

Original article

Report on the earthquake in Turkey: Field observation on healthcare services and ethical challenges

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Abstract: On February 6, 2023, an earthquake with a magnitude of 7.7 m occurred in Turkey, centered in the Pazarcık district of Kahramanmaraş province, followed nine hours later by another earthquake with a magnitude of 7.6 m, centered in the Elbistan district of Kahramanmaraş province. In the earthquakes, 45,000 people died, and more than 100,000 were injured. During the earthquake search-and-rescue personnel, emergency responders, and volunteers worked in the field. Disasters that suddenly affect large masses of people create many issues related to medical ethics. Likewise, difficulties caused by limited resources lead to issues related to beneficence, non-maleficence, autonomy and justice. This is a descriptive research study based on the field observations of researchers who were actually in the disaster area after the earthquakes, as well as an analysis of and observations related to the news, information and reports published. This study draws attention to ensuring the participation of society in the fight against and response to disasters. In addition, ethical guidelines for healthcare providers in disasters should be prepared and integrated into national disaster plans. Turkey's earthquake experience will provide essential information for decision-makers and practitioners regarding the extent of the area impacted and the scope of the affected population.

Keywords: earthquake; Turkey; healthcare; public health; ethics

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Introduction:

Earthquakes are important natural events that cause damage and destruction and affect millions of people worldwide ^{1,2}. Natural disasters typically affect all dimensions of society and require the intervention of all institutions and organizations ³. In addition to loss of life and injuries, natural disasters cause severe damage to infrastructure systems, such as water, electricity, sewage, transportation (road, airway), communication and health systems ⁴. When natural disasters are poorly managed, they can lead to even worse disasters. Efficient coordination during the planning and implementation of post-disaster services has the potential to save numerous lives. By facilitating prompt and convenient access to essential services, disaster survivors can receive

the assistance they require in a timely manner, significantly reducing the risk to their lives ⁵. To mitigate the impact of an earthquake disaster, it is crucial to prioritize and deliver people-centered interventions. This includes providing on-site first aid and triage, curative healthcare services, epidemic control measures, suitable shelter, nutrition services, and equitable access to psychosocial support. By ensuring these services are available in a fair and inclusive manner, the adverse effects of the disaster can be effectively reduced ⁶.

On February 6, 2023, an earthquake with a magnitude of 7.7 m occurred in Turkey, centered in the Pazarcık district of Kahramanmaraş province, followed nine hours later by another earthquake with a magnitude of 7.6 m, centered in the Elbistan district

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of Kahramanmaraş province ⁷. The earthquakes affected about 15 million people in a wide area (11 cities). The earthquakes were the first recorded giant earthquakes in the country since the 7.4-magnitude earthquake in Izmit city, Turkey, on August 17, 1999, which killed more than 17 thousand people. The most destructive earthquake in the history of Turkey occurred in Erzincan in 1939, which had a magnitude of 7.8. A total of 33,000 people lost their lives, and hundreds of thousands of people were negatively affected ⁸. In the February 6, 2023, earthquakes, 45,000 people lost their lives, and more than 100,000 people were injured. While many of these injuries were minor, some victims lost organs and extremities. During the earthquake and in the following period (until February 20, 2023), 245,198 search-and-rescue personnel, emergency responders, security, support personnel and volunteers worked in the field ⁹. The search-and-rescue efforts continue as of 20 February 2023, with the injured and disaster victims evacuated to other provinces. Individuals whose homes were destroyed or rendered uninhabitable due to the disaster are currently being accommodated in temporary and permanent shelters. The coordination of these shelters is being overseen by AFAD (the Turkish Ministry of Interior, Disaster and Emergency Management Presidency), ensuring effective leadership and management in providing housing solutions for those affected ⁹. Nutrition (hot meals, food), shelter (blankets, heaters, clothing) and hygiene support are provided to citizens in shelters and other locations in the disaster-affected areas.

