Disaster Medicine and Public Health Preparedness

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Are Nurses Ready for a Disaster in Turkey? A Hospital Case

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Original Research

Cite this article: Koçak HS and Kaplan Serin E. Are nurses ready for a disaster in Turkey? A hospital case. *Disaster Med Public Health Prep*. **17**(e436), 1–9. doi: https://doi.org/10.1017/dmp.2023.100.

Keywords:
disasters; preparedness; behavior; nurses

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Abstract

Objective: In Turkey, which is a land of disasters, it is vital for nurses to be prepared before a disaster, and to exhibit an effective attitude and behavior during it. Having a large number of casualties during a disaster may cause inadequacies in receiving basic health care in the hospital.
Methods: This study was conducted in a descriptive and cross-sectional style to determine the disaster preparedness and preparedness perceptions of nurses. Data were collected with the Personal Information Form and Nurses' Perception of Disaster Preparedness Scale (NPDPS).
Results: Nurses' disaster experience, drill experience, and perusal of the disaster plan positively affected the perception of disaster. The disaster preparedness of the institution positively affected the perception of disaster preparation. A significant difference was determined between the requests for information regarding disaster education and NPDPS. A statistically significant relationship was found between terrorist attacks, earthquake exposure, and the total scale score of NPDPS.
Conclusions: Consequently, nurses and health institutions, whose responsibilities become graver in disasters, have duties such as providing treatment and medical support. Therefore, it was suggested that disaster nursing and disaster management should have been included in the in-service training of nurses.

Disasters are events that are detrimental to the safety, well-being, and local capacities of people and communities and are, in general, characterized by human casualties and injury.[1] Disasters are the consequences of events that significantly disrupt the daily life of a community or society and cause physical, economic, social, and environmental losses and hazards to people, exceeding the ability of a community or society to struggle with the help of current potentials. Disasters are mostly classified as "natural, human-induced, and technological."[2] Various disasters are being experienced in the world every day. Earthquakes, landslides, avalanches, and storms are natural disasters. Industrial explosions, nuclear power plant accidents, dam failures, etc., are examples of technological disasters. Large-scale fire, war, terrorism, etc., however, are all human-induced disasters.[3] Upon considering natural disasters all around the world, it is seen that 28 of 31 natural disasters are caused by meteorological phenomena. The types and orders of the significance of natural disasters also tend to differ across countries. For instance, natural disasters in the Mediterranean Region involve droughts, floods, forest fires, landslides, hailstorms, avalanches, and frosts. In Turkey, the most common meteorological natural disasters are hail, floods, frost, forest fires, drought, heavy rain, strong wind, lightning, avalanche, snow, and storms.[4] In Turkey, which is a disaster-prone country, disasters are becoming more common, especially in recent years.

Disaster preparedness is the process through which activities such as predisaster planning, training, exercises, the establishment of early warning systems, emergency aid material stocks, and informing and raising awareness of the public are conducted continuously and sustainably to react to disasters in a timely, rapid, and effective manner.[5] According to the Disaster and Emergency Management Presidency (AFAD) (2021), preparedness is briefly "disaster preparedness", and according to the broad definition of UNDRR (2021), it is "the knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively predict, respond to, and recover from the impacts of potential, imminent, or current disasters."[6] Preparedness is crucial for establishing and maintaining early warning and communication processes. Preparedness not only provides time for affected people to evacuate to a safe place, but also helps emergency managers plan.[7] The purpose of preparedness is to increase life safety when disasters occur. For this reason, deaths, injuries, illnesses, psychological problems and effects caused by disasters are reported and announced to relevant institutions to repeat similar situations, minimize damages, and review response plans.[6] Lack of preparedness cannot produce earthquakes or floods, but it can increase the incurred damage. Preparedness is basically a process of developing a response and management capability before an emergency occurs to anticipate potential hazards and thus ensure the correct use of necessary resources.[1]

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Collaboration of various sectors (police, emergency rescue teams, fire brigade, health personnel, civil defense teams, etc.) and a multi-domain approach are needed in the development of disaster plans.[8] Because it is not possible to completely prevent disasters, it is of great importance that individuals, institutions, and countries make the best use of the predisaster period and be prepared. It should not be forgotten that the higher the disaster preparedness, the lower the damage incurred due to disaster.[9] Health professionals should have the necessary knowledge and equipment to respond and act appropriately in disasters. Nurses, belonging to the largest group of health institutions, are 1 of the most important communities of society in terms of their disaster awareness, preparedness, roles, attitudes, and behaviors in providing public health and welfare. Therefore, nurses' predisaster preparedness as well as effective attitudes and behaviors during disasters are vital. Thus, it would be ensured that they are least affected by disasters and fulfill their responsibilities without interruption.[10] The aim of this study is to determine the disaster preparedness and preparedness perceptions of nurses.

