

The Place and Importance of Pharmacy Services in Disasters[#]

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The place and importance of pharmacy services in disasters

Afetlerde Eczacılık Hizmetlerinin Yeri ve Önemi

SUMMARY

Disasters which are called as “a situation that resulting in usually significant financial losses, relocation of people and/or victims, significant deterioration occurs in society balance or in the balance or a combination of these conditions and usually sudden and severe watching a disaster” by the World Medical Association, is described as a public health problem and especially because of its losses very important in terms of health care.

The scope of the Regulation on the Principles of Disaster Emergency Response Organization and Planning, meeting the needs of the health-related medical supplies and drugs that will be needed in disasters left to the responsibility of the Ministry of Health.

Pharmacies providing services to meet the needs of drugs for society and in times of disaster is also known that these services continued. Many activities are conducted within the Turkish Pharmacists' Association and related pharmacists chambers play an important role in meeting the needs related to the disaster.

In this study, pharmacist role in carrying out regular monitoring of the health services in disasters and meeting the needs will be examined and studies carried out in disasters until now will be tried to be determined.

Key Words: Disaster(s), pharmacy services, pharmacist(s)

ÖZET

Dünya Tabipler Birliği'nin tanımına göre; “Genellikle önemli derecede maddi kayıp, insanların ve/veya kurbanların/afetzedelerin yer değiştirmesi ve/veya toplum dengesinde önemli ölçüde bozulma meydana gelmesi ya da bu durumların bir bileşkesi şeklinde sonuçlanan ve genellikle ani ve şiddetli seyreden bir felaket durumu” olarak adlandırılan afet; bir halk sağlığı sorunu olarak nitelendirilmekte ve özellikle neden olduğu kayıplar sebebiyle, sağlık hizmetleri açısından oldukça önem taşımaktadır. Afetlere İlişkin Acil Yardım Teşkilatı ve Planlama Esaslarına Dair Yönetmelik kapsamında, afetlerde ihtiyaç duyulacak, sağlıkla ilgili tıbbi malzeme ve ilaç gibi ihtiyaçların karşılanması için organizasyonu, Sağlık Bakanlığı'nın sorumluluğuna bırakılmıştır. Toplumun ilaca yönelik ihtiyaçlarını karşılamak amacıyla, hizmet veren eczanelerin, afet zamanlarında da bu hizmetlerine devam ettikleri bilinmektedir. Türk Eczacıları Birliği ve ilgili bölge eczacı odaları bünyesinde yürütülen birçok faaliyet, olağanüstü durumlarda ihtiyaçların karşılanmasında önemli rol oynamaktadır.

Bu çalışma kapsamında, afetlerde sunulan sağlık hizmetlerinin düzenli yürütülmesinde ve ihtiyaçların karşılanmasında eczacılara düşen roller incelenecek, şimdiye kadar yaşanan afetlerde yapılan çalışmalar ortaya konmaya çalışılacaktır.

Anahtar kelimeler: Afet(ler), eczacılık hizmetleri, eczacı(lar)

Received: 22.01.2016

Revised: 10.02.2016

Accepted: 11.02.2016

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[#]This manuscript is an extended version of our oral presentation named as “Afetlerde Eczacılık Hizmetleri” at 6. Tıp Etiği ve Hukuku Sempozyumu in 2014.

INTRODUCTION

Disasters occurring since existence of human beings lead serious and negative outcomes in terms of health. This relationship between disasters and human health includes disasters in area of concern of healthcare industry and personnel. Disaster deemed a public health problem has been defined by World Medical Association as “*A disaster is the sudden occurrence of a calamitous, usually violent, event resulting in substantial material damage, considerable displacement of people, a large number of victims and/or significant social disruption or a combination thereof*” (1).

When the literature is reviewed it can be easily noticed that the term “disaster” has many definitions. Accordingly, it is possible to define disaster in a comprehensive manner: “*disaster is any event which results in need of societies to external assistance in order to cope with disability, organ loss, death and similar events due to improper balance between demand and supply and non-provision of healthcare services through local resources due to qualitative or quantitative reasons to numerous people who have been physically, mentally or socially injured/sick as a result of the effects imposed by a danger of human or nature origin on the society*” (1).

