reached from the categories. In the study, reliability criteria were followed in the data analysis process. It was observed that efforts were carried out on issues such as providing shelter, nutrition and psychological support of search and rescue personnel, ensuring coordination between teams, strengthening communication systems, and ensuring correct information flow. It is important to ensure cooperation and coordination for the selection of appropriate personnel for search and rescue activities, the strengthening of communication systems and the effective distribution of aid.

Afetler, dünya genelinde insanların karşılaşabileceği karmaşık ve küresel sorunlardan biridir. Türkiye de doğal afetlerin sıkça yaşandığı ülkelerden birisidir. Çalışmada, araştırmacılar depremin yaşandığı ortamda bulunarak insan davranışlarını ve afet sonrası hizmetleri gözlemlemeyi ve buna yönelik çıkarımlar yapmayı hedeflemişlerdir. Veriler Türkiye'de Kahramanmaraş merkezli depremlerin yaşandığı yerlerden olan Malatya, Diyarbakır, Adıyaman, Kahramanmaraş ve Hatay illerinden 07-15 Şubat 2023 tarihleri arasında gözlem tekniği ile toplanmıştır. Verilerin toplanmasında araştırmacılar tarafından oluşturulan kontrol formu kullanılarak "katılımcı gözlem" adı verilen yapılandırılmamış alan çalışması gerçekleştirilmiştir. Sahadan elde edilen veriler araştırmacılar tarafından kodlanmış ve kodlardan kategorilere, kategorilerden ise temalara ulaşılmıştır. Çalışmada veri analiz sürecinde güvenilirlik kriterlerine uyulmuştur. Arama-kurtarma personellerinin barınma, beslenme ve psikolojik desteğinin sağlanması, ekipler arası koordinasyonun sağlanması, iletişim sistemlerinin güçlendirilmesi, doğru bilgi akışının sağlanması, hassas grupların önceliklendirilmesi ve mobil araçların tahsisi gibi konularda çalışmaların yürütüldüğü görülmüştür. Arama-kurtarma faaliyetleri için uygun personel seçimi, iletişim sistemlerinin güçlendirilmesi, yardımların etkili bir şekilde dağıtılması için iş birliği ve koordinasyonun sağlanması önemlidir.

[1] This manuscript is derived from the project titled "On-Site Evaluation of Emergency Response Carried Out After Earthquakes with Epicentral Base Kahramanmaraş/ Pazarcık-Elbistan in Türkiye: An Observational Study" presented at the TÜBİTAK Earthquake Research Conference on March 30, 2023.

[2] *Bu makale, 30 Mart 2023 tarihinde TÜBİTAK Deprem Araştırma Konferansı'nda sunulan "Merkez Üssü Kahramanmaraş/ Pazarcık Olan Deprem Sonrası Gerçekleştirilen Müdahale ve İyileştirme Çalışmalarının Yerinde Değerlendirilmesi: Gözlemsel Çalışma" başlıklı projeden hazırlanmıştır.*

1. Introduction

Natural disasters are one of the most complex and global-scale problems people face. Disasters of different types and frequencies cause serious damage to the welfare, economic resources and health of the society (Kreimer, 2001). It is known that the frequency of disasters experienced worldwide has increased with the effect of global climate change. Disasters may occur due to natural or man-made causes (Broby et al., 2018). Natural disasters can be classified as geophysical, biological, hydrological, meteorological, climatological and extraterrestrial. Man-made disasters can be classified as transport accidents, industrial accidents and various other accidents (EM-DAT, n.d.). Earthquakes, tropical cyclones and tsunamis are examples of natural disasters. Situations such as wars, terrorist attacks, explosions, industrial accidents can be given as examples of man-made disasters (Martin, 2010). Earthquakes, which form the focus of the study and are among the natural disasters, are disasters that occur due to tectonic movements on the earth's surface and cause various damages, especially loss of life and property, in the places where they occur (Herovic et al., 2020). In this context, the concept of the earthquake is expressed in the Dictionary of Explanatory Disaster Terms created by the Disaster and Emergency Management Presidency as "the event that the energy that emerges as a result of the breaking of the earth's crust with the effect of tectonic forces or volcanic activities, spreading in the form of seismic waves, shaking the environments they pass through and the earth with force" (AFAD, 2014). Türkiye, where the study was carried out, is located at the intersection of the Eurasian and Arabian plates in the east, as well as in an area with active tectonic features in the west, extending along the East Anatolian and North Anatolian Faults along the Cyprus and Hellenic arc (Arpat & Şaroğlu, 1972). In short, Türkiye is in the most active seismic belt of the earth, including the Mediterranean, Alpine, and Himalayan regions (Ergünay, 2007:3).

