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Nurses' preparedness for disasters in Turkey: Literature review

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Abstract

The purpose of the study is to present the current situation and to provide a working perspective on nurses' preparedness for disasters. Literature review method was used in the study. The keywords "nurse" and "disaster" have been used in Turkish and English while being screened. It has been determined that studies that examine nurses' preparedness for disasters in Turkey are mostly descriptive and their samples are limited. It was seen that the studies in Turkey were carried out after 2010 and there was no research on this subject before. In addition, studies have shown that nurses' basic competencies for disaster preparedness need to be developed. The study revealed that the training of nurses for disasters in Turkey is inadequate and the nurses in Turkey do not see themselves prepared and sufficient to intervene in disasters similar to the results of the studies done in all other countries.

Keywords: Disasters; nurses; disaster preparedness, disaster nursing.

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1. Introduction

Disasters have occurred throughout history, but recently, they have increased in both quantitative and qualitative terms due to the effects of social, economic and political phenomena and urbanization (Baack & Alfred, 2013). Moreover, the number of reported natural and human-made disasters continues to increase worldwide (Minami & Young-Soo, 2009). Disasters occur every day somewhere in the world, with dramatic impacts on individuals, families and communities. They have become a cause of national and international concern (Ibrahim, 2014; Shapira, Aharonson-Daniel, Bar-Dayan, Sykes, & Adini, 2016).

The internationally accepted definition of 'disaster' is a 'serious disruption of the functioning of society which poses a significant, widespread threat to human life, health, property, or the environment, whether arising from accident, nature, or human activity, whether developing suddenly or as a result of long-term processes, but excluding armed conflict' (International Federation of Red Cross/Red Crescent Societies [IFRC], 2011, p.14). Disasters may be classified in various ways. Generally, they are classified as either natural or man-made (Moe, Gehbauer, Sentz & Mueller, 2007).

Societies which notice that the disasters are constantly present, and escaping from them is not possible, develop disaster recovery methods. Societies that frequently encounter any kind of destructive and fatal disasters such as Japan have made living with disasters almost a lifestyle. This has revealed the idea that hazards and disasters should be managed and disaster management systems have been established with the sense of civil defense, emergency management and disaster management in struggling with disasters and hazards (Akyel, 2007).

2. Disaster Management

After the major disasters like September 11, 2001 terrorist attack on the Towers of the World Trade Center in New York City, the SARS outbreak in March 2003, the tsunami in Southeastern Asia in December 2004, and the hurricane Katrina in New Orleans in 2005, the importance of disaster preparedness has been understood worldwide (Fung et al., 2008). In addition, disaster management started to be discussed for the first time after Gölcük earthquake causing the most damage in Turkey in 1999. Public institutions and organizations, universities, non-governmental organizations, and private institutions have accelerated their works on the concept and implementation of "disaster management" after Gölcük earthquake (Alp, 2009). Disaster management is not fully effective in eliminating or preventing threats, but it tends to reduce damages by focusing on the creation of plans to reduce the effects of disasters (Al Khalaileh et al., 2012).

Disaster management is considered as a process that requires the management and direction of the resources of all the institutions and organizations of the society in order to establish, direct, coordinate, and effectively implement the principles of all the works that need to be done in order to prevent disasters and reduce their damages (Kadioglu & Bek, 2009). Each phase of this process is very important and affects each other. However, the stage of preparedness forms a crucial step to reduce the effects of disasters (WHO, 2014). Things to be done before the disaster are addressed as the works on development and implementation of preparatory strategies against a possible disaster in the areas with disaster hazard as well as risk reduction activities conducted to prevent or reduce disaster impacts and the development and implementation of long-term and comprehensive policies (Isik et al., 2012; Ozmen et al., 2013).

2.1. Current disaster management system in Turkey

In order to remove the complexity and multiple titles of disaster management, "Law no. 5902 on Organization and Duties of Disaster and Emergency Management Authority" was accepted in Grand National Assembly of Turkey on 29.05.2009 and became effective by being published in the official gazette dated 17.06.2009 and numbered 27261. Within the scope of this law, "Disaster and Emergency Management Authority (AFAD)" affiliated with the Prime Ministry was established to carry out disaster and emergency situations and civil defense services. The law covers taking the necessary

precautions to ensure that services related to disaster and emergency situations and civil defense are carried out effectively at the national level and preparation and damage reduction before occurrence of the events as well as establishing the coordination between the institutions and organizations that carry out the intervention to be carried out during the event and improvement works to be made after the event, and developing and implementing of the policies in these subjects (Ozmen & Ozden, 2013).