Methods

The research study is conducted in a descriptive and cross-sectional manner with the participation of nurses employed in Şahinbey Research and Application Hospital at Gaziantep University located in Gaziantep in the Southeastern region of Turkey. Power analysis is conducted to determine the sample size. According to the analysis, the sample size is determined as 104 nurses.[11] During the data collection phase, 185 nurses have been reached. The data of the study are collected by means of face-to-face interviews over the period October 1, 2022 to October 31, 2022. The nurses who agreed to participate after being informed are included in the study.

Data Collection

It is conducted as a single-phase descriptive study. The relevant data are collected with Personal Information Forms and Nurses' Perception of Disaster Preparedness Scale (NPDPS).

Personal ınformation form

In this form, which was prepared by the researcher, there are 25 questions to determine the demographic characteristics of nurses and their knowledge, skills, and education levels regarding the disaster.

Nurses' Disaster Preparedness Perception Scale (NPDPS)

NPDPS was originally developed by Fung et al. (2008), and the validity and reliability test in Turkish was performed by Özcan (2013).[12] NPDPS, which was developed with the aim of measuring nurses' preparedness for disaster, consists of 20 items. The scale is a 5-point Likert-type scale (1, strongly disagree; 2, disagree; 3, partly agree; 4, agree; 5, strongly agree). NPDPS consists of 3 sub-dimensions: the disaster preparedness sub-dimension (6 items), the disaster intervention sub-dimension (9 items), and the postdisaster stage sub-dimension (5 items). It consists of 3 sub-headings: the preparation phase (questions 1–6), the intervention phase (questions 7–15), and the postdisaster phase (questions 16–20). No reverse-scored item exists in the scale. The higher the score obtained from the scale, the higher the perception of disaster preparedness. The Cronbach's Alpha of NPDPS is found to be 0.907.[12] In this study, the Cronbach alpha value of NPDPS was calculated as 0.85.

Data Analysis

The data are evaluated with the SPSS 22.0 software. Frequency, percentage, and arithmetic mean values of demographic data are presented. The normal distribution is evaluated with the Kolmogorov-Smirnov. An independent 2-sample t-test is performed to examine the difference between the 2 groups. A 1-way analysis of variance (ANOVA) test is performed when examining the difference between more than 2 groups. The significance level is determined as 0.05.

Ethical Approval

The required permission was obtained before the study to meet the ethical requirements of clinical research. Ethical approval was obtained from Gziantep University Clinical Research Ethics Committee (Reference No: 2022/191). Written approval was obtained from the hospital administration where the study was conducted. Detailed information about the aim of the study and what participation would involve was provided on the first page of the questionnaire. Participants were informed that they could withdraw at any time, without providing a reason, and that all information and opinions given would be confidential and anonymous.

Results

Table 1 indicates the distribution of some sociodemographic characteristics of the nurses who participated in the study, as well as the sub-dimension and total mean scores of NPDPS. The mean age of the nurses is 31.57 ± 0.52, and the duration of employment is 9.38 ± 0.57 y.

The preparation phase sub-dimension of the NPDPS scale is determined as 4.40 ± 0.62, the intervention phase sub-dimension is determined as 3.45 ± 0.74, the postdisaster phase sub-dimension is determined as 3.76 ± 0.72, and the total score of the NPDPS is determined as 3.81 ± 0.54. A total of 58.9% of the nurses received basic disaster awareness training, 51.9% participated in fire drills, 74.1% would feel the most anxiety following the disaster, and 94.6% defined natural disasters as earthquakes, avalanches, and landslides.

A total of 85.4% of the nurses stated that they assumed a caregiver role during the disaster.