Two major earthquakes occurred on the Eastern Anatolian Fault Line and The Dead Sea Fault Line in Türkiye on February 6, 2023 with a magnitude of 7.7 in the center of Kahramanmaraş / Pazarcık at 04.17 and with a magnitude of 7.6 in the center of Kahramanmaraş / Elbistan at 13.24 As a result of the earthquake, 11 provinces (Kahramanmaraş, Adana, Adıyaman, Diyarbakır, Gaziantep, Hatay, Kilis, Malatya, Osmaniye, Elazığ, and Şanlıurfa) located on or around the zone where the fault line extends were seriously affected (Fig. 1) (AFAD, 2023a:4).

All disaster groups gathered at the Presidency Disaster and Emergency Management Administration (AFAD) center and in the provinces. With the determination of the fourth level an international call for help was made in the field of urban search and rescue (AFAD, 2023b).

The primary objective of this study is to investigate the field operations carried out in the aftermath of a disaster, involving the deployment of field researchers to the disaster-stricken area. Our aim is to meticulously observe and assess the full spectrum of activities related to search and rescue, nutrition, shelter, safety and security, provision of clean water, and sanitation. By doing so, we intend to thoroughly evaluate the strengths and weaknesses of emergency response services. This research has provided a comprehensive insight into the critical needs of search and rescue, safety and security, shelter, nutrition, clean water, and sanitation, which are vital from the very onset of a disaster in the affected region, with a particular focus on the effectiveness of emergency response services.

2. Materials and Methods

The study was planned as qualitative research. Qualitative research involves collecting and analyzing non-numerical data (text, video, observation, or audio) to understand concepts, ideas, or experiences. In other words, qualitative research involves an in-depth examination of little-known issues about a phenomenon. In qualitative research, observation, interview, speech, documentation, etc. data collection techniques are used (Creswell & Poth, 2016:166,168,236, 262; Guba & Lincoln, 2005:203).

In this study, the observation method was used since it aimed to reach the data firsthand and to describe the behaviors that occur in an environment in detail. Observation is a kind of qualitative data collection technique that includes not only the participant's observation in the field but also ethnography and