The disaster management system that is still being implemented in Turkey has been determined by "Law No. 7269 on the Measures and Assistances to be Put into Effect Regarding Disasters Affecting the Life of the General Public". Within the scope of decree of the council of ministers dated 01.04.1988 and numbered 88/12777, in the fourth article of this law, how it will be organized in both city and provinces and centers as well as planning and preparation principles with the duties, authorities, and responsibilities of the institutions in the disaster response system have been determined (Akyel, 2007; Erkal & Degerliyurt, 2009).

The purpose of the regulation is determined as "planning all the power and resources of the state before the disaster and regulating establishment and tasks of the emergency aid agencies to provide the most effective primary and emergency assistance to the disease victims with the transferring of the state powers to the disaster area in the fastest way in case of any disaster" in the first article of the Regulation on the Disaster Emergency Help Organization and Planning Principles (Regulation on the Disaster Emergency Aid Organization and Planning Principles, 1988). Accordingly, "Disasters Central Coordination Board" is formed under the Presidency of the Undersecretary of the Ministry of Public Works and Settlement with participation of Ministry of National Defense, Ministry of Foreign Affairs, Ministry of Interior, Ministry of Finance, Ministry of National Education, Ministry of Health, Ministry of Transport, Ministry of Agriculture and Rural Affairs, Ministry of Labor and Social Security, Ministry of Industry and Trade, Ministry of Energy and Natural Resources, Undersecretaries of the Ministry of Forestry and the General President or General Manager of the Turkish Red Crescent Society. The representative of the General Staff participates in this board in the issues related to the duties and responsibilities of the General Staff (Erkal & Degerliyurt, 2009).

This coordination board meets upon the call of the chairperson when a major disaster occurs. The ministries, which are board members, take the necessary measures in the presidency of the deputy undersecretary to plan and implement emergency aid related to their duties and to coordinate and cooperate with other ministries (Kadioglu & Bek, 2009).

According to the study conducted by Akyel (2007) for the purpose of "determining and solving the problems encountered in Turkish disaster management", it is stated that the current disaster management in Turkey is not effective and efficient and there are actions to be taken to establish an effective and efficient disaster management system. It is clearly seen that it is required to change the understanding of current disaster management in Turkey and a model that focuses on whole of the disaster management in which the nurse is also involved needs to be redesigned in the context of the organizational dimension of disaster management in Turkey (Kalanlar & Kubilay, 2015).

3. Disaster Preparedness

Disaster preparedness includes risk assessment at all levels of the system and multidisciplinary management strategies has a critical importance in terms of providing effective intervention to short, medium, and long-term health needs of a community affected by a disaster (Ibrahim, 2014). It is stated that the greatest damage in disasters is always seen in countries that do not have pre-established institutional, regional or national plans (Ozucelik et al., 2008). Since it is not possible to completely prevent disasters, it is very important for individuals, institutions, and countries to use the time and prepare in the best possible way before the disaster. It should not be forgotten that the more you are ready for disaster, the less damage the disaster will be overcome with (Guerdan, 2009).

Although disasters are frequently seen in Turkey, inadequacies in disaster preparation and taking measures and lack of a disaster culture are considered as a situation that makes it difficult for the society to deal with disasters. Lack of knowledge, lack of education, unconsciousness and not giving

importance to the security at the personal level constitute the most important problems in preparation (Erkan, 2010; Isik et al., 2012).

In order for communities to be ready for disasters, it is extremely important for governmental agencies, the private institutions, and non-governmental organizations as well as health institutions having important tasks in disasters to be prepared. As in the other institutions and organizations, responsibility of health institutions in the event of disasters includes not only ensuring the security of the staff and the service group, but also meeting increasing medical care and treatment requirements during and after the disaster (Alp, 2009; Kadioglu & Bek, 2009). For this reason, it becomes even more important for the health institutions to carry out the necessary preparatory works before the disaster. In this way, health institutions are ensured to be minimally damaged due to disasters and stay functional during disasters (Ozmen et al., 2013).