Table 2 presents some characteristics of the nurses and the distribution of the sub-dimension and total scores of NPDPS. According to gender, it is determined that the NPDPS preparation stage sub-dimension score is higher for women, the NPDPS preparation stage sub-dimension score and the NPDPS total score of the nurses who had a disaster experience are higher, the NPDPS intervention and postdisaster stage sub-dimension mean scores of the nurses who participated in the disaster drills before and the NPDPS total score are higher, the NPDPS intervention stage sub-dimension mean scores of the nurses who perused the unit disaster plan and NPDPS total score are higher, the NPDPS intervention stage sub-dimension mean scores of the nurses who stated that nurses had a role before the disaster are higher, and the NPDPS total scores of the nurses who stated that nurses who assumed postdisaster roles are higher. The total score of NPDPS is determined to be higher, and it is statistically significant ($P < 0.05$).

https://doi.org/10.1017/dmp.2023.100 Published online by Cambridge University Press

Table 1. Some sociodemographic and disaster-based characteristics of nurses, sub-dimensions, and total mean scores of NPDPS

Characteristics	X ± SD	Minimum-maximum
Age (years)	31.57 ± 0.52	22–52
Duration of employment (years)	9.38 ± 0.57	0–35
NPDPS Preparation sub-dimension	4.40 ± 0.62	3.00–5.00
NPDPS Intervention sub-dimension	3.45 ± 0.74	1.56–5.00
NPDPS Postdisaster sub-dimension	3.76 ± 0.72	1.60–5.00
NPDPS total score	**3.81 ± 0.54**	**2.60–5.00**
	n	%
Disaster-based training types of nurses *		
Basic disaster awareness	109	58.9
Search and rescue	33	17.8
CBRN	32	17.3
Fire	99	53.5
Types of disaster-based drills in which nurses participate*		
Fire	96	51.9
Earthquake	84	45.4
Other drills	10	5.4
Feelings of nurses following the disaster *		
Stress	145	78.4
Panic	115	62.2
Anxiety	137	74.1
Fear	129	69.7
Incompetence	51	27.6
Low motivation	41	22.2
Psychological disorders	15	8.1
Other	2	1.1
Disaster definitions of nurses *		
Natural disasters such as earthquakes, landslides, and avalanche	175	94.6
An epidemic of diseases with a very high contagion rate such as swine flu and bird flu	92	49.7
Terrorist acts with biological, chemical, or explosive agents	109	58.9
Human losses due to coal and gold mine subsidence	91	49.2
Other	12	6.5
Nurses' roles during disaster *		
Advisory roles	115	62.2
Educator roles	111	60.0
Caregiver roles	158	85.4
Administrative role	85	45.9
Coordinator role	111	60.0
Other roles	1	0.5

*More than 1 option is marked. Abbreviation: CBRN, chemical, biological, radiation, nuclear.

A statistically significant relationship is found between the most recent educational status and the NPDPS intervention and postdisaster stage sub-dimension mean scores and the NPDPS total scale score ($p < 0.05$). A statistically significant relationship is found between the existence of the unit disaster plan and the NPDPS intervention stage and postdisaster stage sub-dimension mean scores and the NPDPS total scale score ($p < 0.05$). A statistically significant relationship is found between the nurses' disaster preparedness and the NPDPS intervention stage and postdisaster stage sub-dimension mean scores and the NPDPS total scale score ($p < 0.05$). A statistically significant relationship is found between the hospital's disaster preparedness, the NPDPS intervention stage, and the postdisaster stage sub-dimension mean scores and the NPDPS total scale score ($p < 0.05$) (Table 3).

Ability to perform basic first aid practices, ability to initiate appropriate isolation and decontamination procedures in case of CBRN exposure, ability to assess the transport status of the injured individual, and disaster intervention staff and individuals affected by a disaster. A statistically significant relationship is found between the ability to evaluate their psychological reactions during or after the disaster and the NPDPS total scale score ($P < 0.05$) (Table 4).

A statistically significant relationship is found between the desire for disaster management education, perspective on first aid education, perspective on field triage education, perspective on basic life support education, perspective on advanced cardiovascular life support education, perspective on trauma advanced life support education, perspective on adult advanced life support education, perspective on advanced life support education in children, the perspective on posttraumatic mental care education, the perspective on infection control education, the perspective on communication education in disaster and crises, and the perspective on education for all courses and NPDPS total scale score ($p < 0.05$) (Table 4).

A statistically significant relationship is found between the situation of encountering a terrorist attack and the NPDPS total scale score ($p < 0.05$). A statistically significant relationship is found between the earthquake experience and the NPDPS total scale score ($p < 0.05$). There is no statistically significant relationship between the situation of encountering fire, explosion, and landslide, and the NPDPS total scale score ($p > 0.05$) (Table 4).