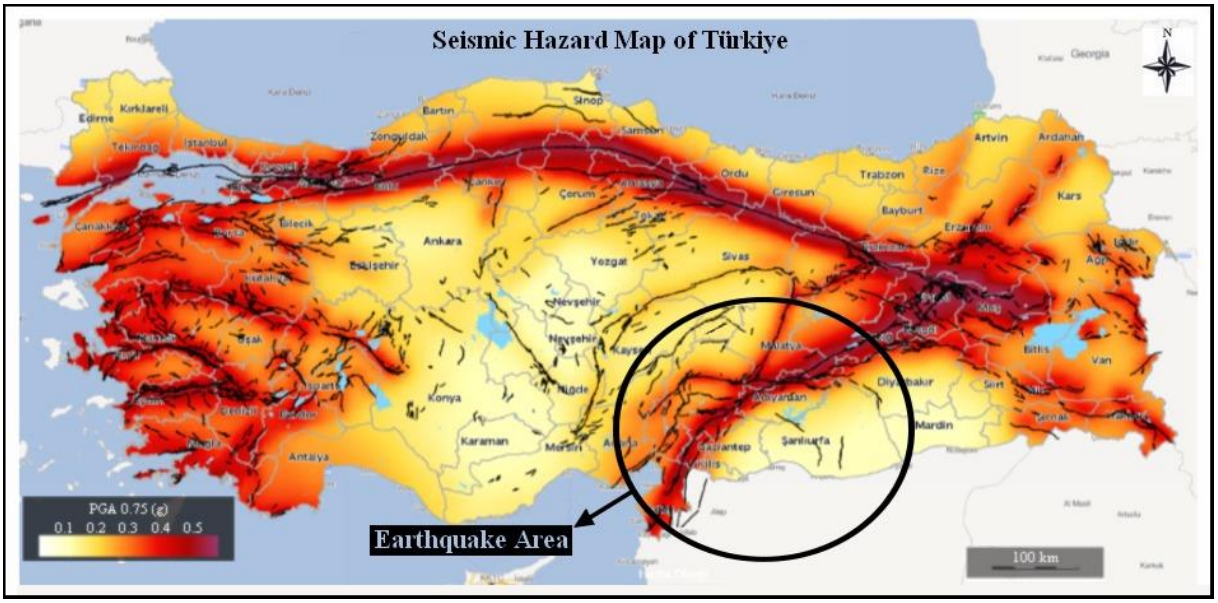

Figure 1. *Seismic Hazard Map of Türkiye (AFAD, 2018).*

research work in the field (Jamshed, 2014). Strengths of the observation method are natural environment, non-verbal behavior, analysis over time, whereas weaknesses of the observation method are lack of control, difficulty in digitization, generalization problems, difficulty in entering the field, and disappearance of confidentiality (Bailey et al., 1999).

In the study, the researchers aimed to observe human behaviors and emergency response services by being in the natural environment where the earthquake occurred and to make inferences about it. In this framework, the researchers carried out an unstructured field study called "participatory observation".

The data of the study were collected from the provinces of Malatya, Diyarbakır, Adıyaman, Kahramanmaraş and Hatay, which are the places where earthquakes centered in Kahramanmaraş occurred in Türkiye, between 07 February 2023 and 15 February 2023 by observation technique. The control form created by the researchers was taken as a guide in collecting the data.

Researchers had the opportunity to examine in depth all aspects of the intervention and pre-rehabilitation works carried out after the earthquake, in line with the data they obtained as a result of directly seeing, hearing, encountering, and, when necessary, interviewing people. The data were recorded by the researchers as observation notes and visually. The data were evaluated by the researchers and themes, categories, and codes were created. The following steps were, creating initial codes, creating themes, reviewing themes, naming themes, and reporting (Braun & Clarke, 2006). The researchers collected and reviewed the data repeatedly during the creation of themes, categories, and codes. In addition, two independent researchers checked and validated the data (Graneheim & Lundman, 2004; Vaismoradi et al., 2013). The data obtained at the next stage after the creation of themes, categories, and codes were repeatedly evaluated and reported by the researchers.

The researchers strengthened their studies by complying with criteria such as reliability, transferability, and confirmability in the data analysis process and made their results more reliable and valid (Guba & Lincoln, 2005:196).

The researchers observed the effects of the earthquake disaster directly in the areas where it occurred and analyzed the reality directly. Therefore, it is accepted that this situation increases the validity of the obtained data. In addition, all of the researchers who carried out the study completed their undergraduate education in the field of Emergency Aid and Disaster Management and their graduate education in the field of Disaster Management. Three members of the research team have completed their doctorate in Disaster Management, and one member continues his education in the field of disaster management. In addition, it has been seen that the researchers have many publications such as disaster management, disabled people in disasters, women's health in disasters, disaster risk perception, and evaluation of services provided in disasters. It has been evaluated that the experience of the researchers in disaster management also contributed to increasing the validity of the data obtained. The full participation of researchers in the reporting process is another issue that increases the reliability of the data. The data in the report were discussed and presented by the researchers.

Ethics committee approval of the study was obtained from the Republic of Türkiye Trabzon University Social and Human Sciences Scientific Research and Publication Ethics Committee with the letter of consent numbered E-81614018-000-2300019140.

3. Results

In this part of the study, the findings obtained as a result of the observations of the research team regarding the earthquakes are included. The themes, categories and codes are given in Figure 2.