The health and well-being of a community where a disaster like an earthquake takes place are profoundly impacted in the long run by various factors such as fatalities, injuries, and the detrimental effects on the healthcare system ¹⁰. Furthermore, the risk of contracting infectious diseases, including upper respiratory tract infections, diarrhea, tuberculosis, and parasitic diseases, is amplified by factors such as crowded living conditions, limited access to clean drinking water and essential utilities, as well as inadequate personal hygiene practices. ¹¹. Therefore, search-and-rescue efforts, emergency aid, transfer to a safe area and treatment services must be immediately coordinated and provided in disaster-affected areas following disasters. In addition, It is vital to provide shelter–nutrition–hygiene services, healthy drinking and utility water, preventive health services, diagnostic and therapeutic health

services, immunization services, environmental health services (waste management, vector control), health education and psychosocial support services as soon as possible ^{12,13}. However, it is challenging to coordinate these interventions in the wake of large-scale disasters, and the same resources/benefits may not be available in every local disaster area ¹⁴.

Natural disasters have long-term, wide-ranging and devastating effects on people's mental and physical health and social relationships ¹⁵. Various health needs arise following disasters. First, disaster preparation and planning should be performed socially, organizationally and individually. Following a disaster, it is crucial to provide post-disaster healthcare services, address injuries, meet the health requirements of the affected community, and offer psychosocial support. This should be done while taking into account various factors, including the socio-demographic profiles of individuals in the affected areas, environmental conditions, and the distribution and prevalence of both infectious and chronic diseases ¹⁶. In shelter areas, effective redelivery of primary healthcare services and access to primary healthcare are crucial, along with early diagnosis, treatment and prevention of infectious diseases to prevent their spread. The primary focus should be on the continuous monitoring and management of chronic diseases, minimizing unnecessary referrals to higher-level healthcare facilities, and, above all, safeguarding and enhancing the health and well-being of the population. Therefore, it is necessary to ensure minimum conditions for effective, efficient, continuous and holistic primary healthcare in temporary and permanent shelter centers in disaster-affected areas ¹⁷.

In Turkey, natural (earthquake, flood, avalanche, landslide) and manufactured (fire, war) disasters and crises occur at various times. AFAD is responsible for planning, directing, supporting and coordinating the activities necessary to prevent and reduce disasters throughout the country, respond to and combat disasters and crises and ensure cooperation between all institutions and organizations in the country. Under the coordination of AFAD, public institutions and organizations and non-governmental organizations operate as part of various service groups (search and rescue, emergency aid, shelter, nutrition, health services, etc.) in response to disasters

and emergencies¹⁸.

This study investigates the search and rescue operations, emergency assistance, medical treatment services, and humanitarian aid initiatives carried out by public institutions and non-governmental organizations in response to the Kahramanmaraş earthquake, using an ethical framework. The data collected adheres to the principles of biomedical ethics, specifically focusing on beneficence, non-maleficence, respect for autonomy, and justice, and is analyzed and discussed accordingly.

Materials and Methods:

2.1. Purpose of the study

This is a descriptive research study based on the field observations of researchers who were actually in the disaster area after the earthquakes that occurred in Kahramanmaraş province in Turkey on February 6, 2023, as well as an analysis of and observations related to the news, information and reports published on the websites of non-governmental organizations and public institutions in Turkey.

2.2. Study hypothesis

Disasters that suddenly affect large masses of people create many issues related to medical ethics. Likewise, difficulties caused by limited resources lead to issues related to beneficence, non-maleficence, autonomy and justice.

2.3. Importance of the study

Evaluating and examining the health services that were provided following earthquakes that directly affected nearly 15 million people over a vast area and considering them through an ethical framework are essential for effectively coping with future disasters.

2.4. The population of the study and sampling

The researchers interviewed nearly 100 health workers, government and non-governmental organizations (NGOs) managers and many volunteers working in hospitals and temporary assembly areas at the earthquake site.

2.5. Data collection tools

The researchers focused on health issues when making their observations.

2.6. Data collection method

The researchers visited the earthquake-affected

areas in the Kahramanmaraş, Adıyaman and Hatay provinces between February 14–17, 2023, in the second week following the earthquakes. Observations were made in temporary shelters, hospitals, NGOs centers and debris areas in the earthquake zone. In addition, news and reports published on the websites of public institutions and NGOs in Turkey were examined.

