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Exploring Volunteer Pharmacists' Experiences in Responding to 2023 Türkiye Earthquakes: A Qualitative Phenomenological Study

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Abstract

Objective: Pharmacists are vital in disaster response efforts, dispensing essential medications, managing pharmacy services, consulting, and educating survivors regarding their medications. Their contributions, however, are often underrepresented in scientific literature. This study aimed to explore the experiences of pharmacists who provided pharmacy services to meet the pharmaceutical needs of the survivors after 2 major earthquakes in Türkiye in 2023.

Methods: This study adopted a phenomenological approach. Data were collected using semi-structured interviews. Purposive sampling was used to invite pharmacists who provided pharmacy services to survivors. Interview transcripts were analyzed following an inductive, reflexive thematic analysis.

Results: In total, 15 pharmacists were interviewed. Four main overarching themes “response to the earthquake,” “preparedness for the earthquake,” “experiences during service delivery,” and “mental and physical experiences” were developed.

Conclusions: From participants' experiences, it is essential to expand the clinical responsibilities of pharmacists and train them in providing wound care, administering immunization, and prescribing. Pharmacists should be integrated as essential members of disaster health teams. International health organizations, nongovernmental organizations, and governments are encouraged to work collaboratively and develop disaster management plans including pharmacists in early responders. This might help mitigate the deficiencies and overcome challenges in health-care systems to provide effective patient-centered care by health professionals and respond effectively to disasters.

Natural disasters can have profound and far-reaching impacts on communities such as disrupting infrastructure, displacing populations, and causing widespread health challenges. The aftermath of these events can have devastating effects on health, economy, and society.¹ A critical component of disaster response efforts is the provision of health-care services, which includes provision of medication and pharmaceutical care. As integral members of the health-care team, pharmacists can play a pivotal role in addressing the medication needs of populations impacted by disasters.^{2,3} Patients often abandon their homes hastily, leaving behind their medications, prescriptions, money, and even identity documents after a disaster. In disasters, where medical and health facilities may be destroyed or overwhelmed, pharmacists can provide essential medications and help bridge gaps in access to health-care services.⁴ Pharmacists can additionally offer emotional support,³ and provide compassionate care in addition to the basic and widely recognized role of distributing or dispensing medications³ as the impacts of disasters on the psychological well-being of survivors are widely recognized.⁵

While providing health-care services during disasters, health-care professionals including pharmacists, adversely impacted mentally and physically due to the immense pressure and overwhelming circumstances experienced during these catastrophic events.⁶ Emotional distress and physical exhaustion among health-care professionals are commonplace in such settings.⁷ Witnessing the devastation and suffering of survivors, coupled with the urgent need to provide critical care can lead to high levels of stress, anxiety, and trauma.^{6,8} Despite studies exploring emotional and physical implications for health-care professionals involved in disaster response,^{9,10} studies presenting valuable data regarding pharmacists' emotional experiences are rare.

Türkiye, on February 6, 2 earthquakes with magnitudes of 7.7 and 7.2 occurred¹¹; almost 50,000 people lost their lives, nearly 120,000 people were injured, and approximately 10 million people were left homeless in a single day.¹² The earthquakes caused substantial damage to the infrastructure, rendering a large number of community pharmacies in the region unusable. Thus, accessing pharmacies as well as providing pharmacy services became challenging

especially in the early weeks. As a response to the disaster, pharmacy services and provision of medication and medication services to the survivors were provided entirely on a voluntary basis by pharmacists.

Several studies^{4,13–16} have explored the potential roles that pharmacists can assume during disasters. Additionally, studies^{17,18} have assessed the knowledge of pharmacists regarding emergency preparedness. The originality of this study comes from investigating the firsthand experiences of pharmacists in the aftermath of a disaster where most pharmacies were damaged, and the remaining ones were unable to serve within widespread damaged area of approximately 350,000 km², approximately the size of Germany.^{19,20} Although there are studies^{3,21–23} examining the pandemic responses of pharmacists, a form of disaster, it is important to note that pandemics and earthquakes differ significantly in terms of their impact on health-care systems. While earthquakes, sudden onset disasters, can cause extensive physical destruction to health-care facilities, including pharmacies, pandemics, slow onset disasters, primarily overwhelm health systems due to increased demand for health-care services. Therefore, the objective of this study is to shed light on the experiences of pharmacists who volunteered during the 2023 Türkiye earthquakes. This study has the potential to enhance the effectiveness of pharmaceutical efforts in disaster management, improve patient care in disaster settings, and facilitate the development of strategies for future disaster preparedness and response, benefiting not only pharmacists but also other health-care professionals.