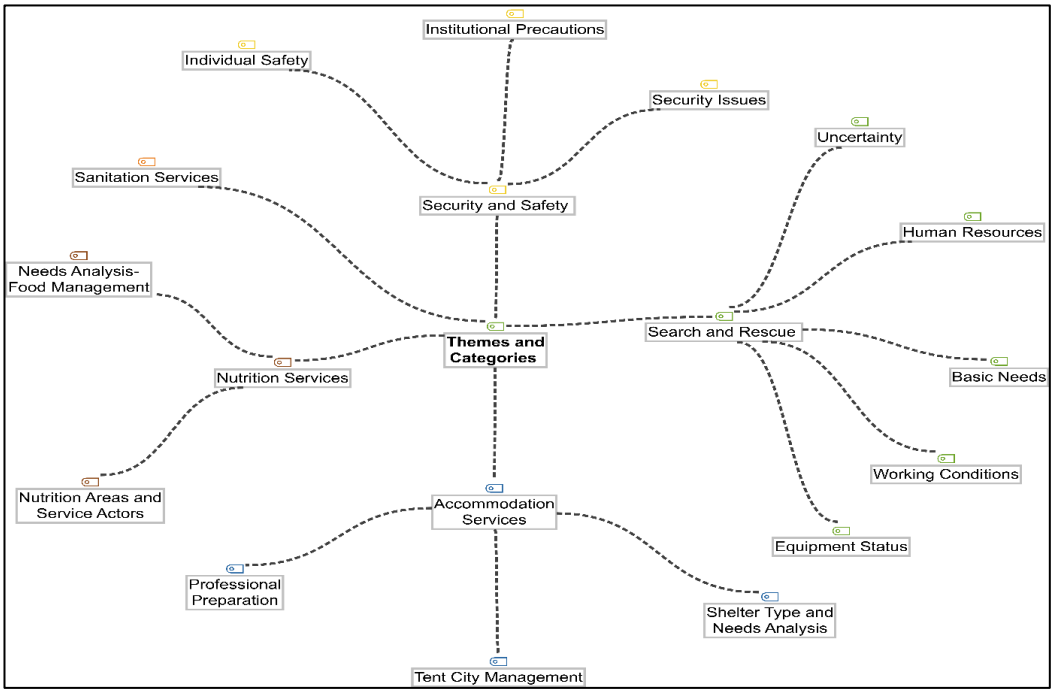

Figure 2. *Themes and Categories.*

3.1. Findings on search and rescue efforts

It was observed that search and rescue activities were initiated immediately after the earthquake by volunteers, non-governmental organizations (NGOs), and professional teams. Under the search and rescue theme, five categories were created: "human resources, basic needs, working conditions, equipment status, and uncertainty".

3.1.1. Human resources

It was determined that rescue efforts were carried out by individuals (spontaneous volunteers) who were in the earthquake area and also affected by the earthquake in the first minutes, and then by professional search and rescue teams and corporate volunteers. Considering the magnitude and impact areas of the earthquakes that occurred, it was seen that the number of professional search and rescue teams was insufficient. After the State of the Republic of Türkiye made an international call for help (S4), many countries responded to the call for help and sent teams to Türkiye to support search and rescue activities. Although professional teams were sent to the region, it was determined that there were problems with the assignment of volunteer teams in the field. It was observed that there were volunteers who did not received any training before, as well as those who completed their AFAD volunteer training. On the other hand, it was seen that the majority of search and rescue workers were volunteers.

It was observed that the symptoms of fatigue and burnout appeared in the search and rescue personnel, especially in the period after the first three days of the earthquake.

3.1.2. Basic needs

It was observed that search and rescue personnel had problems with accommodation, and many search and rescue teams were trying to meet their shelter and other needs with their own solution methods. It was determined that the teams had problems in the organization of working and resting alternately. It was evaluated that physical and psychological burnout pressure increased on the teams that continued their work after the volunteer search and rescue teams started to leave the area in the later stages of the earthquake.

3.1.3. Working conditions

It has been determined that cold weather conditions (-4 degrees Celsius-Malatya-Adıyaman), working area lighting problems, and unaware people in the working area adversely affect the search and rescue efforts.

3.1.4. Equipment status

In the context of search and rescue operations, a shortage of generators, jackhammers, cutting tools, and debris search equipment (such as seismic search devices, video search probes, etc.) was observed in many regions. The volunteers working in the field, particularly in the teams voluntarily arriving at the site as part of search and rescue activities, were observed to have deficiencies in both personal protective equipment (PPE) (such as hard hats, glasses, gloves, masks, etc.) and life-sustaining equipment (including tents, mats, sleeping bags, and food). In addition, it was observed that the equipment used by the teams was damaged during the work, but there were problems with the immediate supply of spare equipment.