Results:

3.1. Search and rescue

There are local search-and-rescue teams of AFAD provincial directorates, various public institutions (National Medical Rescue Team-UMKE, fire department, military search and rescue JAK) and NGOs in each province. As the earthquakes occurred in winter, the climatic conditions were challenging. The occurrence of the earthquake resulted in disruptions to transportation (both highways and airways) as well as communication systems. The extent of the disaster area, coupled with the fact that a significant portion of the population residing in the affected region was impacted by the earthquakes, created challenges in promptly deploying search-and-rescue teams to the local areas or provinces. Unfortunately, the search-and-rescue activities started slowly. In addition, there were delays in the arrival of professional search-and-rescue teams and logistic support to disaster areas in the immediate post-disaster period due to transportation and communication disruptions. Further, in the first three days after the earthquakes, a lack of coordination in the disaster-affected areas affected the work of the professional search-and-rescue teams.

The initial hours of the disaster witnessed the rescue of the majority of individuals who were trapped under debris by their own family members and relatives. As the process progressed, professional search-and-rescue teams arrived in the field, and many lives were saved. However, because most search-and-rescue teams operate in the city centers, the roads are closed and there is no good communication, damage assessments are delayed in rural areas, and the professional support needed in these regions cannot be provided immediately. From the first day of the disaster, UMKE (National Medical Rescue Team) carried out search-and-rescue activities in the disaster area as first responders¹⁹. Public institutions,

organizations, non-governmental organizations (NGOs), and international search-and-rescue teams worked in tandem to provide assistance in the disaster-affected region. Notably, NGOs swiftly arrived at the area shortly after the earthquake struck and initiated their relief operations ²⁰.

3.2. Communication

The recent earthquakes caused damage to infrastructure and telecommunication systems, leading to communication problems and delays in damage assessment and aid delivery. Citizens were unable to contact emergency services and each other, and public institutions and NGOs faced difficulties in obtaining accurate information and traveling to the affected region. Uncontrolled movement of people also caused transportation problems.

In addition, when the communication problem was solved, an excellent volunteer movement started with social media interaction and a sense of responsibility. Through social media, referrals were made to address the needs of the disaster victims, from search-and-rescue activities to shelter, nutrition and personal needs, and aid was delivered directly to the victims. Indeed, social media and mass media can reinforce social solidarity and the spirit of cooperation in times of disaster. However, many false reports on social media hindered and delayed the working personnel.

3.3. Health infrastructure

Many health facilities were destroyed or severely damaged, except for a few hospitals in the city center. The damage to the health facilities and the direct impacts of the disaster on the health personnel (death, injury, etc.) limited the capacity of the health facilities. Due to the damage to the health facilities, emergency health services could only be provided in field tents. During the initial three days following the disaster, the Ministry of Health coordinated the transfer of injured and ill individuals from the disaster zone to healthcare facilities located outside the affected area. This was facilitated through the use of ambulances, including land, air, and sea transportation, as the number of injured and sick individuals surpassed the capacity of the healthcare facilities within the disaster area.

The Ministry of Health established emergency response units and field hospitals in the disaster-affected areas, and health services were provided ²¹.

In addition, container and truck mobile pharmacies, medicines and medical supplies were provided to citizens free of charge ²². Patients hospitalized in the first hours after the earthquakes were either discharged or transferred to the surrounding cities. Subsequently, all health institutions provided emergency services free of charge. In the first two to three days after the disaster, after the emergency service examination, patients and injured people with severe conditions were transferred to nearby provinces outside the disaster area by ambulances and to distant medical centers by helicopters and planes when needed ²³. By the second day, hospitals began to receive external human resource and logistic support.

The Ministry of Health and national and international NGOs established field-mobile health facilities in the disaster area and provided health services in shelters and rural and city centers, offering preventive, curative and rehabilitative health services. In the first week, many NGOs started to provide health services under the coordination of AFAD in temporary shelter centers and community living areas in the disaster-affected areas. NGOs generally provided essential health services and outpatient diagnosis and treatment services in tents. In addition, mobile pharmacies met the medical needs of injured patients in these shelters.