Methods

Study Design

This study used a phenomenology research study approach.

Participant Selection

A purposive sampling technique was used in this study to invite pharmacists who volunteered for pharmaceutical service provision in the aftermath of the Türkiye earthquakes in 2023. To further recruit participants, a snowball sampling technique was also used in this study.

Participants were identified by gatekeepers, and they helped invite prospective participants to this study by means of emails and phone calls. If interested, people were directed to contact the research team for further information and participation.

Data Collection Tool

The authors (M.B.U., G.G., and A.I.) prepared a semi-structured interview guide (Appendix 1) in the English language through studying relevant literature and reaching a consensus in 2 weekly meetings. For face and content validation of the interview guide, Brislin's Translation Model²⁴ was performed. Brislin's Translation Model is a continuous cycle involving multiple rounds of separate translations followed by blind back-translations conducted by a team of bilingual translation experts, repeated until the back-translation accurately mirrors the meaning and matches the content between the original and translated versions of a tool or instrument.²⁴ M.B.U. and G.G., the bilingual translation experts, individually translated the interview guide into Turkish. M.B.U. and G.G. translated the guide back to English and compared them to see if the content had retained its original meaning. M.B.U. and G.G. checked each interviewer's translations from Turkish to

English and vice versa to improve translation validity. After the final decision on the Turkish version, the interview guide was pilot tested on 2 community pharmacists who volunteered in the earthquake zone. Some minor changes have been made in terms of the content and the sequence of questions. The semi-structured interview guide was used as an exploratory guide and mainly focused on exploring the barriers and challenges faced by pharmacists during and in the aftermath of the earthquakes, the response and preparedness of current pharmacy services in Türkiye, and their motivation and experiences to become volunteers in providing services in case of a disaster.

Data Collection

The interviews were conducted from March to April 2023 by authors M.B.U. and G.G. Both in-person and virtual interviews were offered to each participant to facilitate participation from a wider geographical area and allow convenience to the participants. For in-person interviews, a convenient place near to participants was chosen, whereas virtual interviews took place over Zoom. The interviews lasted from 1 to 2 h. All interviews were audio-recorded after obtaining participants' consent. The interview guide was reviewed after the first 2 interviews, but no changes were made to it.

Data Preparation

Data transcribing process involved several steps. First, the audio recordings in Turkish were transcribed verbatim. The transcriptions were all in Turkish and were saved to a Microsoft Word document. A sample of a Turkish-language transcription excerpt was provided in Appendix 2. All transcripts in Turkish were translated to English separately by 2 bilingual authors (M.B.U. and G.G.) who are qualitative researchers in the field of social pharmacy, to ensure accuracy and consistency. To validate the translations, a back-translation method²⁴ was used that was the same as that used in data collection, where the translated content was re-translated back into the original language by crossing the initial translations between M.B.U. and G.G. This back-translation method was conducted for each transcript. This step helped to identify any potential discrepancies or errors in the initial translation. Finally, M.B.U. and G.G. collaborated and reached a final agreement on the translations, ensuring that the most accurate and appropriate representation of the content was achieved. All the interview transcripts were de-identified by assigning a protocol number as follows: "P" (for participant) and the sequence number of the interviewee and their working area (eg, P1, hospital pharmacist).

Data Analysis

The content in transcripts was analyzed using an inductive reflexive thematic analysis to identify key themes, categories, and sub-categories. The 6-step analysis framework by Braun and Clarke was used.²⁵ Data were analyzed using Microsoft Word, independently by M.B.U. and G.G. to reduce individual bias. Themes, categories, and sub-categories once developed were transferred to an Excel sheet. Both M.B.U. and G.G. met every 2 wk to discuss the potential reflection of ideas and themes during the analysis. The entire research team reviewed and commented on the final set of themes and reached consensus.

Trustworthiness

To ensure the accuracy of the findings, credibility, transferability, and confirmability processes were performed.²⁶ For credibility,

member checking^{27,28} was used. Themes, sub-themes, and codes along with relevant quotes were sent to 1 of the participants from whom the richest data were collected during interviews, to introduce rigor and reduce any bias. The participant reviewed the final set of themes developed and provided feedback. For transferability, a thick description^{28,29} of the setting, participants, quotes, and data collection and analysis process was provided in detail. For confirmability, investigator triangulation was applied. The author A.I. (an external investigator who did not belong/and was not present in Türkiye at the time of the earthquakes) helped sense check the potential subthemes and themes and helped increase the credibility of the data analysis process.