The disaster preparedness of nurses and other healthcare personnel is important for the systematic work of the team (Nesmith, 2006; Cusack et al., 2010). All healthcare personnel are required to be prepared for disaster response and management and it is also stated that there is a global need to train the people about how they can protect themselves when they face with a disaster (Fung et al., 2008).

3.1. Disaster nursing

It is considered that disaster preparedness of the nurses, who constitute the largest group among healthcare personnel, for rapid intervention and effective disaster management is a very important issue (Veenema, 2006). No matter what level they are in, all nurses should increase their professional abilities to provide adequate pre-disaster and post-disaster health services by participating in prevention, reduction, preparation and rescue activities (Jennings-Sanders, 2004; Fung et al., 2008).

Nowadays, in many countries, nurses are held responsible for being prepared for disasters and for acquiring the knowledge and skills necessary for disaster situations (Zarea et al., 2014). According to this opinion, regardless of their area of specialty, nurses should be aware of disaster management and should take charge in all phases of disasters. Disaster management, which was originally regarded as the application area of only public health nurses, emergency nurses or nurses taking charge in the army, is considered today as an area required to be learnt by the nurses working in all areas (Olchin & Krutz, 2012).

Disaster nursing is defined as activities that should be carried out in cooperation with other areas, in order to minimize the life-threatening risks and the wide range effects of the activities on health and the systematic and flexible use of special knowledge and skills in disaster-related nursing activities (Usher and Mayner, 2011). The aim of disaster nursing is to reach the best level of health condition for the community and individuals exposed to a disaster (Jennings-Sanders, 2004).

Nurses in all branches need to do evaluation, prioritize, provide support, and know how to execute effective working processes in disaster situations (Jennings-Sanders, 2004; Yin et al., 2011). However, there are very few models or frameworks in field of nursing in Turkey that will guide nurses in the process of understanding disaster nursing which has just started to develop. Moreover, the involvement of disaster nursing in the nursing curriculum will be an important acquisition today. The fact that nurses are trained about disaster nursing can lead to positive outcomes such as reduced mortality rates, health promotion of individuals, and reduced disaster costs (Yan et al., 2015).

Especially the manager nurses in the health institutions have important duties related to the disaster situation. Since disasters require managers to make quick decisions, manager nurses need to have the basic knowledge and skills necessary for decision-making and control (Guerdan, 2009). Basic practices are often forgotten at the time of a disaster and the system may become more complex than the ordinary. For this reason, it is required for the nursing administration to apply these basic functions by re-auditing the management functions related to planning, organizing, directing, coordination and control during the disaster. Manager nurses have responsibilities related to human

with management resources, financial, material, support and system resources. The management of each of these resources has a vital importance before, during and after the disaster (Nesmith, 2006; Vatan & Salur, 2010; Magnaye et al., 2011).

3.2. Status of disaster preparedness of the nurses and its importance

To begin with Florence Nightingale in the Crimean War, nurses have actively participated in providing the care to the patients and wounded people during all catastrophes and disasters throughout history have voluntarily constituted an important source of labor force in disasters (Kalanlar & Kubilay, 2015). However, when the role of nurses stated in laws and regulations in disasters is examined, it seems very limited.

3.2.1. Nurses' role in disasters according to laws and regulations

When the legal regulations on nurses' roles in disasters in Turkey are examined, it is observed that there are inadequacies. A limited task is defined in Nursing Practice Regulation introduced in 2010 as "Nurses make emergency plans, develop protocols and prepare teams to put them into practice when necessary in cooperation with the related units in the direction of the disaster plan in extraordinary situations" (Nursing Regulation, 2010). Similarly, it is seen that limited and insufficient responsibilities are given to the nurses in the disasters with the statement of "Family health workers make emergency plans in cooperation with the related units in line with disaster plans in extraordinary situations, develop protocols and prepare teams to implement them when necessary" in family medicine practice regulation (Family Medicine Practice Regulation, 2013). The duties, roles, and responsibilities of the nurse and other health personnel are not specified in the section of "Obligations and Measures to be Taken in Natural Disaster and Disease Outbreaks" addressed in the second part of the Emergency Law and Civil Defense Law (Emergency Law, 1983).

3.2.2. The importance of disaster preparedness of nurses

Nurses, who constitute one of the most vital sources of the community in coping with unforeseeable disasters, play roles like being prepared for disasters, participating in disaster management in terms of immediate intervention, performing effective management/intervention, performing post-disaster care functions, and striving for health and well-being of the community (Fung et al., 2008; Thomas & Inglesby, 2011; Pourvakhshoori et al., 2016).