Discussion

Natural disasters are common worldwide and have long-term impacts on individuals, families, communities, and the environment.[13] Due to rapid population growth, deterioration of natural balance with urbanization, global warming, and climate change, disasters are increasing and affecting various countries.[1,13] All around the world (2020), 500 natural and human-induced disasters have occurred, affecting 998,647,04 people and causing 17,664 deaths and 19,444 injuries. In Turkey, 15 disasters have been recorded in 2020, where 76,995 people were affected, 3022 people were injured, and 349 people died.[14] It is a well-known fact that extraordinary situations caused by disasters cannot be prevented or controlled. Therefore, it is vital that various groups, including health-care professionals and community organizations, are prepared for disasters in an effective fight against disasters.[13] Nurses, who constitute the largest group among the health-care personnel in Turkey, as in the whole world, usually work in difficult situations with limited resources and assume vital roles whenever disasters ocur.[15] According to the data from Turkey (2020), there are 733,888 health-care professionals, 227,292 of which are nurses.[16] Nurses assume a critical role in the disaster process.[17] In this study, which is conducted to determine nurses' perceptions of disaster preparedness, the preparation phase sub-dimension of nurses is determined as 4.40 ± 0.62, the intervention phase sub-dimension is determined as 3.45 ± 0.74, the postdisaster phase sub-dimension is determined as 3.76 ± 0.72, and the total score of NPDPS is determined as 3.81 ± 0.54. In the study by Tercan and Şahinöz, the NPDPS total scale score was determined

https://doi.org/10.1017/dmp.2023.100 Published online by Cambridge University Press

Table 2. Distribution of some characteristics of the nurses and the total mean scores of the NPDPS sub-dimension

Characteristics	n	%	Preparation phase X ± SD	Intervention phase X ± SD	Postdisaster phase X ± SD	Disaster X ± SD
Gender						
Female	127	68.6	4.49 ± 0.050	3.46 ± 0.06	3.79 ± 0.06	3.85 ± 0.048
Male	58	31.4	4.20 ± 0.089	3.41 ± 0.09	3.69 ± 0.08	3.72 ± 0.06
t			2.976	0.491	0.858	1.604
p-Value			0.003	0.624	0.392	0.111
Disaster education status						
Educated	135	73.0	4.41 ± 0.05	3.45 ± 0.06	3.78 ± 0.06	3.82 ± 0.04
Non-educated	50	27.0	4.38 ± 0.08	3.44 ± 0.11	3.69 ± 0.11	3.78 ± 0.08
t			0.270	0.080	0.785	0.406
p-Value			0.788	0.936	0.434	0.685
Disaster experience status						
Yes	79	42.7	4.53 ± 0.06	3.53 ± 0.08	3.85 ± 0.07	3.91 ± 0.05
No	106	57.3	4.30 ± 0.06	3.38 ± 0.06	3.69 ± 0.07	3.73 ± 0.05
t			2.457	1.378	1.490	2.208
p-Value			0.015	0.170	0.138	0.028
Participation in disaster drills						
Participated	97	52.4	4.37 ± 0.06	3.62 ± 0.07	3.90 ± 0.07	3.91 ± 0.05
Not participated	88	47.6	4.43 ± 0.06	3.26 ± 0.07	3.60 ± 0.07	3.70 ± 0.05
t			-0.707	3.364	2.882	2.782
p-Value			0.481	0.001	0.004	0.006
A perusal of the unit disaster plan						
Yes	75	40.5	4.34 ± 0.07	3.70 ± 0.08	3.86 ± 0.08	3.93 ± 0.06
No	110	59.5	4.44 ± 0.05	3.27 ± 0.06	3.69 ± 0.06	3.72 ± 0.04
t			-0.991	4.059	1.553	2.633
p-Value			0.322	p<0.001	0.120	0.009
Nurses' perspectives on predisaster roles						
Exist	137	74.1	4.40 ± 0.05	3.52 ± 0.0.6	3.79 ± 0.06	3.85 ± 0.04
Do not exist	48	25.9	4.38 ± 0.09	3.24 ± 0.10	3.66 ± 0.10	3.69 ± 0.08
t			0.190	2.286	1.843	1.091
p-Value			0.849	0.023	0.067	0.277
Nurses' perspective on the roles during the disaster						
Exist	171	92.4	4.42 ± 0.04	3.47 ± 0.05	3.78 ± 0.05	3.83 ± 0.04
Do not exist	14	7.6	4.19 ± 0.20	3.17 ± 0.16	3.42 ± 0.17	3.54 ± 0.13
t			1.340	1.455	1.788	1.972
p-Value			0.182	0.147	0.075	0.050