Ethics Approval

This study received ethics approval from the Gazi University Ethics Committee (Reference number: 2023 - 260). Informed consent was obtained from each participant.

Results

Fifteen pharmacists were interviewed, of those, 6 (40%) were female. No participants withdrew from the study. Eleven (73%) of the participants had an overall pharmaceutical care provision experience of more than 10 y and 4 (27%) had experienced between 5 and 10 y. One of the participants was a clinical pharmacist, 1 was a hospital pharmacist, 3 academicians who served as community pharmacists in the past, and 10 were community pharmacists.

The findings report 4 main themes: (1) response to the earthquake, (2) preparedness for the earthquake, (3) delivering pharmaceutical care services, and (4) mental and physical experiences (Table 1). Quotes related to sub-categories were provided in Table 2.

Theme 1. Response to the Earthquakes

All the participants shared various factors that had an impact on their participation to volunteer to visit and provide pharmacy services to the affected populations.

Category 1: Motivation

This category includes factors impacting the motivation of pharmacists to volunteer for providing pharmacy services.

Sub-category 1: Altruistic motives

Nearly every participant highlighted that altruism motivated them toward helping people in need during the disaster. These participants felt a strong sense of responsibility as health-care professionals which led to the desire to help people as volunteers.

Sub-category 2: Economic stability

The financial capability to travel to the disaster zone and cover their living expenses in the disaster zone enabled most of the participants to volunteer. Some of the participants shared that they personally covered all the expenses required for traveling to the zone and did not receive any allowance or support from neither any nonprofit organization nor the government for disaster response activities. Some reported that financial support should be provided to pharmacists to help cover their travel costs, accommodation, and food as they are integrated health-care team members too.

Sub-category 3: Self-confidence

Some of the pharmacists shared that they had previously volunteered in a 2021 fire disaster on the south coast of Türkiye. Having that disaster management and relief experience provided them with a learning experience and that has positively impacted their self-confidence in taking on the role of volunteer pharmacist in the earthquake zone. However, most of the participants discussed that they had not received proper disaster management education or training, which could have impacted their competency to respond to the emerging needs in the disaster zone. All believed that receiving disaster education and training would potentially increase their competency as well as their skills to respond to disasters efficiently.

Theme 2: Preparedness of Pharmacy Sector for the Earthquakes

Participants shared gaps in the overall health-care system and highlighted barriers that impacted the preparedness of the pharmacy sector for the earthquake disaster zone.

Category 1: Logistics Management

Some shared that they encountered many challenges related to logistics management that impacted their ability to help provide medicine and pharmacy services.

Sub-category 1: Workforce identification and management

Most of the pharmacists faced recognition difficulties in disaster zones, as identification cards were not consistently checked before working at field pharmacies. The absence of identification badges or verification processes posed a risk of medication abuse. Lack of uniforms and signage made it difficult for survivors to identify pharmacists, leading some of the participants to create makeshift signs (Appendix 3). One participant reported that there was a gender imbalance, with more male pharmacists, but instances arose where female pharmacist care and support were needed. Most of them highlighted the absence of orientation for new team members heading to the earthquake zone that created issues that could have been addressed through a training session to communicate essential information and expectations.

Sub-category 2: Medicine supply

Türkiye's ongoing drug shortage, primarily caused by drug pricing policies, particularly affects the availability of essential medicines like antibiotics. The earthquake exacerbated the already existing issue of medicine shortages, particularly intensifying the situation in the affected zone. Some highlighted the lack of a centrally coordinated medicine supply, relying on donations from community pharmacists and the public. This was considered a sign of government inefficiency in coordinating the logistical needs by some of the participants. Other challenges mentioned were unnecessary medicines in the shipments, disorganized and unlabeled medication boxes, and the inclusion of used and expired medicines from the public, impacting the quality and effectiveness of administered medications. These issues hindered the ability of participants to provide optimal care in the earthquake zones. Few reported that donated medicines, including used and expired ones, created difficulties, and presented challenges in maintaining standards and ensuring the safety and effectiveness of the medications administered.