Disaster, in **Turkey National Response Plan** published in 2013, was defined as “any event of nature-, technological- or human-origin which detains or suspends human activities and normal life, and causes physical, economic or social damage to the entire society or to a part of it”. In the **Stockholm Declaration**, it states that “*The emergency in terms of medicine is characterized by the acute and unforeseeable imbalance between the capacity and sources of the medicine profession within a certain period of time and the requirement of people affected by the emergency situation or people whose health are under threat*” (2).

Although there are various classifications in the literature it is possible to group disasters in to two categories: man-made and nature-driven events. Earthquake, landslide, volcanic eruptions, water flood, storm water, storm, tsunami, tornado, drought are classified in nature-driven disasters while terrorism, fire, traffic accidents,

wars, environmental pollution, migration, technological accidents, etc. are classified in man-made disaster (3-7). In addition, disasters are classified in natural disasters, technological disasters, complex human emergencies and terrorism (1, 8).

DISASTER MANAGEMENT

Disaster Management is defined as the studies relating to be informed of natural events occurring in the environment where people live, to understand the same up to reasons of such events and not to be affected or to be affected at minimum level in case of reoccurrence (5, 8). Disaster management is composed of four basic stages: mitigation, preparation, response and recovery (6).

Effects induced by disasters on societies is in close relationship with development level of societies and thus with their degree of readiness and disaster management systems (9, 10). Disaster management system of a country arises from their combination of previous experiences gained (9). Planning in disaster management originate from the lowest level and then from local/regional plans to national plans (6). There are many international organizations engaged in disasters/emergencies (3).

Since disasters are events that require integrated disaster management the personnel participating in the course of a disaster may be selected from various professional groups and therefore, it should be aimed to ensure a healthy coordination between such groups and to provide the best service (5, 7). When managing a disaster case division of responsibilities within the organization according to the area of expertise and effective communication between such units should be provided (5).

Health management in disasters

Since disasters cause results such as death, injury, disability or disease directly relating to health, disaster management and health management in disasters which is an integral part of disaster management system are very important (11). The most important three parameters in health management in disasters are in-time, accurate and fast management (12).

Although the disaster management systems developed in our country which has frequently exposed to disasters such as earthquake, drought, flood and landslides was thought to be sufficient until the **1999 Marmara Earthquake** serious problems have arisen with this great earthquake and correspondingly the **Turkish General Directorate of Emergency Management** and then the **Prime Ministry Disaster and Emergency Management Authority (AFAD)** has been established.⁴ Disaster healthcare management in our country is regulated by the *Regulation on Emergency Assistance Organization for Disasters and Principles of Planning* No 12777, the *Law on Organization and Duties of the Disaster and Emergency Management Authority* No 5902, the *Law on Assistance to be Provided and Measures to be Taken due to Disasters Affecting Normal Life* No 7269 and other relevant regulations (9, 10). Under such regulations and laws, planning of disaster medicine and organization of provision of drugs and healthcare materials to be needed in disasters are of responsibility of the Ministry of Health. In this sense, **National Medical Rescue Teams (UMKE)** established to carry out duties in case of disaster or extraordinary circumstances under Provincial Healthcare Disaster Units and provincial organizations of the Ministry of Health are performing in four basic service fields: first aid and ambulance service, hospital service, basic healthcare service and dead identification and burial service (6).

Pharmacy services in disasters

Pharmacists serving for meeting needs for drugs of the society are trying to sustain such services also in the course of disasters. Pharmacists play very important role in accurate determination, provision and use of drugs which are of particular importance in terms of medical care used by disaster victims. Drugs used in the course of disasters vary according to countries and disasters. Therefore, collection of information on epidemiological patterns of regional diseases, region-specific endemic diseases, level of local healthcare services and standard treatments and examination of similar previous disasters will provide significant assistance (13). Usage of drugs which local healthcare teams are familiar with

is important in terms of providing the best healthcare services and preventing drug-related problems (13).

Providing assistance from non-disaster region or even international organizations for post-disaster healthcare services has already become a pattern; which many times causes additional tasks and problems to local administrations instead of assistance (11). In order to prevent such problems the World Health Organization (WHO) has determined the general rules that should be followed for post-disaster drug aids (13):

- No drug shall be sent without prior authorization or a demand from the country where such drugs will be delivered.
- No drug which is not included in the list of basic drugs prepared by the country obtaining the drug grant or if such list is not available then those not included in the list of basic drugs prepared by the WHO shall be sent.
- No drug with useful life less than one year shall pass border.
- Drug prospectus shall be prepared in a language understandable and include generic name, dose, manufacturer's name and expiry date.
- Drug package shall also be provided with the above-mentioned information in additional total number of drugs contained in the packaging.