as 3.68 ± 0.53, the preparation stage score was determined as 4.19 ± 0.75, the intervention stage score was determined as 3.40 ± 0.68, and postdisaster stage score was determined as 3.58 ± 0.72.[18] Different scales have been used in different studies to measure the disaster preparedness of nurses, and the common finding is that nurses are not prepared enough for disasters. All studies reported that nurses were prepared at low and moderate.[19–32] Wang et al. (2021) argued that nurses' perception of disaster preparedness was moderate.[33] In this study, the disaster preparedness scores of the nurses are determined as moderate.

This situation increases their awareness, self-confidence, and skills in disaster intervention and reduces their vulnerability to unforeseen phenomena.[9] In this study, it was determined that nurses who experienced disasters had higher NPDPS preparation stage sub-dimension scores and NPDPS total scores. Studies have attributed previous disaster intervention experiences to a higher perceived level of disaster preparedness.[20,21,26,29,30] Baack and Alfred (2013) reported that nurses' previous experiences with major disasters affected their perceived competence in disaster preparedness.[21] It is consistent with the findings of O'Sullivan et al. (2008).[34] They found that nurses who had previously been exposed to infectious disease outbreaks, including severe acute respiratory syndrome (SARS) in 2009, had higher levels of disaster preparedness perception.[32]

Nurses assume important and critical roles in their care for disaster preparedness, their active role in the disaster, and maintaining the health and welfare of society.[17,18] Nurses need to know their roles to fully fulfill their duties and responsibilities in disasters. Nurses should follow up-to-date education and technology to provide individuals, families, and communities with high-quality health care during and after disasters. It was predicted that nurses who were prepared for disasters and received training on disasters could play an essential role in the event of disasters and cope better with disasters.[35] The nurses who

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Table 3. Distribution of some sociodemographic characteristics of nurses, different disaster experiences and educational needs, and the sub-dimension and total mean scores of NPDPS

Characteristics	*n*	%	Preparation phase X ± SD	Intervention phase X ± SD	Postdisaster X ± SD	Disaster X ± SD
Education						
High school	16	8.6	4.41 ± 0.72	4.16 ± 0.77	4.30 ± 0.78	4.27 ± 068
Associate degree	19	10.3	4.29 ± 0.66	3.39 ± 0.83	3.64 ± 0.59	3.72 ± 0.57
Undergraduate degree	133	71.9	4.42 ± 0.60	3.38 ± 0.70	3.75 ± 0.73	3.78 ± 0.50
Graduate degree	17	9.2	4.37 ± 0.59	3.39 ± 0.62	3.44 ± 0.55	3.70 ± 0.42
F			0.231	5.832	4.382	4.677
p-Value			0.874	0.001	0.005	0.004
Existence of unit disaster plans						
Exist	108	58.4	4.36 ± 0.59	3.69 ± 0.69	3.85 ± 0.73	3.93 ± 0.52
Do not exist	7	3.8	4.76 ± 0.40	3.30 ± 0.66	3.91 ± 0.10	3.89 ± 0.19
I do not know	70	37.8	4.42 ± 0.66	3.09 ± 0.68	3.60 ± 0.73	3.62 ± 0.53
F			1.422	15.813	2.734	7.613
p-Value			0.244	<0.001	0.068	0.001
Nurses' disaster preparedness						
Yes	38	20.5	4.37 ± 0.52	4.13 ± 0.75	4.36 ± 0.65	4.26 ± 0.56
No	65	35.1	4.31 ± 0.65	3.14 ± 0.67	3.51 ± 0.70	3.58 ± 0.46
Partially	82	44.3	4.48 ± 0.63	3.38 ± 0.57	3.67 ± 0.62	3.78 ± 0.45
F			1.343	28.530	21.352	23.687
p-Value			0.264	<0.001	<0.001	<0.001
Hospital's disaster preparedness						
Yes	34	18.4	4.43 ± 0.47	3.97 ± 0.67	4.23 ± 0.53	4.17 ± 0.42
No	45	24.3	4.38 ± 0.67	3.27 ± 0.68	3.71 ± 0.51	3.71 ± 0.48
Partially	106	57.3	4.40 ± 0.64	3.35 ± 0.71	3.63 ± 0.79	3.74 ± 0.55
F			0.054	11.715	9.911	10.312
p-Value			0.948	<0.001	<0.001	<0.001