3.4. Health workers

During the earthquake, many health workers (physicians, nurses, midwives, technicians, etc.) lost their lives, and thousands were injured ²⁴. Although most victims had difficulties overcoming the physical and psychological trauma of the disaster and could not go to work, health workers tried to serve the disaster victims by going to their assigned health facilities. Some worked to help the injured without leaving the hospital for days. In addition, many paramedic search-and-rescue teams (UMKE) worked in the wreckage areas. UMKE teams, which are trained to provide correct and rapid medical treatment to the injured after a disaster and to ensure that they are transported to emergency services appropriately, play a critical role following disasters ²⁵. A large number of health workers went to the disaster area voluntarily, either individually or through national and international NGOs not assigned by the Ministry of Health, helping to meet the needs of those affected.

3.5. Sanitation and hygiene

The destruction in the disaster area after the earthquake damaged the infrastructure of the settlements. Especially in the first two days, earthquake victims had minimal access to adequate and suitable food, clean drinking water and appropriate toilet facilities. While hygiene equipment was sent to the region, problems such as seasonal conditions, transportation difficulties and a lack of constant utility water and material supplies meant that suitable (mobile, container) toilets and bathrooms could not be installed in all disaster areas, and personal hygiene equipment could not be used properly. On the third and fourth days after the earthquakes, shelter centers and tent camps were established in the areas affected by the disaster. This led to the provision of portable bathrooms and toilets to meet the sanitation needs of the affected population. In addition, some NGOs sent hygiene materials to the region as “hygiene packages”²⁶.

3.6. Epidemics and immunization

After the earthquakes, victims were placed in temporary shelters, and primary healthcare services were provided where they stayed, seeking to create suitable accommodation–nutrition–hygiene conditions to prevent epidemic diseases. However, scabies cases occurred due to hygiene issues. Health teams started health screenings and disease follow-ups in shelters to identify infectious diseases²¹. In addition, regular monitoring of drinking water (analysis, chlorination) and infectious diseases in the disaster area were carried out²⁷. Mobile teams provided primary healthcare services (examination, screening and medication) for rural disaster victims through the Ministry of Health and NGOs (Red Crescent, Doctors World Wide). Primary healthcare services were provided in tent facilities constructed by the Ministry of Health and NGOs. Immunization services were also provided on-site and in health facilities by teams affiliated with the Ministry of Health¹⁹.

3.7. Rehabilitation activities

The loss of life due to the earthquakes had significant psychological effects on the relatives of the deceased. The scope of the earthquake and the sheer number of collapsed buildings prevented the rapid removal of debris. Many people waited for help, trapped under

the rubble, while their families waited desperately. This situation caused serious psychological trauma in the population affected by the earthquakes. Furthermore, the magnitude of the earthquake and the significant number of people affected by it generated anxiety and stress among the population residing in other parts of the country. Numerous NGOs organized interviews with volunteer psychiatrists and psychologists on online platforms²⁸. In the days following the earthquakes, rehabilitation activities were carried out face-to-face directly in the area. Many people lost extremities due to the earthquake²⁹, and without proper rehabilitation, they would be unable to take their place in society.

Discussion:

The “four principles” of biomedical ethics offer a straightforward and universally applicable framework for addressing ethical dilemmas in healthcare³⁰. This approach is particularly valuable in situations, such as disasters, that impact a large number of individuals. By prioritizing the principles of medical ethics, healthcare professionals can navigate complex ethical issues in a manner that is accessible, culturally sensitive, and ethically sound³¹.

4.1. Beneficence

The principle of beneficence entails a moral duty to take actions that promote the well-being and benefit of others³². One of the most important topics in disaster management is protecting individuals’ health and well-being³. However, it takes work to provide this benefit for everyone who needs it during mass disasters like earthquakes. Factors such as damage to the roads (highway, airport) connecting the cities in disaster-affected areas with other regions in the first days following the earthquakes and transportation difficulties due to snowstorms resulted in the delayed delivery of logistics services. This limited the support that could be provided in the crucial first moments.