The government, in the **Marmara Earthquake Determination of Damage in Healthcare Industry and Assistance Program**, stated that 81 stakeholders, including non-governmental organizations and private companies, donated equipment and drugs but this caused several problems because such drugs sent just after the earthquake did not comply with the criteria determined by the WHO (11). Therefore, acting in accordance with the rules determined by the WHO is essential in drug deliveries. In addition, it is stated that it would be useful in reduction of complicity when such drug deliveries are made through monetary donations and drugs are provided from pharmaceutical warehouses (14, 15).

Pharmacists having social and societal responsibilities in addition to service responsibilities arising out of their profession participate in many social responsibility projects as well as are trying to do their best in similar circumstances. The wish of pharmacists to take voluntary tasks in field hospital pharmacies established in case of disasters or similar circumstances and *delivery of Mobile Pharmacy* of the Turkish Pharmacists Association (TEB) and *Mobile Pharmacy* of İstanbul Pharmacy Cooperative (İEK) clearly show that pharmacists want to take place in such organizations.

Pharmacists participated in assistance teams after the 17 August 1999 Marmara and 23 October 2011 Van Earthquakes which were the greatest disasters experienced by our country. However, when past experiences of our country are examined many problems may be observed which all caused by non-organization of the government and pharmacists in case of disasters. A group of pharmacists have established the **Commission of Pharmacists for Extraordinary Circumstances** in order to eliminate such problems, deficiencies and faults experienced in pharmaceutical services during disasters. In the meetings held by this commission purpose of the pharmacists for extraordinary circumstances has been declared to be “*to provide an organization that will carry out pharmaceutical services in the affected area in case of a disaster, supply and provide drugs and medical materials, and provide drugs to human in a fast and reliable manner though pharmacists by establishing mobile pharmacies*” (15). Similarly, this commission has listed the tasks which pharmacists planned to undertake for extraordinary circumstances as follows:

- To establish and operate field pharmacies in affected region in case of extraordinary circumstances;
- To coordinate provision and distribution of drugs and medical materials in affected regions and to ensure coordination with other institutions and establishments working at the same region in case of extraordinary circumstances;
- To establish sorting stations in other cities and to sort the drugs and medical materials to be sent to the affected region in these stations for extraordinary

circumstances;

- To ensure coordination between pharmacists to carry out tasks in the affected region in case of extraordinary circumstances;
- To carry out preparation studies in normal times for extraordinary circumstances;
- To ensure preparedness of its members to extraordinary circumstances in normal times through regular trainings and drills; and
- To establish communication and to share experiences with national and international institutions and establishments in normal times.

The Commission of Pharmacists for Extraordinary Circumstances carries out its studies in cooperation with the UMKE and Search and Rescue Organization (AKUT) and aims a more effective cooperation of pharmacists in disaster organizations. Past experiences have shown that how pharmacists are important in disaster management; which has already excited attention of public authorities.

The Preparation Guidance for Provincial Disaster and Emergency Health Plan (İL-SAP) published in 2013, job description of the units included in the provincial organization of the Ministry of Health during disasters and the Pharmacy Branch has been assigned with the task, under the Logistics Service, to provide materials, drugs, equipment and other similar goods needed in the course of response from their own resources or relevant bodies. Similarly, tasks of the *Pharmacy Branch* under the Operational Service have been listed as followings (2):

- To ensure provision of emergency drugs and medical materials needed in disasters;
- To ensure that necessary drugs and materials are delivered to disaster region;
- To provide special packaging through assessment and financial affairs branch in order to prevent damage to drugs and materials during transportation;
- To identify stocks of all pharmaceutical warehouses and pharmacies within the affected province;
- To provide assistance to stock control units of assessment and financial affairs branches in checking

- drug stocks available in pharmacy stocks of hospitals;
- To allocate special budget for disasters and to provide drug/materials directly from pharmaceutical warehouses or firms;
 - To ensure that drug grants from national or international bodies are sorted, stored at proper conditions and disposed of when necessary; and
 - To develop reports to be regularly submitted to the coordinator in order to ensure that relevant society, the media and international agencies are kept informed to provide a proper balance between the drug donations and drug needs.