participated in the disaster drills had a higher NPDPS intervention and postdisaster stage sub-dimension score and the NPDPS total score, the nurses who perused the unit disaster plan had a higher NPDPS intervention stage sub-dimension score and the NPDPS total score, and the nurses who stated to assume a role before the disaster had a higher NPDPS score. It was determined that the intervention stage sub-dimension mean score was higher and the total score of NPDPS was higher for the nurses who stated to assume roles following the disaster ($P < 0.05$). Bayrak Aykan et al. (2022) determined that the disaster preparedness of nurses who received disaster preparedness training was 3571 times higher than those who did not,[13] and nurses who participated in disaster drills had higher preparedness perceptions.[18] Tzeng et al. (2016) found that nurses with previous disaster training reported higher personal preparedness for disaster intervention.[29] Similarly, Al Thobaity et al. (2015) asserted that the majority of respondents reported that most of their disaster management knowledge and skills were acquired from real-time drills and disaster training.[20] It is expected that nurses who participate in disaster education are more likely to have sufficient knowledge and practice. Some studies in the literature, which support our research results, indicated that health-care staff who have acquired disaster experience by receiving training on disaster or participating in drills have a high perception of disaster preparedness.[18,21,36] In the study of Wang et al. (2021), 2 of the main factors associated with disaster preparedness were expressed as disaster education and disaster drill experience.[33] Sattar et al. (2018) found that a positive change occurred in the knowledge and attitudes of nursing students following disaster education.[37] In this study, it was seen that education and disaster drills positively affected nurses' perceptions of disaster preparedness.

If nurses and other health professionals have sufficient knowledge and equipment to prepare for disasters; they can provide faster planning and service.[18] In this study, a statistically significant relationship is found between the last school from which the nurses graduated and the NPDPS intervention and postdisaster stage sub-dimension mean scores and the NPDPS total scale score ($P < 0.05$). High school graduate nurses' NPDPS intervention and postdisaster stage sub-dimension mean scores and NPDPS total scale mean score are higher than other education groups. This may have been due to the fact that high school graduate nurses had been nurses for a long time. During this period, the nurse's participation in information regarding disasters with more courses and training programs may have affected the preparedness perception score.

It is quite important for the health-care professionals working in hospitals to intervene and care for the injured during and after the disaster. Therefore, planning should be done before disasters occur. In this study, it is determined that more than half of the nurses are aware of the unit disaster plan, and this group has better perceptions of disaster preparedness. In the literature, nurses' awareness of workplace disaster protocols or plans has been

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Table 4. Distribution of nurses' practice skills, educational needs, and disaster experiences, and the total mean scores of NPDPS during disasters