3.1.5. Uncertainty

Another issue observed in the field was that the search and rescue operations were carried out without good coordination within and between teams in many regions. It was determined that there were issues in the search and rescue operation area, such as uncertainty regarding the identification of the area manager and team leaders, and the lack of clear allocation of suitable tasks in accordance with the skills and abilities of team members and volunteers.".

3.2. Findings on security and safety services

It was assessed that certain security and safety issues occurred in the field and significant efforts were made to provide security services immediately after the earthquake. Under the theme of security and safety services, three categories were created: "Security issues, institutional precautions, and individual safety".

3.2.1. Security issues

Information was obtained that there were serious security problems such as looting, theft, extortion, and violence in the region, especially in the first two days of the earthquake, due to the inadequacy of the inspection and control mechanism at the entrances to the city and the region. For example, In the Hatay province, looting activities were observed by researchers. As a result of these security issues, some volunteer and duty personnel had hesitations about going to certain areas. It was also determined that the officials have similar hesitations about delivering aid to peripheral regions.

3.2.2. Institutional precautions

It was observed that a large number of soldiers and police officers were present at the entrance of a shopping mall located opposite the Hatay bus station, and security measures were taken in order to prevent looting in the earthquake zone. Over time, an increase in the number of security forces and controls in the field was observed.

3.2.3. Individual safety

It was determined that in the first few days, some citizens returned to their homes to retrieve clothes due to the weather conditions. In the following days they entered the damaged houses to search for their relatives.

3.3. Findings on accommodation services

Under the theme of accommodation services, three categories were created: “shelter type and needs analysis, tent city management and professional preparation”.

3.3.1. Shelter type and needs analysis

Considering the number of buildings destroyed or damaged because of the earthquake and the number of people affected (approximately 13.5 million people), it was found that the number of tents set up for temporary shelter did not fully meet the need. In the district of Antakya in Hatay, it was observed that earthquake victims were trying to meet their shelter needs in the areas they have created with their own means. These areas were typically created using items such as blankets, sheets, plastic, and so on. Among the debris fields, it was seen that people waiting for their relatives to be rescued took shelter in the area they created.

On the other hand, earthquake victims who have vehicles stayed in their vehicles, especially during the night. In the daytime, it was observed that they were waiting outside next to the search and rescue operation field. It was observed that the victims who requested tents were directed to tent cities in many regions. However, especially those whose homes were far away preferred and wanted to receive individual tents instead of staying in tent cities.

3.3.2. Tent city management

It was noted that there were issues in the administration of impromptu tent city areas that emerged following the earthquake. Furthermore, it was observed that challenges arose in fulfilling the accommodation requirements of both spontaneous and organized volunteers who arrived in the region. Volunteers who come mostly by car stay in the vehicles they come from. In our observations in Antakya, it was seen that the volunteers who came to help meet their shelter need either in their own tents or in the sleeping bags they brought on the pavements, empty spaces, and green areas (Fig. 3).

3.3.3. Professional preparation

It was observed that AFAD, National Medical Rescue Teams (UMKE), some NGOs, and some international organizations working in the earthquake area were more prepared in terms of shelter.

3.4. Findings on nutrition services

Under the theme of nutrition services, two categories were created: “nutrition areas and service actors and needs analysis-food management”.

3.4.1. Nutrition areas and service actors

It was learned that there was a shortage of food and drinking water in the region, especially in the first 2 days. Immediately after the earthquake, it was seen that there were attempts to create a large number of soup kitchens, mobile kitchens, and feeding areas by non-governmental organizations and volunteers, especially the Turkish Red Crescent, which is the main solution partner of Nutrition Working Group according to the Türkiye Disaster Response Plan. It was determined that various public buildings were used for this purpose. During the observation period of the researchers, it was determined that the public and volunteers distributed hot soup and food (Fig. 4).