The roles of nurses do not only include the rescue and protecting health of the victims in the emergency phase of a disaster, but also special issues such as disaster preparedness and long-term recovery after a disaster (Loke and Fung, 2014). However, it is stated that a great majority of the nurses think that their only role is to respond the disaster (Fung et al., 2008).

The International Council of Nurses (ICN) has emphasized that all nurses should have the best abilities to plan and execute disaster care, and have knowledge and skills in disaster preparedness and respond regardless of their specialty field (clinician, educator, researcher, manager) (Loke and Fung, 2014). In this respect, ICN has prepared a framework for the competences of disaster nursing and emphasized that all nurses should be able to display these competences (Minami & Young-Soo, 2009). It has also been emphasized by the International Nursing Coalition for Mass Casualty Education (INCMCE) that nurses all around the world should have a minimum level of knowledge and skills to be prepared and respond to disasters and events creating disaster effect (INCMCE, 2003). Nurses who are prepared for disasters and trained about disasters have been anticipated to play important roles in the event of disasters and to cope with disasters better (Veenema, 2006).

Nurses should be understand and apply the stages of the national disaster management process very well (Hsu et al., 2006). If the nurses are well explained about the functioning of the disaster management at the upper levels of the country, they can ensure that the plans personally prepared by them are compatible with the plans about overall of the official community. In short, nurses should become a part of their local or national disaster management programs (Minami & Young-Soo, 2009). All nurses should develop their professional skills in delivering adequate healthcare services before and after a disaster by participating in prevention, mitigation, preparedness and help activities.

3.2.3. Nurses' status of disaster preparedness

Previous experiences and trainings of nurses influence their preparedness, increase their awareness about disaster response, increase their self-confidence and skills, and reduce their vulnerability against unforeseen events (Hammad et al., 2011). Studies have shown that most nurses are not ready to respond to mass casualties and training and skills are not at sufficient level to make the appropriate initiative (Fothergill et al., 2005; Fung et al., 2008; Al Khalaileh et al., 2012; Diab & Mabrouk, 2015; Seyedin et al., 2015; Labrague et al., 2016).

It has been found that nurses in Turkey generally do not have enough level of disaster preparedness and core competences (Celik, 2010; Ozcan, 2013). In addition, there are a limited number of studies in Turkey that bring together the concepts of "nurse" and "disaster" and evaluate the disaster preparedness status of nurses (Celik, 2010; Ozcan, 2013; Taskiran, 2015). Table 1 shows these studies.

Table 1. Description of the studies that combine the concepts of "nurse" and "disaster"

Study	Research Type	Place and Sample of Research	Institution	Method and Measurement Tool	Results
Vatan ve Salur (2010)	Research article	İzmir 60 nurse manager	39 hospitals in the province of izmir	A descriptive study, questionnaire form developed by the researchers was used.	The majority of manager nurses are concerned that the resources of hospitals they are working with and greatness of hospitals for earthquake according to hospital plan project are insufficient for a possible earthquake. Manager nurses are actively involved in earthquake management plans of the hospitals they are in charge of.
Çelik (2010)	Master Thesis	Multicentre study generally in Turkey 204 nurses	Turkish Red Crescent Region and Blood Donation Centers	Descriptive and methodological research. Survey form developed by researchers and "Scale of Core Competences in Disaster Preparedness of Nurse" were used.	The result is that nurses see themselves at the level of "doing and doing with help" in meeting the skills of the basic competencies required for disaster preparedness. It has been emerged that nurses need to develop their basic competencies in disaster preparedness, nurses need training programs and are willing to participate.
Kalanlar (2013)	Doctorate Thesis	Ankara 100 Senior nursing student	Two state universities	The study is semi-experimental with control group. "Disaster Nursing and Management Evaluation Form" was used and prepared by researchers based on the literature on disaster nursing and disaster management.	In the study, statistically significant differences have been found between the intervention group pre-test and post-test, and between the control group pre- and post-test. These differences indicate that Jenning's Disaster Management Model in nursing can be used for nursing students at lessons about disaster nursing and disaster management.
Özcan (2013)	Master Thesis	İstanbul 500 nurses	Two state medical faculty hospitals	Descriptive and methodological research. Survey form developed by researchers and "Scale of Perception on Disaster Preparedness in Nurses" was used.	When the majority of nurses call themselves "Partially prepared" for disasters, according to their scale scores it has been found that they had a high level of readiness for preparatory phase and moderate level of perception at post intervention and post-disaster phases. It has been determined that nurses who were educated on disasters had a higher perception of disaster preparedness than those who did not receive education. In addition, nurses who received their theoretical and practical education had higher perception of disaster preparedness than only the theoretical education.
Taşkıran (2015)	Master Thesis	İzmir 406 nurses	One state medical faculty hospital	Descriptive and cross-sectional study. Survey form developed by researchers and "Scale of Core Competences in Disaster Preparedness of Nurses" developed by Çelik (2010) were used.	In the study, it has been found that nurses see themselves moderately ready for disasters and moderately satisfied to meet basic competencies for disaster preparedness. It has been also found that the nurses had training needs for disaster preparedness and fewer disaster experiences.
Hisar Yurdakul (2015)	Research article	Konya 295 nursing student	One state university	A descriptive study, questionnaire form developed by the researchers was used.	It has been uncovered that nursing students' information on subjects which expected service from them such as triage in disasters, decontamination, field hospitals established after a disaster, materials needed after a disaster is inadequate.