Search-and-rescue teams play a critical role in rescuing people trapped under the debris following an earthquake³³. Thus, after an earthquake, many lives can be saved through fast and practical (professional) search-and-rescue efforts³⁴. The use of new technologies (thermal cameras) in search-and-rescue activities allows teams to identify survivors in the wreckage quickly and increases their chances

of survival³⁵. To foster social solidarity and provide effective assistance in the aftermath of earthquakes, it is crucial for non-governmental organizations (NGOs) and citizens to collaborate with the state. This collaboration is particularly vital in search-and-rescue operations, as well as in the provision of essential services such as shelter, food, nutrition, healthcare, and psychosocial support³⁶. Our research in the field reveals that search-and-rescue efforts start from the very first moments after a disaster. However, precise information is needed about the first aid knowledge of the search-and-rescue teams. The direct delivery of the injured from the rubble to health workers after stabilization and their transfer by ambulances are consistent with the principle of providing beneficial health services.

Research has shown that adolescents residing in earthquake-affected areas experience higher rates of psychological distress compared to those living in less affected areas³⁷. In light of this, adhering to the principle of beneficence involves offering healthcare services that enhance the physical, psychological, and social well-being of adolescents in these areas.

In disaster situations, there is a crucial requirement for teams to engage in reliable and accurate information exchange while maintaining effective coordination. Wireless networks can provide a good communication infrastructure³⁸. Using telephones and the internet, people trapped under the wreckage could direct rescue teams, providing location notifications and verbal communication. More people could be rescued alive due to the presence of disaster-resistant transmitters and base stations or mobile transmitters that can be activated immediately after a disaster. Mass media and social media are also important ways to prevent and reduce disaster-related damage³⁹. In the earthquakes in Turkey, the locations of the people needing help were shared, and irregular aid organizations were organized through social media tools and messaging applications. Therefore, it is essential to develop communication strategies for disaster preparedness in society and to conceptualize the phenomenon of disaster preparedness⁴⁰.

Disaster management for public health is not focused on meeting the need for health services during the disaster but rather on determining disaster-related needs before a disaster occurs⁴¹. This includes the appropriate use of available resources, disease

control methods, preventing unwanted health effects, evaluating the effectiveness of the practices and updating emergency plans for possible disasters^{42,43}. Moreover, it is important to plan for the devastating effects of disasters, including potential epidemics. For epidemic control, suitable shelter areas are needed (the ground is dry, the surface is permeable gravel, asphalt covered, inclined and the shelter center and container have sufficient per capita usage area). Moreover, clean drinking and utility water must be provided and waste must be controlled in shelters. Environmental vector control is also needed. The drinking and utility water provided to the shelters should be analyzed regularly, and storage tanks should be chlorinated. In addition, it is crucial to provide preventive and immunization services within the scope of primary healthcare services in the shelters as well as hygiene, attitude and behavior development training for the people living there. Shortly after the earthquakes, temporary shelters and tents supplied by AFAD and NGOs were erected. According to the information we obtained from the field, clean water was delivered to the disaster-affected areas on the second and third days following the earthquakes. In addition, mobile toilets and bathrooms were established in temporary shelters. These actions helped to prevent potential public health problems due to poor hygiene.

While there is no absolute criterion for beneficence, the World Health Organization (WHO) has issued a classification and minimum standards for foreign medical teams in disaster situations in 2013. The WHO's principles underscore the importance of healthcare being safe, timely, effective, efficient, fair, patient-centered, and in accordance with patient rights⁴⁴. Furthermore, approaches such as Donabedian's healthcare quality model can serve as a means to ensure the delivery of high-quality care⁴⁵.

4.2. Non-maleficence:

The principle of non-maleficence dictates the obligation to avoid causing harm to others³². While this principle is fundamental in medical practice, there is a potential for harm to be inflicted on individuals affected by an earthquake during intervention. For instance, procedures like amputations, which may cause harm, are sometimes deemed necessary to yield substantial benefits. Although such interventions seemingly contradict the principle of

non-maleficence, they can be morally justified based on a careful assessment of the overall well-being of the individuals involved.