3.4.2. Needs analysis-food management

It was observed that the Turkish Red Crescent teams had problems in the coordination of nutrition services, especially with non-accredited organizations. It was determined that there were difficulties in the supply of critically important personnel, dry food and cooks in certain periods in established soup kitchens. As a result of the lack of coordination experienced in some regions in the food supply, information was reached that there were repeated hot meal distributions. On the other hand, it was observed that the victims who did not have the opportunity to cook at the points where dry food distribution was preferred, fall into a disadvantaged position. It was determined that professionals who came to the region for search and rescue operations came with food materials and packaged water in their own vehicles to meet their nutritional needs.

3.5. Findings on sanitation services

It was determined that there were problems in accessing clean water in many parts of the disaster area. It was evaluated that the risk of water contamination is high in places where the sewage system is damaged. It was considered that there were problems in accessing water in some areas where there were temporary shelters and that there was a significant risk of epidemic disease in the absence of a clean water supply. In the first days of the earthquake, it was evaluated that there were no facilities to meet the sanitation needs of earthquake victims

Figure 3. *A photo of a volunteer's own accommodation tent.*

Figure 4. *A photo showing food distribution.*

and search and rescue personnel, such as clean water, mobile toilets and bathrooms. Later days, especially the search and rescue teams generally solved their sanitation. It was learned that many people tried to meet their toilet needs in unsuitable open spaces at first. In this case, it was predicted that it would contribute to the risk of disease spreading through digestion and close contact. It was also observed that there were waste management problems in public living areas.

Since the second day of the earthquake, it was observed that many drinking water was sent to the region. Following the third day, it was observed that portable toilet and bathroom areas began to be partially created.

4. Discussion

After the earthquakes that took place in Türkiye on February 6, 2023, researchers were transferred to different regions where the earthquake took place in order to conduct field research. In the research, the search and rescue, security and safety, shelter, nutrition, and sanitation needs were evaluated on the basis of emergency response services.

It was observed that the magnitude and impact area of the earthquake was wide. In the first days, it was seen that the people had to cope with the disaster by their own means and the number of professional search and rescue teams was insufficient. It was evaluated that search and rescue activities were carried out by spontaneous volunteers at the first stage and then by national and international professional teams and corporate volunteers, but due to the widespread impact area of the disaster, even this human resource was unexpectedly insufficient to meet the demand. It was evaluated that there were problems in the organization and coordination of the volunteer human resources in the field, especially the spontaneous volunteers, and in issues such as team building, leadership, equipment management and use, safety, meeting physiological needs, and assigning appropriate tasks.

It was observed that the symptoms of fatigue and burnout appeared in the search and rescue personnel during the earthquake response process. It is thought that this situation was caused by reasons such as the personnel's inability to find adequate rest, long-term work, inadequate satisfaction of physiological needs such as hygiene and nutrition, and exposure to too many traumatic events (seeing dismembered bodies, communication with the victims' relatives, etc.).

It was determined that the personnel working in the field had problems with the supply and repair of PPE and search and rescue equipment. It is thought that this situation was caused by the high number of spontaneous volunteers, the urgent and unprepared departure of the professional teams, the lack of spare parts and technical personnel, the large number of debris fields, and the insufficient local facilities. In a study on the Marmara and Düzce earthquakes, it was determined that the participants most frequently encountered problems such as organization and lack of materials (Çakmak et al., 2010). In a study conducted in Türkiye, with the support of developing technology, the importance of periodic training of personnel who will work in search and rescue activities was emphasized (Sarol, 2007:103). In a study on the personnel working in the search and rescue unit, it was mentioned that search and rescue teams work in difficult conditions to save people's lives in disasters, and therefore, special training should be given to the teams on occupational health and safety (Can, 2022:85). In a study on search and rescue teams, it was stated that tents belonging to rescue teams could be set up by the support teams in order to find solutions to the sheltering problems of the rescue teams (Toprak, 2022:39). In a study on the effects of the events after the Marmara earthquake on search and rescue services, it was observed that the problems experienced in the 1999 Marmara earthquake did not recur in subsequent earthquakes (İbiş & Kesgin, 2014). In another study, it was stated that rescue workers sent to disaster areas may encounter people who did not received adequate training and

people who were not suitable for teamwork. It was mentioned that this situation would have a negative effect on teamwork (Lee et al., 2017). It is thought that the literature data are similar to the data of our study. The fact that most of the volunteers did not received any previous training on urban search and rescue activities is considered to be a problem. It is thought that the main reasons for the problems experienced in debris management are that the field managers did not have sufficient knowledge about the competencies of the volunteer and professional personnel, the personnel did not have the equipment to indicate their duties (colored vests, armbands, helmet inscriptions, etc.) and the debris management in many regions in accordance with INSARAG and AFAD standards.

