

# Nursing Approaches to Disasters and Earthquakes in Turkey

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## Abstract

Disaster is a set of events that unexpectedly cause great economic damages, environmental damages, affect cultural factors, cause loss of life and property, and that people and state administration cannot cope with and at the same time require assistance. The involvement of health professional nurses in disasters and in every step of disaster management phases and the existence of nursing approaches is a condition that is valued all over the world. In many countries, nurses are trained effectively to be prepared for disasters. In Turkey, there is no specialised field in the field of disaster nursing. The possibility of an earthquake in Turkey is an undeniable fact. Nurses, who are health professionals, constitute an important segment with their knowledge and skills before, during and after the earthquake. Certificate programs in which nurses can specialize in the field should be increased for the possibility of individuals to be harmed in earthquakes, courses in the field of earthquake should be added to undergraduate level education, field-specific congresses, symposiums, interviews, panels, etc. sessions should be increased, they should be able to take part and responsibility in non-governmental organizations and should be provided to develop themselves in the most effective way.

## INTRODUCTION

Disaster is a set of events that unexpectedly cause great economic damages, environmental damages, affect cultural factors, cause loss of life and property, and require the request for assistance at the same time that people and state administration cannot cope with. Disasters are divided into

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two as 'natural and unnatural'. Natural disasters are divided into three as biological, geological and hydro-climatic disasters. Unnatural, i.e. human disasters are divided into two as social and technological disasters. Disaster Management is all of the initiatives made to create a safer and healthier environment for disaster victims in a fast and effective way by removing the harmful effects of natural or unnatural disasters as soon as possible. With the rapid development and increasing importance of disaster management, each country has established a different form of management (Kalanlar, 2013). Disaster management phases are divided into 4 phases as risk-damage reduction, preparedness phase, response phase, recovery and reconstruction. The involvement of nurses in disasters and at every stage of disaster management phases and the existence of nursing approaches is a condition that is valued all over the world. In many countries, nurses are effectively trained to be prepared for disasters. Nurses are required to be prepared for disasters at a level that they can take part in all phases of disasters regardless of their areas of specialization and are held responsible for gaining relevant experience-knowledge (Zarea et al., 2014). Therefore, in order to reduce the level of damage to hospitals in disasters and earthquakes, to carry out the disaster crisis effectively, quickly and efficiently, to reduce the mortality and morbidity rates of disaster victims, and to ensure uninterrupted health management in the hospital, the Hospital Disaster Plan (HAP) was published as a regulation on 20 March 2015 in Turkey. The HAP is updated by the team including nurses until 1 February every year and sent to the relevant provincial health directorates (Taşkıran & Baykal, 2017). Organizations such as FEMA (Federal Emergency Management Agency), EMERCOM of RUSSIA, EPC (Emergency Preparedness Canada), UNDP (United Nations Development Program) and ICRC (International Committee of the Red Cross) are exemplary health institutions related to disasters in other countries. SAKOM (Health Disaster Coordination Centre) aims to maintain health organization in disasters effectively and continuously under the General Directorate of Emergency Health Services of the Ministry of Health. UMKE (National Medical Rescue Team) is a voluntary organization in our country consisting of health personnel in disasters since 2003. The Red Crescent was founded on 11 June 1868 during the reign of the Ottoman Sultan Sultan Abdülaziz under the name of "Ottoman Wounded and Sick Soldiers Aid Society". On 14 April 1877, the name was changed to "Ottoman Hilal-i Ahmer Society". During the Ottoman-Russian War of 1877-1878, the Hilal-i Ahmer Society carried out treatment with mobile hospitals and a significant decrease in mortality and morbidity rates was achieved with effective care. In the event of a

disaster such as war, the importance of social and medical aid organizations such as the Hilal-i Ahmer Society was recognised. In 1923, it was called “Turkey Hilal-i Ahmer Society”, in 1935 “Turkey Red Crescent Society” and in 1947 “Turkey Red Crescent Society”.