Search-and-rescue activities by local people have little impact and pose risks. For example, suppose emergency medical care is not provided for earthquake victims, who are not correctly removed from the wreckage by non-professionals and are not adequately checked by field health teams or transported to health facilities by appropriate methods (neck collar, backboard, ambulance). In that case, they could lose their lives due to unexpected health risks. Increasing disaster preparedness and capacity at the local level also increases social resilience⁴⁶. This primarily entails imparting disaster awareness, basic search-and-rescue skills, and first aid training to students and young adults. Through such training, more disaster survivors could be saved from the wreckage due to improved post-disaster competence and search-and-rescue capabilities.

Studies have found that most individuals who experience traumatic events in disasters do not develop psychopathology⁴⁷. However, disasters can impose a significant psychological burden and threaten psychological well-being in many ways⁴⁸. This supports the need for rehabilitation practices and provides an important argument for earthquake victims. Providing psychosocial support in disaster-affected areas can sometimes cause harm, for example, if psychosocial workers do not have adequate training, ignore cultural differences in interviews, engage in practices that foster addiction or follow short-term approaches⁴⁹. It has been emphasized that children with post-traumatic stress disorder do not show the same symptoms as adults, which may be overlooked by those lacking proper education⁵⁰.

4.3. *Respect for autonomy:*

Respect for autonomy entails recognizing the values and decision-making rights of individuals, enabling them to act autonomously. The principle of autonomy necessitates treating people with respect when disclosing their information, fostering an environment that encourages individuals to make decisions about themselves, and ensuring that their autonomous actions are not unduly constrained by others³². It is crucial to respect the autonomy of

both those affected by an earthquake and the service providers involved.

In the context of disasters, prioritizing an individual's autonomy can be challenging due to the primary goal of health workers during the initial response, which is to provide direct and immediate benefit to the patient⁵¹. Patients injured during the earthquakes were urgently transferred to other centers. In crisis situations, there may be instances where patients are referred for medical care without their or their relatives' explicit consent. This contradicts the principle of patient autonomy, which emphasizes the individual's right to make decisions about their own medical treatment. Relatives of the patients had to call the patients in other centers for a certain period of time.

Patient privacy and personal data protection fall under the principle of respect for autonomy. In times of disaster, patient privacy can be harmed through social media. Although social media platforms (Twitter, Facebook, etc.) are an effective communication method and are increasingly used to quickly share critical information during disasters⁵², sharing information and images of people can cause problems. During a disaster, it remains a moral duty for everyone to safeguard personal data that an individual wishes to keep confidential, respecting their privacy and ensuring that such information is not shared without their consent. Even when a greater benefit is intended, sharing such images has been seen as ethically problematic⁵³. Data privacy is another issue that should be considered in mobile applications that aim to provide psychosocial support, such as those designed by some NGOs after the earthquakes in Turkey. Care should be taken regarding whether the data are stored, whether the beneficiary's consent is obtained and who can access the data.

Infectious diseases, a significant public health problem, are likely to emerge after natural disasters⁵⁴, which may be exacerbated by poor housing conditions and inadequate hygiene. Although no such epidemics were reported following the earthquakes in Turkey, some physicians working in the field described individual cases of scabies. In the event of disease outbreaks, medical measures such as quarantines, coerced treatment and immunization may be required. Although quarantines have ethical

challenges, they are a necessary measure to increase the well-being of patients^{55,56}.

When planning emergency health services after an earthquake, the number of local health personnel and their working status should be considered⁵⁷. According to the American Medical Association Statement of Ethics, individual physicians have a duty to provide emergency medical care during disasters due to their commitment to caring for the sick and injured. This ethical obligation persists even when there are risks that exceed the normal levels of safety, health, or personal well-being for the physicians themselves⁵⁸. Although this obligation is generally acknowledged, it has also been emphasized that physicians should not be expected to place themselves at a greater risk than the benefit they can provide^{59,60}. In the aftermath of the earthquakes in Turkey, many health workers in the affected areas have continue to work in hospitals despite the harsh conditions. Although it is considered a self-sacrificing behavior, the safety of health workers affected by the earthquakes may have been endangered, violating the principle of non-maleficence.