In the study, it has been evaluated that there was a security and safety gap in the disaster area due to the absence of a control mechanism at the entrance and exit to the disaster area and the fact that the entrances and exits to the site were not supervised. It was determined that the problems related to security and safety were experienced in earthquake regions because of both the news reflected by the public and the observations and interviews in the field. It was determined that some areas could not be entered due to security gaps (especially peripheral areas and some streets due to night lighting problems) and there were problems in reaching aid. On the other hand, it was evaluated that volunteers and teams in charge (teams in charge of aid distribution) also had hesitations about going to some regions due to security concerns. It was evaluated that security concerns were tried to be resolved by sending more law enforcement officers to the region in the later stages of the disaster and by the judicial authorities to initiate the necessary investigations. After the earthquake, it was evaluated that those who want to enter their damaged houses to get their belongings like clothes, shoes, bags, money, jewellery, etc. had problems in terms of safety. In a study addressing the disaster experiences of individuals with disabilities in Türkiye, it was determined that, especially after earthquakes, people entered their homes to fulfill essential needs such as using the toilet (Aslan & Şahinöz, 2023). It was determined that some of the people who entered the damaged houses were caught in the second earthquake and suffered damage. On the other hand, it was determined that there were people entering the heavily damaged buildings to search for their relatives and they were taken out by search and rescue teams. It was also evaluated that the entrance and exit to the damaged buildings in the earthquake zone could not be controlled and people could not be persuaded not to enter. In a study conducted in Türkiye, it was stated that after disasters, looting, and theft increased in the disaster area and humanitarian aid was given to different people rather than the real needy. Therefore, it was emphasized that it is vital to take necessary measures for the safe distribution and control of humanitarian aid in the post-disaster period (Geray, 1977). It can be said that security vulnerability may occur after disasters and this situation can be abused by different people/groups. It can be said that the studies in the literature (Augusto, 2022; Constable, 2008; Faucon, 2010; Tierney et al., 2006) support this situation. In addition, it has been evaluated that individuals entering damaged buildings after the earthquake may endanger their individual safety.

In the study, considering the seasonal conditions (cold weather conditions) at the time of the earthquake, it was evaluated that it was essential to meet the need for shelter urgently for the earthquake victims. Both public institutions (central and local governments) and non-governmental organizations for accommodation services had played an important role in the creation of tent cities and container cities. However, considering the number of affected people, it was seen that the need for shelter was increased. Adverse weather conditions and infrastructure problems in tent cities also damaged the accommodation conditions of people. Facilities that are frequently used as evacuation centres/temporary accommodation centres in disasters can be designed in a safer and more comfortable way (Suhardi et al., 2023). It is thought that the disruptions in the selection of tent cities and the provision of tents suitable for seasonal conditions made the victims more vulnerable. On the other hand, earthquake survivors whose tent needs were not met created makeshift shelters using items such as tarpaulins, blankets, nylon, and the like. It was evaluated that people who had vehicles met their needs for accommodation in their vehicles, but they had problems in meeting their needs such as toilets and bathrooms. Temporary shelters may not adequately allow basic needs to be met (Malpass et al., 2019). It is thought that people who could not meet their shelter needs tend to evacuate to different regions. Although evacuation procedures were carried out under the coordination of the relevant stakeholders, it was also observed that there were individual evacuations. This situation was associated with temporary migration. Accommodation services were carried out both in the disaster area (temporary shelter areas) and throughout the country, within the framework of public policies. It was observed that the accommodation problems experienced by the personnel significantly affect their work performance. It is thought that it was normal for such problems to be experienced especially in institutions that did not operate against disasters in routine life, and that there was no preparation for these issues. Planning for sheltering by considering the existing conditions before disasters can reduce the difficulties that may be experienced in case of a possible disaster (Shariat Alavi et al., 2022). In a study on search and rescue teams, it was mentioned that the establishment of mobile bathrooms and toilets is important in meeting the hygiene and health needs of the people in the disaster area (Toprak, 2022:39). In a study on humanitarian logistics, one of the most important events for the survival and recovery of disaster victims is the supply and transportation of essential materials such as water, food, shelter, clothing, and medicine in the most efficient and effective way possible (Tatham & Christopher, 2018:3). It has been evaluated that it is important to meet the basic needs after the disasters. It is thought that training should be organized for all people who are likely to be assigned in the field in case of a disaster, especially for living under difficult conditions and sheltering.