With the enactment of the Law No. 5902 in 2009 in Turkey, “Disaster and Emergency Management Presidency (AFAD)” was established under the then Prime Ministry and now, with the abolition of the Prime Ministry, under the Ministry of Interior of the Republic of Turkey. AFAD aims to cooperate with non-governmental organizations (NGOs) such as the Red Crescent, ministries and aid organizations of other countries when necessary with the understanding of an umbrella institution, so to speak, and it is aimed to provide more effective, continuous and efficient disaster management by gathering the authorities and responsibilities before, after and during the disaster under AFAD. Disaster nursing is to use the knowledge and skills gained during nursing education on disaster-related issues and to take an active role in health management and disaster management by reducing the mortality-morbidity rates of disaster victims and increasing the quality of life by fulfilling the main role of care as well as other roles. The requirement of disaster nursing is the crisis management to be performed by nurses at the disaster site (Kalanlar & Kubilay, 2015). Turkey is located on the active fault zone peninsula with a young geological structure. Fault belts cause formations that cause movements in the earth’s crust, the origin of which is inside the earth. These movements are called ‘earthquakes’. Earthquakes are divided into 3 main categories: tectonic, volcanic and subsidence earthquakes. Tectonic earthquakes are the most common type of earthquakes in Turkey and other countries. The main tectonic earthquakes in Turkey since 1903 are given in Table 1.

**Table 1: Major Earthquakes in Our Country (Turkey) Since 1903**

DATE	TIME	PLACE
29.4.1903	01:46	Malazgirt (MUŞ)
9.8.1912	03:29	Mürefte (TEKİRDAĞ)
4.10.1914	00:07	BURDUR
13.9.1924	16:34	Horasan (ERZURUM)
7.8.1925	08:46	Dinar (AFYON)
22.10.1926	21:59	KARS ve ERMENİSTAN
31.3.1928	02:29	Torbali (İZMİR)
18.5.1929	08:37	Suşehri (SİVAS)
7.5.1930	00:34	TÜRK – İRAN SINIRI
19.7.1933	22:07	Çivril (DENİZLİ)
4.1.1935	16:41	Erdek (BALIKESİR)
19.4.1938	12:59	KIRŞEHİR
22.9.1939	02:36	Dikili (İZMİR)
21.11.1939	10:48	Tercan (ERZİNCAN)
27.12.1939	01:57	ERZİNCAN
13.4.1940	08:29	YOZGAT –KAYSERİ
23.5.1941	21:51	MUĞLA
10.9.1941	23:53	Erciş (VAN)
12.11.1941	12:04	ERZİNCAN
15.11.1942	19:01	Bigadiç (BALIKESİR)
21.11.1942	16:01	Osmancık (ÇORUM)
20.12.1942	16:03	Erbaa (TOKAT)
20.6.1943	17:32	Hendek (ADAPAZARI)
27.11.1943	00:20	Ladik (SAMSUN)
1.2.1944	05:22	Gerede-Çerkeş (BOLU)
25.6.1944	06:16	Gediz (UŞAK)
6.10.1944	04:34	Ayvalık (BALIKESİR)
20.3.1945	09:58	Ceyhan-Misis(ADANA)
21.2.1946	17:43	İlgin (KONYA)
31.5.1946	05:12	Varto-Himis (MUŞ)
23.7.1949	17:03	Karaburun (İZMİR)
17.8.1949	20:44	Karlıova (BİNGÖL)
8.4.1951	23:38	İskenderun(ANTAKYA)
13.8.1951	20:33	Kurşunlu (ÇANKIRI)
3.1.1952	08:03	Hasankale (ERZURUM)
22.10.1952	19:00	Ceyhan –Misis(ADANA)
18.3.1953	21:06	Yenice (ÇANAKKALE)
7.9.1953	05:58	Kurşunlu (ÇANKIRI)
16.7.1955	09:07	Söke-Balat (AYDIN)
20.2.1956	22:31	ESKİŞEHİR
25.4.1957	04:25	Fethiye Rodos(MUĞLA)
26.5.1957	08:33	Abant (BOLU)
25.4.1959	02:26	Köyceğiz (MUĞLA)