Table 1. Themes, categories, sub-categories, and codes related to the experiences of volunteer pharmacists after 2 major earthquakes in Turkey in 2023

Themes	Categories	Sub-categories	Codes
Response to the earthquake	Motivation	Altruistic motives	Sense of being useful
		Economic stability	Lack of personal budget to become volunteer pharmacist
		Self-confidence	Experience in previous disasters Lack of training leading to low self-confidence
Preparedness of pharmacy sector for the earthquake	Logistics management	Workforce identification and management	Poor management of pharmacy workforce - Lack of uniforms and signs - Identification issues - Gender balance in volunteer pharmacists - Duration of volunteer service in the field - Safety concerns - Orientation
		Medicine supply	Medicine shortages Medicine donation Challenges in transported medicines
		Infrastructure	Accommodation and food Standards for field pharmacies to serve
	Coordination management	Leadership	Lack of unity in command
		Communication	Misinformation on social media Weakness of media in managing the rumors
Delivering pharmaceutical care services	Dispensing medicines	Prescription not available No access to electronic systems	Having to dispense without prescription Challenges in checking patient medical history
	Communication with survivors	Challenges in counseling	Lack of time for patient engagement
		Challenges in language differences	Providing pharmacy services to immigrants
Mental and physical experiences	Emotional experiences	Emotional burden	Intense stress - Witnessing human suffering, guilt, or shame Moral distress - Limited resources
		Positive emotions	High professional fulfillment - Providing free of charge services and medicines
	Physical experiences	Physical fatigue	Heavy lifting and manual labor Working long hours Physical discomfort, dehydration, and exhaustion

Sub-category 3: Infrastructure

All participants addressed various issues about infrastructure. These were coded as vulnerable accommodations, inadequate water, food, heating equipment, toilets, and baths. In addition, the lack of facilities in disaster zones also came as a challenge to some of the participants to properly store and maintain medications that required refrigeration (Appendix 4). Many participants highlighted safety concerns as a significant challenge. They stated that the arrival of thieves from neighboring regions and overcrowding contributed to a state of disorder and insecurity in the affected areas. In addition, a few of them shared there was an increased risk of medication theft and potential of harm to them, because of the lack of appropriate security measures.

Category 2: Coordination Management

This category represents the participants' statements about the poor coordination of several health authorities and communication on social networks, which lead to the following subcategories.

Sub-category 4: Leadership

Some observed that confusion and overlapping of operations, along with a lack of clarity in assigned tasks, emerged because of conflicts of interest among different commanding authorities, such as the Ministry of Health, Red Crescent Society, and the Turkish

Pharmacists Association, due to unclear delineation of roles. This led to difficulties for pharmacists in providing efficient services.

Sub-category 5: Communication

The spread of misinformation on social media regarding the medical requirements of the survivors influenced decisions related to medicine supply, as the supply relied heavily on donations from pharmacists and the general public. Inadequate efforts in organizing, controlling, and monitoring news on social networks resulted in the circulation of rumors, leading to the donation of unnecessary medicines.

Theme 3: Delivering Pharmaceutical Care Services

All shared many challenges when providing pharmaceutical care services to the affected populations in disaster zones.

Category 1: Dispensing Medicines

All the participants dispensed medicines without prescriptions due to the chaotic atmosphere and inability to find prescribing physicians due to excessive demand. In most cases, prescription-only medications, such as antibiotics, pain relievers, tranquilizers, stimulants, and sedatives, were dispensed without prescriptions. When survivors requested a prescribed medicine, some of the participants had to rely solely on the information provided by

