


Letter to the Editor

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Pharmacist Services in the Aftermath of the February 6, 2023, Earthquake in Turkey: Lessons Learned

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Turkey is located on various fault lines, and many destructive earthquakes have occurred on these fault lines throughout history. Most recently on February 6, 2023, 2 destructive earthquakes occurred within 9 hours on the eastern Anatolian Fault Line in Southern Turkey. The magnitudes of the earthquakes were 7.7 and 7.6, respectively, according to the Richter scale (M_L).¹ The provinces most affected by the earthquake, primarily Kahramanmaraş, Hatay, and Adiyaman, have been recorded as a region encompassing a total of 10 provinces.¹ In this letter, we aimed to summarize the provided services of Turkish pharmacists during the severe earthquakes and their roles in disasters.

Studies were carried out mainly by Ministry of Health (MoH), as well as the Disaster and Emergency Management Presidency (DEMP). In addition to governmental organizations, many nongovernmental organizations also took an active role in Kahramanmaraş's earthquake.¹ Due to the earthquake, hospitals and pharmacies were severely damaged, and the continuity of health services was disrupted. As a result of the interruption of the treatment of the patients, and the inability of the pharmacists in the region to operate, adequate health services could not be provided. Even with such a devastating disaster, the continuity of workflow healthcare services tried to be restored by government officials and volunteers.

According to the International Pharmaceutical Federation, community pharmacists play an active and important role in disaster prevention, mitigation, and preparedness, as well as response and recovery plans.² Pharmacists provide patient care through health protection, management of drug therapy, and preventive health services. In such disasters, pharmacists can proactively contribute to first aid, triage, and immunization, as well as fight against infections, and provide first aid services, along with the treatment of increasing hygiene problems.³

Unfortunately, most of the pharmacies in the affected region became unavailable. Therefore, immediately after the earthquake, a disaster crisis desk was established by receiving up-to-date information from the headquarters of the chambers of pharmacists in the earthquake zones and the MoH. A continuous flow of information about the status of pharmacies and medication requirements was provided by pre-designated pharmacists for emergency situations in each region. Thus with rapid response protocols, the Turkish Pharmacists Association's (TPA) Mobile Truck Pharmacies were quickly prepared and shipped to the most affected city in Kahramanmaraş on the morning of February 6, 2023. TPA and Red Crescent then provided 5 container/mobile pharmacies and 5 large capacity inflatable field tents for the distribution of medicines and medical materials.⁴ All of the container/mobile pharmacies sent were full-fledged. They had all the needed equipment, such as generator, refrigerator, and computer system. Shortly after the earthquake, operators established hotspot points in designated areas, ensuring the continuity of communication and Internet. Free Internet access was provided by telecommunication companies through hotspot points to everyone in the affected areas.

Through the central health systems such as E-NABIZ, MEDULA etc., which are currently used in Turkey, the electronic health records of the patients were safely accessed by the health-care professionals. Some arrangements were made to facilitate the access to medication for patients affected by the earthquake. For instance, a special code was introduced for the earthquake-affected region, allowing patients with chronic medication needs to obtain their medicines regardless of whether they had them on hand or not.

The management of needs and resources went through a dynamic process. Initially, based on the estimated needs lists, essential drugs were determined and shipped to the area. Then, the supply of medicines and medical materials was provided based on feedback received from doctors and pharmacists working in the region. Additionally, a "Disaster Aid" campaign was launched with pharmacists serving in different regions, as well as "Pharmacist Chambers" to ensure the supply of medicines and medical materials in the regions. With the aid campaign (created through the Farma-In-Box program) which ensures the flow of drugs and products among pharmacists, drugs and medical materials were procured. Subsequently, under the coordination of the MoH and TPA, efforts were made to organize the medicine and medical materials for

special patient groups (such as diabetics, eye disease patients, dialysis patients, and celiac disease patients, etc.).

Medical aid was deposited in Istanbul and Ankara, transported to Şanlıurfa Airport, then moved to the disaster area by trucks. In order to facilitate the access of earthquake victims to existing TPA container/ mobile pharmacies, a website (afet.teb.org.tr) was launched on February 9, 2023, with the current location information of the pharmacies.⁵

Although there were deficiencies, the MoH and TPA tried to provide health services with a superior effort in such a devastating disaster. Similar to other crises, gastroenteritis, infected open wounds, and cholera, as well as scabies, etc. outbreaks were common.⁵ Upon the emergence of epidemic diseases in our region, magistral drugs were prepared by pharmacists, especially for cases of scabies and diarrhea. Warnings and notifications regarding infectious diseases were made continuously by the MoH and TPA.⁴

In the week following the event, it was very difficult to reach a physician and hence pharmacists faced many challenges. For example, although medicines and medical materials had been systematically gathered in pharmacist chambers, the sorting and distribution of individually sent medicine donations caused challenges (e.g., time loss and workload). Additionally, limited hotspot points hindered pharmacists' access to the Internet and reliable information, consequently disrupting patient-oriented services. Aid reached the center but could not sufficiently reach the rural areas of the regions due to organizational shortcomings. The number of volunteers was initially high during the early stages of the earthquake but reduced after a couple of weeks, leading to a shortage of pharmacists and pharmacy staff.

Emergencies such as earthquakes, floods, and pandemics are events that could occur in any country. In such cases, the important thing is to provide a pre planned protocol. Healthcare workers should receive continuous training in disaster response before the disaster occurs. Within the scope of the trainings, pharmacists should be able to provide services at warehouses with stored medicines to be used in such disaster and management plans of inventory management. They should also be equipped with adequate knowledge on alternative options for treatments in case of possible drug shortages. Additionally, public officials and local community leaders should be trained on disaster interventions to be implemented in the relevant region. The scope of the training should include effective management of the regional administration, such as communication with the centers, ensuring accurate information flow/resources stewardship, and distribution, as well as determining alternative transportation routes in advance and conducting periodic drills. In addition, the citizens in the region should receive

long-term disaster training in order to take an active role in disaster periods. It would be valuable for citizens to support increased workload with the services they can offer under the supervision of a pharmacist (public awareness campaigns on proper medication usage, storage, the role of pharmacies in disaster response, and logistic support, as well as delivery of medicines to patients who are unable to access pharmacies and sanitation processes, etc.). In conclusion, it is clear that training and flexible plans are crucial for disaster response.

Also, it is obvious that there is a need for pre planned, evidence-based, emergency action plans for natural disasters and other emergencies, structured according to the geographical, social, and demographic characteristics of the region. Another vital point is that the emergency action plans to be developed should be adaptable and accessible for improvement, accepted by all involved authorities and adopted by the local administrative bodies. These are clearly valid considerations informed by this work.

After this disaster, the importance of acting consciously and providing coordination of pharmacists has emerged in terms of maintaining the health service in the region. Many international pharmacy authorities in the world have published emergency action plans (EAPs) for pharmacists to provide safe and effective service in disaster situations. Thus, the aim is to provide the most effective health service as soon as possible by preventing possible complications in a disaster and emergency. The development and continuous updating of nationalized disaster and emergency EAPs and the inclusion of pharmacists in the existing EAPs are necessary in Turkey, which is an earthquake country. Pharmacists are an important intersection in the health-care system and a key player in society.⁵ These EAPs, which will be created by including pharmacists, will benefit patients and the future of healthcare.

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