DATE	TIME	PLACE
23.5.1961	04:45	Fethiye Rodos(MUĞLA)
18.9.1963	18:58	Çınarcık (İSTANBUL)
30.1.1964	19:45	Tefenni (BURDUR)
14.6.1964	15:15	MALATYA
6.10.1964	16:31	Manyas (BALIKESİR)
13.6.1965	22:01	DENİZLİ
7.3.1966	03:16	Varto-Hınıs (MUŞ)
19.8.1966	14:22	Varto (MUŞ)
22.7.1967	18:56	Mudurnu(ADAPAZARI)
26.7.1967	20:53	Pülümür (TUNCELİ)
3.9.1968	10:19	Bartın (ZONGULDAK)
23.3.1969	23:08	Demirci (MANİSA)
28.3.1970	03:48	Alaşehir (MANİSA)
6.4.1969	05:49	Karaburun (İZMİR)
28.3.1970	23:02	Gediz (KÜTAHYA)
19.4.1970	15:29	Gediz (KÜTAHYA)
23.4.1970	11:01	Demirci (MANİSA)
12.5.1971	08:25	BURDUR
22.5.1971	18:43	BİNGÖL
6.9.1975	12:20	Lice (DİYARBAKIR)
24.11.1976	14:22	Muradiye (VAN)
5.7.1983	15:01	Biga (ÇANAKKALE)
30.10.1983	07:12	ERZURUM – KARS
18.9.1984	15:26	Balkaya (ERZURUM)
5.5.1986	06:35	Doğuşehir(MALATYA)
6.6.1986	13:39	Doğuşehir(MALATYA)
7.12.1988	09:41	Kars – ERMENİSTAN
13.3.1992	19:08	ERZİNCAN
15.3.1992	18:16	Pülümür (TUNCELİ)
6.11.1992	21:08	Doğuşbey (İZMİR)
28.1.1994	17:45	MANİSA
1.10.1995	17:57	Dinar (AFYON)
5.12.1995	18:49	Kığı (TUNCELİ)
14.8.1996	01:55	Mecitözü (AMASYA)
22.1.1997	17:57	ANTAKYA
13.4.1998	18:14	Karlıova (BİNGÖL)
27.6.1998	16:55	Ceyhan (ADANA)
17.8.1999	03:01	Gölcük (KOCAELİ)
12.11.1999	18:57	DÜZCE
6.6.2000	05:41	Orta (ÇANKIRI)
15.12.2000	18:44	Sultandağı (AFYON)
25.6.2001	16:28	OSMANİYE
3.2.2002	09:11	Çay - Sultandağı (AFYON)
27.1.2003	07:26	Pülümür (TUNCELİ)