In the study, it was evaluated that there were problems in meeting the nutritional needs in the first two days due to the width and size of the disaster area. It was determined that the problems related to nutrition were solved in a short time with the intense efforts of the main solution partner and support solution partners for nutrition services.

It was evaluated that continuous and sustainable assistance was provided for nutritional needs as a physiological need. The Turkish Red Crescent was observed making calls to all organizations that would provide hot meal distribution services in the disaster-stricken area, attempting to integrate them into its system. Institutions and organizations that were previously involved in this system generally acted in coordination with the Red Crescent, as they knew the procedures for food service to be provided in the disaster area. However, the teams that entered the region without any accreditation did not notify the Red Crescent. As a result, there was a lack of coordination in many regions. It is thought that legal measures should be taken to prevent this situation. Precautions should be taken for the provision of cooks, who are especially critical in the delivery of nutritional services in the disaster area. If necessary, human resources to be assigned to the region should be planned. The way of delivery of nutrition service should be realized by considering the available resources of the disaster victims. If necessary, dry food and cooking sets should be delivered to the victims. As mentioned in the issue of shelter, it is thought that all public officials who have the potential to work in the disaster area should be trained on personal preparations for the transfer to the disaster area. In a study on nutrition in disasters, it was seen that infrastructural, and administrative problems were emphasized as well as uncertainties about food storage and distribution during disasters (Nekouie Moghadam et al., 2017). In a study conducted in Türkiye, sufficient state support was emphasized in the Van and Elazig earthquakes, and it was stated that tents for nutrition services were set up quickly (Usta, 2021:264). It was stated that in disasters, it is important to carry out the nutrition management of especially vulnerable groups in a healthy way in order to protect individual health (Hayudanti et al., 2022; Adeoya et al., 2022; Dhamija & Sen, 2023). It has been evaluated that comprehensive efforts were made to meet the nutritional need, which is one of the basic needs in disasters. It can be said that the literature data on nutrition services support the data of our study.

In the study, it was observed that there was a problem with access to drinking water and clean water required for cleaning needs in the disaster area. It is thought that this situation occurred due to the infrastructure and superstructure problems damaged by the earthquake.

5. Conclusion

In this study, observations on response activities conducted after the earthquake were presented, including examples of practices and challenges encountered in essential areas such as search and rescue, security and safety, accommodation, nutrition, and sanitation. It is believed that individuals who have graduated from programs focusing on formal education in disaster management can play a crucial role in addressing various shortcomings, particularly those arising from a lack of experience and knowledge, in the field. Their employment in the field is seen as significant for mitigating these deficiencies. Another crucial point is that promptly addressing the needs of field-assigned personnel, such as nutrition, accommodation, hygiene, security, and safety, will contribute significantly to the demonstrated performance.

Limitations of the Study

Social impacts caused by disasters may need to be investigated and understood in more depth. The study focuses on the post-disaster response period. However, it is necessary to examine the efforts that can be done on the prediction and prevention of disasters. The services offered may vary in different countries or regions, with different approaches by different institutions or organizations. In this respect, international studies may be needed.

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Conflict of Interest

There is no conflict of interest with any institution or person in the study.

Contribution of Authors

G.U Conceptualization, Data curation, Investigation; Methodology, Project Administration, Supervision; Validation, Visualization, Writing–original Draft. R.A Conceptualization, Data Curation, Investigation; Methodology, Project Administration, Supervision; Validation, Visualization, Writing–original Draft. F.G Conceptualization, Datacuration, Investigation, Methodology, Validation, Visualization, Writing–original Draft. E.A Conceptualization, Data Curation, Investigation, Methodology, Validation, Visualization. I.T.P Conceptualization, Data curation, Validation, Visualization.

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