Two of the studies were conducted in 2010, two in 2013 and two in 2015. The reviewed studies involved three master's theses, one doctoral dissertation and two research articles. It was observed that one of the studies was conducted throughout Turkey, and the others were conducted in different cities such as Izmir, Ankara, Istanbul, and Konya. The samples of the studies consisted of different

institutions such as public university (nursing students), medical faculty hospital (nurses), public and private hospitals (nurses), Red Crescent and regional centers (nurses). It was observed that the study examining the disaster preparedness of nurses working in the Turkish Red Crescent (Celik, 2010) and the study investigating the nurses' status of disaster preparedness and preparation perception (Ozcan, 2013) were descriptive and methodological, the study investigating the teaching of disaster nursing and management to the nursing students was quasi-experimental, and the others were descriptive. "Scale of Core Competences in Disaster Preparedness of Nurses" developed by Çelik (2010) and "Scale of Perception on Disaster Preparedness in Nurses" developed by Ozcan (2013) were used in two of these studies.

As a result of three studies measuring nurses' perceptions on disaster preparedness, it was found that nurses perceived themselves to be moderately competent in meeting the skills similar to each other in the core competence areas for general disaster preparedness. It was concluded that the nurses' core competences in disaster preparedness needs to be improved, nurses needed training programs and they were willing to participate (Celik, 2010; Ozcan, 2013; Taskiran, 2015). It was stated in the studies conducted with the nurses and nursing students that the knowledge and skills of the students about disasters were also inadequate (Kalanlar, 2013; Hisar & Yurdakul, 2015).

4. Conclusion and Recommendations

Although disasters continue rapidly and increasingly throughout the world and international nursing organizations warn nurses to be prepared for disasters, it can be asserted that training of the nurses for disasters in Turkey as in many countries is inadequate and number of the related studies are limited. Similar to the results of the studies in all other countries, it was stated that nurses in Turkey did not see themselves ready and sufficient to respond to disasters. Starting from this result, it can be asserted that necessary policies about the disaster preparedness of the nurses at national and organizational level in countries have not been developed, not only nurses as individual but also organizational and national disaster policies are important in this result.

It was observed that the nurses did not have enough knowledge and skills to be ready for disasters and did not receive any training. Training of all nurses in basic undergraduate education programs and initiation of special graduate programs for nurses for disaster management have a great importance for the nurses to acquire basic and advanced knowledge and skills in disaster preparedness. In addition, policies should be established by nurse leaders and hospital managers in order to create disaster culture in Turkey.

According to the results of the reviewed literature, studies should be carried out to increase the training of nurses for disasters, to make objective measures for disaster preparedness and to raise their awareness about the roles and responsibilities of nurses in disasters. Limited number of studies on nurses' disaster preparation should be increased and more extensive studies should be planned. In the next stage, international projects should be carried out to solve this global problem. Furthermore, future studies should examine what are the individual and organizational barriers to nurses' disaster preparation, what strategies can be developed to prepare nurses for all stages of the disaster management, what can be done to create disaster management culture and raise related awareness in society and institutions, and what kind of policies can be applied to the development of a disaster management system, in which nurses are actively involved, in Turkey.

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