Table 2. Quotes representing sub-categories

Sub-category	Quotes
Altruistic motives	<i>When I stepped up to the plate, I felt that there was a purpose for me in life . . . voluntarily interacting with earthquake victims and feeling the happiness in their eyes greatly impacted me. With this motivation, I eagerly took up the role of volunteer pharmacist at three different times in the zone. (P13: academic pharmacist)</i>
Economic stability	<i>So many colleagues wanted to be volunteers . . . but they didn't have sufficient budget to cover the costs. Pharmacy organizations or the government should allocate funds to meet the needs of volunteer pharmacists in extraordinary circumstances to support being volunteers. (P9: community pharmacist)</i>
Self-confidence	<i>We had previous experiences in preparing burn creams to the victims in fire disaster in 2021. With this knowledge we were able to know how to react fast (P11: community pharmacist)</i>
Workforce identification and management	<i>No one asked me about my pharmacist ID! I'm thinking now that someone could come in and take a part in the tent pretending like a pharmacist. Nobody can recognize if it would have happened, the atmosphere was so chaotic! (P1: academic pharmacist)</i> <i>We should have been given at least a white shirt saying that we were volunteer pharmacists and a sign of pharmacy to direct patients. Was hard to realize pharmacists as volunteer staff and the place where we provided pharmacy services. You couldn't think about these things in a rush to help, but at least a few things like these should have been arranged before, given to the importance of the work we did. (P5: community pharmacist)</i> <i>The majority of those who volunteered were men due to the harsh conditions in the zone. However, we needed female volunteers. Because the patients needed to ask for a woman pharmacist, for example, she might be pregnant, she can ask for a pregnancy test. I know there is no shame in this, but some parts of our society still have not overcome it. There should be a balance in female and male pharmacists. (P10: community pharmacist)</i> <i>A significant problem was the lack of orientation for the new team members who were about to embark on a journal to the earthquake zone. Conducting a training session would have provided an opportunity to convey vital information about the zone's conditions and what they could expect upon arrival. Without such preparation, they missed to get these valuable insights into the environment of the zone. (P9: community pharmacist)</i>
Medicine supply	<i>In the early days after the earthquake, we were short of painkillers and antibiotics. We all know that antibiotics were already scarce in the market before the earthquake, and this problem was felt even more acutely with the earthquake. (P9: community pharmacist)</i> <i>The government should have taken the initiative before community pharmacists responded to the situation. The government should have established itself, and then I can go for help individually. However, it was the volunteer pharmacists who established the service in the zone and even provided donations to help supply medicines on their own. Would AFAD (government organization of Disaster and Emergency Management Presidency in Turkey) ever seek supplies from volunteer pharmacists? Can it be real? Can anybody explain this weirdness? We absolutely would like to contribute through our personal donations, but in a society governed by a responsible government, such organization and coordination should ideally be the government's responsibility, not ours. (P11: community pharmacist)</i> <i>Huge packages containing different class of medications! You couldn't know what was inside the package, and anything could come out. Wish there was shipping labels outside them . . . so we could say these are analgesics, these are antibiotics . . . (P9: community pharmacist)</i> <i>At first, we forgot to check the expiration dates of the medications we received. Seeing an expired medicine came as a shock to me. At this moment, I realized that we should have checked the medicines before handing them over. Unfortunately, as time passed, some patients returned to the pharmacy, expressing their dissatisfaction and complaints about receiving expired drugs. It was an incredibly embarrassing moment that I will never forget. (P9: community pharmacist)</i>
Infrastructure	<i>We could not find a suitable place to stay. The area where we were stationed during our work was desolate, and staying in a car was not an option due to the harsh weather conditions, particularly the cold. Eventually, we were directed to a house situated in a remote area. However, intermittent power outages added to our discomfort. As three female pharmacists, we felt frightened and unable to sleep due to the prevailing sense of fear and insecurity. (P8: community pharmacist)</i> <i>I brought incontinence pads with me as a precautionary measure, as it was reported that there were no functioning toilets in the affected zones. Fortunately, we had access to emergency room toilets in the hospitals. However, other colleagues in different zones were not as fortunate and had to resort to digging holes to meet their sanitary needs. (P5: community pharmacist)</i> <i>Each group of volunteer pharmacists in different zones established their field pharmacies based on their own methods and available resources. In addition, we had no refrigerator for insulins, so we had to store them outside, despite the plummeting temperatures at night. Regrettably, this led to significant wastage of insulin (P9: community pharmacist)</i> <i>We struggled with security problems in the first week. A pharmacy across the hospital that was not destroyed during the earthquake was at risk of being looted. There were so many suspicious people around that led us afraid. (P15: hospital pharmacist)</i>
Leadership	<i>We had to move the field pharmacy a few times. We had a disagreement over where to serve with the hospital administrative staff as they said they needed the tent for emergency patients in which we were working. They warned us several times, "Empty the tent. We don't need you here!" We also closed the field pharmacy and did not serve for a while. Then the provincial health director arrived and apologized, and we resumed the service. (P14: community pharmacist)</i>
Communication	<i>Instagram was full of misinformation. For example, a doctor shared a post on Instagram saying that there were no sedatives in the disaster region. Then tons of sedatives arrived though we did not need them. (P15: hospital pharmacist)</i>
Dispensing medicines	<i>If a patient didn't have a prescription and asked for a drug that could be abused, we first looked at the patient's physical appearance before deciding whether to give it. Then we asked some questions like 'Why are you using it? How many do you take a day? What is your illness?' and decided to give them the drug if they gave reasonable and sensible answers. (P3: academic pharmacist)</i>
Challenges in counselling	<i>Sometimes we had to distribute generic equivalent or same medication but with different milligrams (dose), because they were out of stock. We provided instructions to patients on how they can use the tablets by breaking. However, we were not sure how well the patients or their families understood us in that crowded and stressful situation. It was possible that they might have forgotten the instructions once they returned to their shelters. (P9: community pharmacist)</i>

