Disaster Preparation Status of Public Health Academic Staff a Cross-sectional Study from Istanbul

Halk Sağlığı Akademik Personellerinin Afet Hazırlık Durumu İstanbul'dan Kesitsel Bir Araştırma

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ABSTRACT Aim: Public Health is a field specifically related to disasters and disaster medicine. The purpose of this research is to determine the opinion and education status of public health academic personnel in Istanbul on disasters, especially the earthquake, and to expose their disaster preparedness at their institutions and living area. **Methods:** The cross-sectional research is used for the study. 53 research assistants and 39 academics working at the faculties of medicine in public and private universities participated to the research. **Results:** 61.1% of the academics and 71.6% of the research assistants did not receive basic disaster training. Only 5 of the research assistants participating to the research received basic disaster training from their institutions. 77.6% of the research assistants and 50% of the academics do not know whether there is a disaster plan of their institutions or not. **Conclusion:** Including the basic disaster training subjects in the curriculum of the education process for public health research assistants may improve their self-sufficiency and increase their motivation to take charge in cases of a disaster. The institutions must build up a disaster plan and support their plan and intervention techniques with applied trainings and practices.
Key Words: disaster, disaster preparedness, disaster medicine, emergency medicine, public health

ÖZ Amaç: Halk Sağlığı afetler ve afet tıbbı ile özellikle ilgili bir alandır. Bu araştırmanın amacı İstanbul'da çalışan halk sağlığı akademik personellerinin afetlerle ve özellikle olası bir deprem durumu ile ilgili görüşlerini ve eğitim durumlarını öğrenmek ve kurumlarında ve yaşadıkları yerlerde afet hazırlık durumlarını belirlemektir. **Yöntem:** Araştırma kesitsel olarak düzenlenmiştir. İstanbul'da kamu ve özel tıp fakültelerinin halk sağlığı bölümlerinde çalışan 39'u öğretim üyesi ve 53'ü araştırma görevlisi toplam 92 akademik personel araştırmaya katılmıştır. **Bulgular:** Öğretim üyelerinin %61,1'i araştırma görevlilerinin %71.6'sı temel afet eğitimi almamıştır. Araştırmaya katılan araştırma görevlilerinin sadece 5'i çalıştıkları kurumdan temel afet eğitimi almıştır Araştırma görevlilerinin %77.6'sı; öğretim üyelerinin %50'si kurumlarına ait bir afet planı olup olmadığını bilmemektedirler. Katılımcılar içinde kurum afet planında görevli olduğunu belirten hiç kimse bulunmamaktadır. **Sonuç:** Temel afet eğitimi konularına halk sağlığı araştırma görevlilerinin eğitim sürecinde yer verilmesi onların öz yeterliliğini geliştirerek afet durumunda görev almaları konusunda motivasyonlarını artırabilir. Kurumların afet planı geliştirmesi, geliştirdikleri plan ve müdahale yöntemlerini uygulamalı çalışmalar ve tatbikatlar yaparak desteklemeleri zorunludur.
Anahtar Kelimeler: afet, afet hazırlığı, afet tıbbı, acil tıp, halk sağlığı

Introduction

A disaster is serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources (1). Natural disasters are ecological events that disrupt the normal life order of the community and require external assistance by overcoming the capacity of the community to adapt. Natural disasters that lead to deaths, severe injuries or loss are compelling for individuals of all ages and may lead to physical difficulties as well as psychological difficulties (2). Various kinds of natural disasters have been experienced and still being experienced in our country. According to the information available, 65% of the disasters in our country are earthquakes, 15% are landslides, 14% are floods and about 10% are other disasters such as fire, avalanche and storm. Natural disasters cause an