DATE	TIME	PLACE
1.5.2003	03:27	BİNGÖL
25.3.2004	21:30	Kandilli-Aşkale(ERZURUM)
2.7.2004	01:30	Doğubayazıt (AĞRI)
11.8.2004	18:48	Sivrice (ELAZIĞ)
25.1.2005	18:44	Hakkari
12.3.2005	09:36	Karlıova (BİNGÖL)
14.3.2005	03:55	Karlıova (BİNGÖL)
23.3.2005	23:44	Karlıova (BİNGÖL)
6.6.2005	10:41	Karlıova (BİNGÖL)
17.10.2005	08:45	Sığacık Körfezi (İZMİR)
17.10.2005	12:46	Sığacık Körfezi (İZMİR)
21.10.2005	00:40	Sığacık Körfezi (İZMİR)
9.2.2007	04:22	Sivrice (ELAZIĞ)
21.2.2007	13:05	Sivrice (ELAZIĞ)
20.12.2007	11:48	Bala (ANKARA)
27.12.2007	01:47	Bala (ANKARA)
8.3.2010	04:32	Başyurt-Karakoçan (ELAZIĞ)
8.3.2010	09:47	Başyurt-Karakoçan (ELAZIĞ)
19.5.2011	23:15	Simav (Kütahya)
22.9.2011	06:22	Cengerli-Refahiye (ERZİNCAN)
23.10.2011	13:41	Van
23.10.2011	13:56	Van Gölü
23.10.2011	14:32	Halkalı (VAN)
23.10.2011	23:45	Mollakasım (VAN)
25.10.2011	17:55	Değirmenözü (VAN)
9.11.2011	21:23	Edremit (VAN)
10.6.2012	15:44	Ölü Deniz Açıkları (AKDENİZ)
14.6.2012	08:52	Yeniköy-Silopi (ŞIRNAK)
8.1.2013	16:16	Kuzey Ege Denizi
15.6.2013	19:10:59	GİRİT ADASI-AKDENİZ
17.6.2013	00:39:06	GİRİT ADASI-AKDENİZ
28.12.2013	17:21:03	ANTALYA KÖRFEZİ-AKDENİZ
24.05.2014	12:25:01	GÖKÇEADA AÇIKLARI- EGE DENİZİ
24.01.2020	20:55	Sivrice, Elazığ
30.10.2020	14.51	İzmir Seferihisar
06.02.2023	04.17.35	Kahramanmaraş Pazarcık
06.02.2023	13.24.49	Kahramanmaraş'ın Elbistan ilçesi
20.02.2023	20.04	Hatay ili Defne ilçesi

*Reference: Boğaziçi University Kandilli Observatory and Earthquake Research Institute Regional Earthquake-Tsunami Monitoring and Evaluation Center*

As seen in Table 1, earthquakes sometimes strike in the middle of the night while people are asleep and catch them unexpectedly, resulting in death, disability, mental and physical trauma. Healthcare personnel, especially physicians and nurses, who will provide healthcare services to disaster victims for emergencies that occur in disasters and earthquakes, should be prepared for disasters and undergoing training on ‘disaster’ is a necessity for the uninterrupted and effective continuation of healthcare services in disaster situations (Avcı, Kaplan, Ortabağ, & Arslan, 2022). As a result of Hisar and Yurdakul’s research, it was determined that nursing students did not have sufficient knowledge about disasters (Hisar & Yurdakul, 2015). Training was found to increase the level of preparedness of nursing students and health personnel in disasters and to increase more efficient health service delivery, but it was stated that the formalization of this training would not make a positive contribution according to Dinçer and Kumru’s study (Dinçer & Kumru, 2021). It was stated that “Jenning’s Disaster Management Model in Nursing” could be used in training to be given to nursing students about disasters (Kalanlar, 2013). Again, in the study of Dinçer and Kumru, as a result of the “Comparative Analysis of Health Personnel’s Preparedness for Disasters and Emergencies According to Some Descriptive Statistics”, it was found that the preparedness for disasters increased with the increase in the years of experience of the health personnel and hospital experience. In studies specific to nurses and measuring disaster preparedness, it was observed that the majority of nurses were not ready for disasters (Labrague et al, 2016; Nofal et al, 2018). Nurses and health personnel who are not ready for disasters can be helped to be ready with training and experience. Although there is an increase in the number of patients applying to a hospital, it is also a disaster if the patients apply at the same time or in the near future and if there are more patients than the hospital capacity.

### **Conclusion and Recommendations**

The possibility of an earthquake in Turkey is an undeniable fact. Nurses, who are health professionals, constitute an important segment with their knowledge and skills before, during and after earthquakes.

Certificate programs in which nurses can specialize in the field of the possibility of individuals being harmed in earthquakes should be increased, courses in the field of earthquakes should be added to undergraduate education, field-specific congresses, symposiums, interviews, panels, etc. sessions should be increased, they should be able to take part and responsibility in non-governmental organizations and should be allowed to develop themselves in the most effective way.

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