(Continued)

Table 2. (Continued)

Sub-category	Quotes
Challenges in language differences	<i>The region we went was close to the border, there were too many immigrants. They were hardly speaking Turkish and we also didn't know Arabic. The local people of the region who knew Arabic helped us in communicating with them. (P8: community pharmacist)</i>
Emotional burden	<i>One day, I took medicines to a victim who was staying at a tent near the zone. I realized how desperate they were when I was there. We were serving behind the counters in tents and no chance to see how they were surviving. I witnessed the real misery when I saw the children around the tents trying to warm themselves by the fire at minus fifteen degrees with slippers on their feet. People were covered in mud, without spare clothes. After seeing that scene, I couldn't feel alright. (P4: community pharmacist)</i> <i>On the first night after we returned, I cried until morning. You feel like you have left the people there alone. Because you feel that you were useful there, that you gave healing, that you helped people. Upon your returning, there was a feeling that I had done nothing, that I had not thought of those people at all, and I couldn't get rid of that feeling for four or five days after my return (P10: community pharmacist)</i> <i>A woman came and asked for diapers for her baby. We were able to give only four pieces. I have a child myself and I know that four diapers would only last for half a day for a new-born. I was struggling with this emotional burden. On the second day, I got used to this feeling and saying "no" to patients. (P5: community pharmacist)</i> <i>So unreasonable for a volunteer pharmacist to stay in the area for only three days for provision of service. People who spend short time in the field are more likely to be more susceptible to experiencing severe psychological distress upon their return. They need to stay longer to adopt themselves in the area. I have stayed in the field for fourteen days. (P12: community pharmacist)</i>
Positive emotions	<i>Think of the cheapest medication you can imagine. If it is THE NEED at that moment, it becomes the most valuable piece. When profitability disappears, and medications are no longer commodities, the most valuable thing becomes the pharmacist's knowledge. As volunteer pharmacists, we experienced this feeling that medicines are no longer traded goods. I can't even describe the professional fulfillment I felt. (P11: community pharmacist)</i>
Physical fatigue	<i>A profound physical struggle unfolded in that environment. One of our colleagues experienced bleeding feet after being confined to shoes for three consecutive days. Swelling of the eyelids, face, and legs due to edema was observed among our team members. (P9: community pharmacist)</i>

the patients themselves as they were unable to check patient medication history by means of electronic records. This reliance on patient-provided information posed difficulties in accurately assessing medication needs and ensuring appropriate dispensing practices.

Category 2: Communication

Most participants expressed some barriers in communicating with survivors which impacted the quality of pharmaceutical care provision.

Sub-category 1: Challenges in counseling

Most participants highlighted the challenge of limited time for counseling due to the presence of large crowds waiting for medications. This constraint resulted in pharmacists being unable to provide sufficient information, which could have potentially led to issues with medication usage and adherence.

Sub-category 2: Challenges in language differences

Pharmacists shared that the disaster zones had people from across the border. This created a language barrier and posed a significant challenge for pharmacists providing services to Syrian survivors near the borders of Türkiye.

Theme 4: Mental and Physical Experience

Pharmacists shared that volunteering as a pharmacist in a disaster was both mentally and physically demanding.

Category 1: Emotional Experiences

Pharmacists shared that their emotional experiences encompassed a range of both positive and negative emotions.

Sub-category 1: Emotional burden

Witnessing human suffering, including injuries and loss of life, during the service provision was emotionally distressing for volunteer pharmacists. They experienced feelings of sadness, helplessness, and grief that persisted even after returning home. The guilt and shame of leaving survivors in need added to their emotional burden and made readjusting to normal life challenging. Providing care in morally challenging situations due to resource shortages further contributed to their distress. Shorter volunteering durations were associated with increased emotional stress due to not being able to become familiar with the existing burden in the zones.