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economic loss of about 3% of gross domestic product each year. Among natural disasters, one of the most remarkable in terms of its effects is earthquakes. 66% of our territory is in first and second degree earthquake zones and 71% of the population lives in these zones (3,4). It is estimated that the earthquake that will be the result of breaking the parts of the North Anatolian Fault Line passing through the Marmara Sea will affect a wide geographical area, especially the southern parts of Istanbul. There are studies saying that a major earthquake in this area has 62% probability to occur in this region within the next 30 years (5), while there are also studies showing that the possibility of an earthquake of around 8.0 with the Richter size scale in the Marmara Region over the next 50 years is 90% (6). The data given and the events that are happening reveal the importance for our country to prepare for a disaster that may be experienced especially in case of a disaster. Disaster medicine is a newly emerging medical field with a short history. The aim is to prevent and reduce the adverse effects of disasters on the health of affected communities, to bring health conditions to pre-disaster status, to protect or restore health services and establishments. Disaster medicine requires that various health disciplines work in collaboration. One of these disciplines is public health. Public Health is a branch specifically concerned with disasters and disaster medicine (7). Preparation state of public health workers for a possible disaster is of great importance in a region like our country where disasters happen and especially earthquake hazard exists. Modern disaster management includes steps such as disaster preparation, disaster response, and post-disaster rehabilitation. Public health professionals have important roles in all these steps.

The purpose of this research is to learn the opinions and educational status of the public health academic staff working in Istanbul with disasters and especially about a possible earthquake situation and to show the disaster preparation status in their institutions and places where they live.

Materials and Methods

The study was organized cross-sectional. A total of 92 academic staff in public health departments of public and private medical faculties in Istanbul including 39 academics and 53 research assistants studied in August 2015, the data collection period of the research. The universe of the study consists of these 92 people. In this study in which a sample was not selected, it was aimed to reach the entire universe. A 30-question questionnaire prepared by the researchers was used for data collection. Surveys were implemented as face-to-face or online surveys. An online questionnaire was applied via e-mail addresses to participants who could not be reached face-to-face. The approval from the ethics committee was obtained. All participants were informed and approvals of participants were taken.

Statistical Analysis: SPSS package program was used for statistical analysis. Descriptive findings were expressed in numbers and percentages. Fisher's Exact Test and Chi-Square test were used to evaluate categorical variables. $p < 0.05$ was considered statistically significant.

Results

A total of 67 participants including 18 academics and 49 research assistants participated in the study. This number corresponds to 72.8% of the research universe. 44 of the participants were female (65.7%) and 23 were male (34.3%). 10 of the participants (14.9%) are working in private universities, and the remaining is working in public universities.

61.1% of academics and 71.6% of research assistants did not receive basic disaster training. There is no statistically significant difference between academics and research assistants in terms of basic disaster training (Table 1).

Table 1. Basic disaster training status of academics and research assistants

	Basic Disaster Training Status		
	Yes n (%)	No n (%)	Total n (%)
Academics	7 (38,9)	11 (61,1)	18 (100,0)
Research Assistants	12 (38,4)	37 (71,6)	49 (100,0)
	$x^2=1,34$	*$p=0,24$*	

Only 5 of the research assistants who participated in the study received basic disaster training from the institution they are studying (Table 2). All of these 5 people stated that the training they had received was inadequate. 38 of the research assistants (77.6%) and 9 of academics (50.0%) do not know whether there is a disaster plan belonging to their institution. No one is present in the participants who indicated

Table 2**.** Places that the participants received basic disaster training from

	Academics	Research Assistants
Present instution they study	1	5
Past instution they studied	2	2
Another public instution	1	7
Another private instution	3	0
Total	7	14

Table 3. Participants precautions related to earthquake preparation in places where they live

	Academics		Research Assistants		p* value
	Yes N (%)	No N (%)	Yes N (%)	No N (%)	
Strengthening the buildings they live	2 (11,1)	16 (88,9)	5 (10,2)	44 (89,8)	>0,5
Preparing a disaster plan in their houses	5 (27,8)	13 (72,2)	0 (0,0)	49 (100,0)	>0,5
Preparing an earthquake bag	9 (50,0)	9 (50,0)	7 (14,3)	42 (85,7)	<0,001
Having earthquake insurance for the buildings they live	6 (33,3)	12 (66,7)	18 (36,7)	31 (63,3)	0,007

**Fisher's Exact Test*

that they are on duty in the institutional disaster plan

Among the participants, 59.2% of the research assistants (n=29) and 83.3% of the academics (n=15) stated that they experienced an earthquake with a magnitude greater than 4.5 Richter size (severe). However, most of the participants did not take precautions related to earthquake preparation in places where they live. The frequency of academics preparing an earthquake bag and having earthquake insurance for the buildings they live in is significantly higher than the frequency of research assistants (Table 3).