4.4. Justice

It is crucial to address the principle of justice, particularly through the lens of distributive justice, in the context of disaster situations. Distributive justice entails ensuring a fair, equitable, and appropriate distribution of both benefits and burdens among individuals and communities affected by the disaster³². Resources related to health services are limited in natural disasters, and ethical problems may occur in allocation these resources¹. In order to minimize these ethical problems, individual, organizational and national emergency plans and policies should be prepared in advance regarding disasters and considering regional conditions⁶¹.

Health services should be provided to as many injured survivors as possible in the face of limited human resources and health facilities. However, without good planning and coordination, this may result in chaos. Therefore, an effective triage system is crucial. Such a system helps to ensure the fair delivery of healthcare services and minimize preventable morbidity and mortality during disasters^{62,63}. Effective triage management at the community level is possible when individuals know how to reduce

their risk exposure and how and where to access care in the event of a disaster⁶⁴. During times of disaster, the process of triage in healthcare services undergoes variations. In disaster triage, a classification system is employed to prioritize treatment and transportation based on the severity of injuries, with the aim of providing prompt care to the most critically injured earthquake victims⁶⁵. The objective is to allocate resources and interventions in a manner that saves lives and minimizes suffering in the most efficient way possible⁶⁴.

Health services are one of the necessities of human life and must be provided effectively under all conditions. Natural disasters create unpredictable emergency health demands that exceed the capacity of health facilities⁵¹. In addition, initially many health human resources are needed in the field and to support health facilities, although this need will decrease over time⁶⁶. For this reason, both human resources and health facilities must be prepared for disasters triage. If health facilities have inadequate capacity following a disaster, patients may have to be referred to external centers⁶⁷. Based on our field observations, the sick and injured in overcapacity areas were transferred to other centers. This action helped to ensure fairness in the provision of health services.

Since earthquakes generally affect densely populated cities with low building standards, death and injury rates are typically high⁶⁸. Individuals with a lower socioeconomic status are generally found to be less affected by disasters and possess lower vulnerability in terms of material resource loss caused by such events. They may also exhibit lower levels of resilience compared to those with higher socioeconomic levels⁶⁹. Most buildings destroyed in the earthquakes in Turkey were old buildings made of low-quality materials⁷⁰. This shows the relationship between safe housing, one of the social determinants of health, and protection from the effects of earthquakes. In the aftermath of a disaster, it is crucial for public authorities to develop plans that prioritize individuals with low socioeconomic status and those residing in temporary accommodations. These groups are often the most heavily impacted by the disaster and require special attention and support during the post-disaster response and recovery efforts¹². This planning is a requirement of the distributive

justice approach. Turkey has committed to delivering permanent residences in earthquake-affected areas within one year after the earthquake ⁷¹. Planning the construction of new houses considering the region's conditions and risks will make it easier to cope with future crises.

4.5. Limitations of the study

This study was prepared relatively quickly in response to an emergency. Since the data were based on field observations, reliable data could not be obtained from unreached areas.

Conclusions:

Ensuring the involvement of society in disaster mitigation and response is of utmost importance. National disaster plans formulated by authorities should take into account regional variations and incorporate simulations of health service delivery at all levels. Furthermore, ethical guidelines specific to healthcare providers in disaster situations should be developed and integrated into national disaster plans. The undergraduate education programs for health professionals should also include content on disaster medicine and disaster ethics. The past experiences of earthquakes in Turkey will offer vital information to decision-makers and practitioners, helping them gain insights into the magnitude of the affected area and the scale of the impacted population. This knowledge will assist in formulating effective strategies and responses in future disaster scenarios.

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Institutional Review Board Statement: Within the scope of the research, the provinces of Kahramanmaraş, Adıyaman and Hatay, which were affected by the disaster, were visited. Field observations were made in these provinces. In addition, the studies of official and non-governmental organizations were examined. Since our research is a descriptive study based on local observations, ethics committee approval was not required.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available so they are personal observations.

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