	Should be taught	I can do it with help	I can do it	I can do it and teach others	F *p*-Value
Ability to perform basic first aid practices	3.30 ± 0.41	3.61 ± 0.45	3.75 ± 0.49	4.17 ± 0.48	18.239 <0.001
Ability to initiate appropriate isolation and decontamination processes in case of CBRN exposure	3.57 ± 0.49	3.80 ± 0.47	4.03 ± 0.47	4.54 ± 0.35	19.275 <0.001
The ability to evaluate the transportation status of the injured individual	3.27 ± 0.43	3.66 ± 0.50	3.79 ± 0.46	4.17 ± 0.50	16.945 <0.001
Evaluation of the psychological reactions of the affected individuals and disaster intervention officers during or after the disaster	3.48 ± 0.54	3.60 ± 0.48	3.89 ± 0.45	4.27 ± 0.46	17.899 <0.001
Perspective on disaster education		Required for disaster preparedness	Attended / attending	I would like to attend	F *P*-Value
Perspective on education about disaster management		3.68 ± 0.48	4.09 ± 0.52	3.84 ± 0.57	8.771 <0.001
Perspective on first aid training		3.66 ± 0.40	4.00 ± 0.54	3.77 ± 0.62	7.244 0.001
Perspective on field triage training		3.63 ± 0.41	4.07 ± 0.62	3.87 ± 0.54	10.157 <0.001
Perspective on basic life support training		3.61 ± 0.40	3.99 ± 0.60	3.86 ± 0.52	9.565 <0.001
Perspective on advanced cardiovascular life support training		3.55 ± 0.43	4.12 ± 0.48	3.86 ± 0.55	22.346 <0.001
Perspective on trauma advanced life support training		3.57 ± 0.42	4.06 ± 0.57	3.91 ± 0.52	15.613 <0.001
Perspective on adult advanced life support education		3.57 ± 0.47	4.11 ± 0.49	3.87 ± 0.52	18.732 <0.001
Perspective on advanced life support education in children		3.65 ± 0.45	4.10 ± 0.61	3.85 ± 0.52	10.413 <0.001
Perspective on posttraumatic mental care education		3.63 ± 0.48	4.10 ± 0.58	3.93 ± 0.52	10.988 <0.001
Perspective on infection control education		3.59 ± 0.49	4.06 ± 0.45	3.91 ± 0.54	14.100 <0.001
Perspective on communication education in disaster and crisis situations		3.59 ± 0.47	4.20 ± 0.47	3.93 ± 0.52	20.135 <0.001
Perspective on education for all courses		3.66 ± 0.46	4.20 ± 0.49	3.85 ± 0.56	9.328 <0.001
Types of disasters encountered in life		Not intensive	Less intensive	Intensive	F *P*-Value
The situation of encountering a fire		3.82 ± 0.52	3.89 ± 0.60	3.62 ± 0.41	2.548 0.081
The situation of encountering an explosion		3.78 ± 0.50	3.91 ± 0.62	3.64 ± 0.27	2.169 0.117
The situation of encountering a terrorist attack		3.78 ± 0.51	3.76 ± 0.57	4.20 ± 0.56	4.388 0.014
The situation of encountering an earthquake		3.67 ± 0.55	3.99 ± 0.58	3.75 ± 0.45	5.732 0.004
The situation of encountering a landslide		3.80 ± 0.50	3.88 ± 0.65	3.56 ± 0.18	1.019 0.363

addressed as a factor in disaster preparedness.[19,22,23,25,27,31] In 4 studies, the majority of nurses reported that they were aware of the existence of a disaster management protocol in their workplace.[22,23,27,31] In 3 different studies conducted in Turkey, it was stated that 76.1%, 68.4%, and 83.4% of nurses were aware of the hospital's disaster plan, and more than half of those who have knowledge perused that plan.[11,18,38] In the study by Fung et al., it was determined that 61% of the nurses perused the hospital disaster plan.[23] The perusal of the disaster plan and awareness of what to do in the presence of a disaster enables nurses to effectively manage this process. In this process, being familiar with the disaster plan may have eliminated the uncertainty and positively affected the perception of disaster preparedness.

Institutions should provide training opportunities for nurses in terms of disaster preparedness. If nurses are well aware of the planning and execution processes of disaster management at the top levels of the country, they can more easily ensure that the disaster plans they prepare at the personal/institutional level are compatible with the national disaster plans of the country prepared for the general public. In this study, disaster preparedness as a nurse and hospital affected the NPDPS total scale and subdimension scores. It is imperative that nurses become a part of their local or national disaster management programs. All nurses should improve their professional skills in providing adequate health-care services before, during, and after disasters by participating in prevention, mitigation, preparedness, and assistance activities. Participation of nurses in disaster prevention, mitigation, preparedness, and recovery activities is recommended because they are ecpected to enhance their professional skills to provide adequate health services before, during, and after disasters.[9]

Health systems and health-care delivery in disaster situations would be only successful when nurses have basic disaster competencies or the skills to intervene quickly and effectively.[15] In this study, a statistically significant relationship is found between the ability to perform basic first aid practices, the ability to initiate appropriate isolation and decontamination procedures in case of CBRN exposure, the ability to evaluate the transport status of the injured individual, the ability to evaluate the psychological reactions of the affected individuals and disaster response officers during or after the disaster, and the NPDPS total scale score, and those who stated that they could have these competencies and teach them to others has a higher NPDPS total mean score. Nurses provide assistance and care throughout the disaster process to minimize the health-related hazards and life-threatening damages that may occur during and after the disaster. For disaster nurses to provide the expected service, they should have knowledge of various issues in the field of disaster nursing.[39] For disaster intervention; real-time exercises, desk exercises, drills, drills, and scenarios are determined as necessary to prepare nurses for disasters.[22,25] Nurses assume roles such as being prepared for disasters, participating in disaster management in terms of intervention, effective management, performing postdisaster care functions, and making efforts for the health and welfare of society.[9,23] Studies have indicated that most nurses do not consider themselves ready to intervene in disasters, and their education and skills are not at a sufficient level to make disaster-based interventions.[19,23,25,40,41] In this study, it is crucial for nurses to consider themselves sufficient in terms of physical and psychological intervention in the event of a disaster.