Sub-category 2: Positive emotions

The act of providing medicines to those in need, without any monetary exchange, gave pharmacists a profound realization of the noble profession and the impact they could make in the lives of others. This transformative experience left the pharmacists with a deep sense of fulfillment and reinforced their commitment to serving the community in times of crisis.

Category 2: Physical Experiences

Pharmacists shared that the earthquake response efforts demanded a great deal of physical exertion from pharmacists, who had to work extended hours in stressful and demanding environments. The constant movement, lifting of heavy objects, and nonstop work contributed to physical fatigue, soreness, and an increased risk of injuries and diseases (Appendix 5).

Discussion

The findings of this study report novel findings about volunteer pharmacists' experiences during an ongoing disaster. Study findings reported that pharmacists had no external financial

support available to support their volunteer efforts. This remains a challenge for many pharmacists who would like to help people by providing services in an emergency disaster. In addition, pharmacists reported that even in zones, they were not provided with living arrangements to facilitate their stay, and they had to figure out these logistics and finance it themselves. Despite the altruistic motivation of pharmacists, authorities should focus on providing financial support, transport, food, and accommodation for them. In a study exploring health-care volunteers' experiences during the 2015 Nepal earthquake, financial incentives provided by governments and/or professional bodies would support their households during their absence and they were able to continue working in peace.³⁰ Other studies also indicate that volunteer health-care team members, when motivated by incentives, are able to continue delivering services without experiencing any financial restraints or debt concerns.^{31–33}

Findings reported that a few participants who had previous experience in volunteering services during disasters felt more confident in providing services and quickly adapted to the new role. This remains consistent with previous research,^{34,35} and pharmacists should be trained and equipped with necessary skills and competencies required to fulfill their responsibilities in an unorganized, chaotic environment and be able to provide the best possible care with limited supplies in a stressful setting. From a health systems perspective, managing the workforce during disasters involves efficiently organizing and coordinating health-care volunteers to address and handle the heightened needs and complexities of a disaster situation. It involves strategic planning,³⁶ deployment, coordination,^{37,38} and support of personnel³² involved in disaster response and recovery efforts. Effective workforce management ensures that the right people are in the right place at the right time, with the necessary skills and resources, to address the needs and challenges emerging in disaster zones. However, the findings indicate a lack of coordinated efforts to deploy pharmacists to disaster zones, resulting in operational challenges that affected the capability of pharmacists to assist survivors. The study identified logistical challenges impacting pharmacy service provision, including a lack of identification, gender imbalance among volunteers, safety concerns, and insufficient facilities, equipment, and orientation. Similar challenges were mentioned in previous studies.^{31,33,39–41}

In addition, these challenges also negatively impacted the mental^{7,42–44} and the physical well-being^{10,33,42} of volunteers, and could significantly impact their health.^{40,45} Following a disaster, health-care professionals commonly experience distressing feelings.^{46,47} Thus, prioritizing the follow-up of volunteers' mental and physical well-being after their service provision is essential.³⁸ Pharmacy national bodies along with health departments need to establish a comprehensive workforce management plan including identifying potential hazards, assessing risks, defining roles and responsibilities, and developing protocols and procedures for various scenarios in disasters.^{36,48} Moreover, this plan could lead to preparing a pool of qualified personnel in advance, determining the number and types of personnel needed, as well as the necessary equipment,³¹ supplies,³⁹ and facilities⁴¹ required to support their efforts, providing transportation,⁴⁹ accommodation,^{31,40} food,³³ and equipment³³ to support the workforce, ensuring the safety^{39,50} and well-being of the workforce. Planning the post-disaster recovery³⁵ processes can provide the reintegration of the workforce into normal operations.

Due to a lack of coordination in distributing medicines and the ongoing medicine crisis, all zones received donated

medicines, including expired and leftover medications. Pharmacists, overwhelmed with responding to medical needs, had limited time for medication checks, potentially leading to irrational use and adverse effects. Establishing effective coordination mechanisms among donors, relief agencies, and local health authorities should be vital. This includes clear communication channels to ensure that donated medicines align with the actual needs of the disaster-affected population. Moreover, a lack of studies on the exploration of international medication donations has been observed. This issue should be analysed in terms whether the international medication donations were well-coordinated and aligned with the needs on the ground. This involves assessing the relevance of medications, safety and quality, supply chain logistics, and monitoring and evaluation of internationally donated medications. Another challenge identified was the lack of basic facilities, such as refrigerators in the field pharmacies, impacting medication quality. Pre-determined standards for field pharmacies with sufficient infrastructure should be defined to support pharmacy service operations. Training for pharmacists and enforcing rigorous quality control measures are necessary to prevent the inclusion of expired or substandard medications in transported supplies.⁵¹ Coordination among pharmacists, hospitals, and medical teams to control inventory and medication movement is also essential.⁵²