60.7% of the participants are not willing to be involved in a possible disaster as a staff. The lack of training and experience related to working in the disaster area was most commonly showed as a reason for this situation. The participants were asked about which topics they had lack of information related with disaster management; research members stated that they had a lack of information on 'triage' and 'disaster and mental health' most frequently, and research assistants indicated that they had a lack of information about "disaster response" and "coordination and communication during disasters" (Table 4).

Discussion

71.6% of research assistants and 61.1% of academics participating in this study were found not to receive basic disaster training. Similar results have been obtained from previous studies and the lack of training of health workers' in disaster has been revealed. 71.7% of the doctors stated that they did not receive disaster training in the study conducted by the Turkish Medical Association for the evaluation of the preparatory situation of the inpatient treatment institutions that the physicians were working for extraordinary situations (8). In a study conducted in a nursing department of a university, it was found that 78.9% of students did not receive disaster and emergency training (9). Public health professionals, who are the target group of this study, was not receive high-level disaster training, moreover there was no difference in terms of disaster training between the academics and research assistants.

Only 5 of the research assistants stated that they had disaster training by the institution they are studying. In addition, all trainees found this training inadequate. Both the academics and the research assistants indicated that all the

Table 4. Topics the participants think they have lack of information related with disaster management

	Academics n (%)	Research Assistants n (%)
Disaster response	6 (33,3)	35 (71,4)
Simple search and recovery	3 (16,7)	29 (59,2)
Coordination and communication during disasters	11 (61,1)	35 (71,4)
Triage	12 (66,7)	14 (28,6)
Basic life support	7 (38,9)	11 (22,4)
Disaster and contagious disease control	3 (16,7)	31 (63,3)
Disaster and mental health	7 (38,9)	29 (59,2)
Disaster and mental health	13 (72,2)	33 (67,3)

research assistants indicated that all participants had lack of knowledge on many basic issues such as disaster management or triage or control of infectious diseases.

Most of the participants do not want to work voluntarily in case of a possible disaster. The most important reason for this is the lack of training. In previous studies, the important reason of concerns of health workers about working in the disaster area was the inadequacy of education (10). Acquiring disaster training can increase the motivation of health workers to improve their self-sufficiency and to work in disaster situations.

Despite the fact that most of the participants lived in a severe earthquake, most of the participants did not take measures to prevent a possible earthquake. This demonstrates the importance of the social component in reducing earthquake risks. In one study, it was shown that the success of efforts to reduce earthquake risks was directly proportional to community cooperation[11]. To educate and raise awareness of disaster preparedness for every part of society, including health workers will increase volunteerism, policies implemented with social voluntarism, rather than impositions, will increase the proportion of people who take measures against the earthquake risk reduction process and the possible earthquakes.

When a disaster is encountered, how to deal with emerging problems should be considered before. The organization of rescue, first aid, transport, communication, material flow must be planned in advance. Every individual who will be involved in this arrangement has to know very well where, when, and what to do. Otherwise, there will be a chaotic environment instead of order and cooperation, and the work to be done is delayed (10). In disasters, those assigned to disaster plans should immediately go to the task site, and the ones who are not commissioned should go to the place of duty in the ordinary term and start running their duties (11). It has been scientifically proven that the possibility of people moving in a disaster without panic is doubled when exercises related to safe behavior before disaster are made (12). However, in current research, most of the participants were not even aware of a disaster plan belonging to the institutions. There is no participant in the disaster plan that indicates his/ her duty. In a study conducted in an educational research hospital, 64% of hospital workers were unaware of the disaster plan (13). Also in another study conducted with 449 physicians by the Turkish Medical Association, 63.5% of the participants stated that there was no disaster plan in their institutions or they had no information on this subject[8].

Conclusion

Disaster training and preparation of health workers are of vital importance especially in the societies facing disaster danger like our country. It was observed that the public health professionals, who may have significant contributions at every step of the disaster response, did not receive structured disaster training during their work and education processes. Providing basic disaster training to public health researchers during their training process may increase their motivation to work in disaster situations by improving their self-sufficiency. It is imperative that institutions develop disaster plans, support plans and intervention methods they developed by performing practical exercises and demonstrations in order to be able to make better intervention and improvement activities in emergencies.

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