Another point that makes it difficult for patients to have access to drugs after a disaster is that local pharmacies also become unable to provide their services. Therefore, studies aimed at examination of status of pharmacies after a disaster and assisting them to be available are of particular importance. In this sense, TEB and Regional Chambers of Pharmacists try to reach local pharmacies after disasters and to assess current situation. In addition, a body called "TEB Disaster Fund" has been developed in order to assist disaster victim colleagues and also to facilitate provision of pharmaceutical services after disasters. Under this fund, several aids were provided to pharmacies after 1998 Adana, 1999 Marmara, 2011 Van earthquakes and 1999 Western Black Sea Flood according to their status of damage.

DISCUSSION and CONCLUSION

Despite all innovations and improvements it is not possible for people to become entirely prepared to disasters which leads to appearance of the requirement to be prepared against any disaster. Since unprepared and unawared aid studies lead to damage and turmoil instead of benefit disaster management is significantly important in terms of healthcare. Since panic and turmoil that may arise during disasters particularly leads to desultory use of drugs and medical materials careful and proper management of healthcare, drug and pharmaceutical services are of critical importance (16).

When the literature on pharmaceutical services during disasters and studies carried out after disasters

experiences is reviewed it is observed that foreign countries give particular attention to this issue, that pharmacists play active role in disaster management and even develop the databases to be used in case of disaster. When our country is examined it is observed that government policies go off half-cocked and several problems had been experienced in past disasters due to not providing pharmacists with tasks in disaster management. It is notable that government has started to provide a role to pharmacists in disaster plans in order to eliminate such problems.

Yeğenoğlu (2013) states that when sending drugs to affected areas drug groups frequently needed in disasters such as antibiotics, tetanus toxoid, insulin, analgesics cardiac drugs, anticonvulsants, rehydration liquids, cold preparations and contraceptives should be preferred rather than complex drugs (13).

Physical requirements critical to pharmacies in case of a disaster should be underlined by TEB or regional chamber of pharmacy (13). Planning the pharmacists' needs to carry out tasks in a disaster region such as accommodation and heating will also reduce work load and problems during disaster. The most typical problems encountered in areas affected by disasters in terms of pharmaceutical services is lack of power source, appropriate drug stocks and safety of narcotics (13). Lack of power, phone and internet which is significant leads to serious problems in provision of pharmaceutical services when e-reçete (e-prescription) application considered. In order to prevent such problems a generator, portable racks to be used for sorting drugs and a lockable medicine cabinet should be provided to pharmacies to be located in disaster areas.

When planning pharmacy services for disasters inclusion of not only pharmacists but also pharmacy technicians in such planning activities will facilitate sorting of drugs and arrangement of pharmacies to be opened in disaster areas.

In addition to the afore-mentioned issues in order to enable pharmacists to play an active role in drug-treatment management and drug distribution during disasters this issue should be included in the trainings provided. Disasters experienced in our country and foreign countries, drug groups needed in such disasters,

what responsibilities pharmacists may undertake before and after disasters should be included in to the curriculum and awareness on pharmaceutical services in disasters should be established. Subjects relating to disaster pharmacy are not limited to undergraduate studies but also included in postgraduate education. Postgraduate Education Programs on Disaster Pharmacy should be established under faculties of pharmacy and pharmacists should be trained on this subject and actively participate in disaster management plans developed by the government.

The Turkish Pharmacists Association should ensure that all regional chambers of pharmacists develop a disaster plan in coordination and consultation with UMKE

and AKUT. By this way, fast and reliable information flow and a planned study can be obtained within the regional chambers of pharmacists for disaster cases; which will lead to more accurate identification of needs and elimination of turmoil. At the same time, this will enable immediate determination of current situation of pharmacies within the disaster region, provision of necessary aids to disaster victim pharmacists and elimination of barriers against patients trying to have access to pharmacies which are the closest healthcare consultants. Thus, it will be possible to provide drugs of patients with chronic disease by his/her pharmacists who provides patient follow-up and to reduce workload of mobile hospital pharmacies, mobile pharmacies established in order to provide drugs in disaster regions.

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