Managing medicine shortages during disasters becomes even more challenging when a country already experiences shortages.⁵³ The medicine shortage in the disaster area was exacerbated by the ongoing medicine crisis in Türkiye, where citizens face difficulties finding basic antibiotics due to the government's drug pricing policy.⁵⁴ The policy keeps medicine costs below the real Euro-Turkish lira conversion rate, making it challenging to market many medicines, especially antibiotics, in the country. The shortage affected various categories of medicines, including pediatric medicines, antibiotics, antipyretics, pain killers, allergy syrups, migraine medicines, cancer drugs, and imported medicines.⁵⁵ Potential solutions include implementing long-term policy reforms to address the underlying causes of shortages, developing sustainable pricing models,⁵⁶ encouraging local production of essential medications,⁵⁷ and providing incentives⁵⁸ to domestic pharmaceutical companies.

In this study, another highlighted factor was that pharmacists reported struggling to authenticate patient demands due to the lack of prescriptions and access to medical records. Consequently, they ended up dispensing medications without prescriptions. Similarly, during a natural disaster in Puerto Rico, limited resources led pharmacists to distribute medicines without prescriptions.¹³ Access to the Internet is crucial for effective medication distribution in affected areas. Incorporating digital health technologies⁹ into disaster plans and expanding the clinical roles of pharmacists, including prescribing and medication counseling, would be highly beneficial in emergency situations with physician shortages.^{59,60}

While social media can serve as a platform to inspire individuals to engage in humanitarian efforts,^{37,42} it can also lead to the spread of inauthentic information, misinformation, and disinformation if not properly supervised.⁹ To address this issue, it is essential to establish clear and reliable communication channels. This can be achieved by creating official channels, such as dedicated websites or hotlines, where accurate and verified information regarding medication needs and donation processes can be shared.

Language barriers play a crucial role in post-disaster situations due to their impact on communication.^{61,62} Hence, countries like Türkiye, which have a significant number of immigrants, should

adapt their disaster management plans to address the vulnerability caused by language differences among immigrants and health-care professionals affected by the earthquake.

To effectively prepare and empower health-care professionals to respond to disasters and encourage volunteering, further research to explore and enhance our understanding of how health systems indirectly impact volunteer health-care professionals during such events is needed.

Limitations

There are some limitations that should be acknowledged. First, a sampling bias may be occurred as the findings of this study reflect the experiences of pharmacists who volunteered in a highly destructive earthquake scenario that were selected by purposive sampling. Therefore, the challenges faced by pharmacists may differ in different types and magnitudes of disasters and cannot be generalized. Although there are several advantages, collecting data by means of virtual interviews is a debated issue in terms of data quality due to synchronization problems.⁶³ Furthermore, to gain a comprehensive understanding of how pharmacists, as health-care professionals, respond to disasters, it is essential to include all pharmacists in the study, not just those who had this special experience during these earthquakes.

Conclusions

This study exploring the pharmacists' volunteering during the 2023 Türkiye earthquakes uncovered multifaceted challenges. From logistical hurdles hindering service delivery to the emotional and physical toll on these professionals, the findings underscore the urgent need for comprehensive disaster preparedness plans. Lack of coordinated efforts, medicine shortages, communication breakdowns, and language barriers compounded the difficulties faced by pharmacists, impacting both their ability to provide effective care and their own well-being. The study's insights advocate for systemic reforms, including financial support, robust logistics, workforce management, and clearer coordination mechanisms. These reforms not only bolster pharmacists' capacities in disaster response but also pave the way for enhanced health-care resilience in the face of future calamities. Navigating the intricacies of disaster response emphasizes the vital importance of prioritizing the mental and physical well-being of health-care volunteers, necessitating continuous support and interventions beyond the immediate aftermath. The study highlights the pressing need for systemic improvements and a holistic approach to fortify the role of pharmacists and health-care professionals in disaster management, ultimately serving the broader community's well-being.

Supplementary material. The supplementary material for this article can be found at <https://doi.org/10.1017/dmp.2024.48>

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