Disasters can cause a great deal of harm to society. It is clear that nurses need more training on various aspects of emergency preparedness. Disaster preparedness, which is an emergency for a nurse, requires technical competencies such as basic scientific knowledge, disaster experience, and disaster drills.[13] In this study, the NPDPS total scale scores of the nurses who have attended or continue to attend disaster management training, first aid training, field triage training, basic life support training, have previously participated in advanced cardiovascular life support training, trauma advanced life support training, adult advanced life support training, advanced life support training in children, posttraumatic mental care training, infection control training, communication training in disaster and crisis situations, and training for all courses, are determined as higher. Although Özdemir and Sarıkamış (2006) stated that quite a high ratio of 83% of the health-care staff working in the emergency departments of university hospitals in Ankara was not familiar with triage; in a study conducted on 823 nurses in Japan, it was stated that 31% of nurses were not familiar with triage.[42,43] In separate studies conducted in the Philippines[25] and Hong Kong,[23] nurses identified first aid training, field triage, advanced basic life support, and infection control as necessary training needs to prepare nurses.[22,25] Labrague et al. (2016) and Baack and Alfred (2013) suggested that nurses should have been offered opportunities to participate in disaster education and real-time drills to develop their confidence and familiarity with intervening in disasters.[21,25] Nurses work actively in tasks such as determining priorities in disasters, triage, and acute care.[43] Therefore, nurses should have the knowledge and competence to intervene effectively in providing physical and psychological care in the field or in hospitals during disasters. Although effective education and training are believed to be crucial to prepare to provide disaster care and maintain a confident nurse workforce, current evidence has not proven to be successful in education and training.[44] Considering the dynamic process of education, it is essential to update nurses' knowledge with continuing education programs.

Upon examining natural disasters all around the world, it is seen that 28 of 31 natural disasters are meteorological disasters. According to 2020 AFAD data, 321 earthquakes, 270 storms, hail, extreme winter conditions, 177 floods, and 107 landslides occurred in Turkey.[13] In this study, a statistically significant relationship is found between the situation of encountering a terrorist attack and experiencing an earthquake and the NPDPS total scale score ($P < 0.05$). Earthquake ranks first among the natural disasters frequently experienced in Turkey. In this study, 94.6% of the nurses define disasters as natural disasters such as earthquakes, landslides, and avalanches. A total of 85.4% of the nurses stated to assume a caregiver role during the disaster. In this study, 94.6% of the nurses defined disasters as natural disasters such as earthquakes, landslides, and avalanches. Tercan and Şahinöz (2021) defined a disaster as a natural disaster.[18] The type of disasters encountered by nurses may also have affected their perceptions of disaster preparedness.

Conclusıons

It is crucial for nurses employed in disaster areas to be prepared for disasters and to be able to manage disasters. Although all disasters are different, health institutions, especially nurses, should be prepared for disasters to cope with disasters. As a result, in our study, it was determined that more than half of the nurses working in a University Hospital considered themselves partially competent in disaster preparedness, intervention, and postdisaster categories, and factors such as socio-demographic characteristics and

https://doi.org/10.1017/dmp.2023.100 Published online by Cambridge University Press

experience were not effective. A perusal of the hospital disaster plan and attendance in disaster education programs were effective in disaster preparedness, intervention, and postdisaster situations. Disasters cannot be prevented, but it is important for health-care institutions and nurses to be prepared and manage in the best way before, during, and after the disaster. Therefore, it is recommended that health institutions should be organized. Disaster nursing education should be given importance to enhance the disaster preparedness of nurses. Disaster training enables nurses to assume more active roles in the presence of disasters. Furthermore, regular drills for nurses would ensure that health-care teams function in a systematic manner. As a distance education method, education through virtual social networks can be used due to its accessibility and ease of use.

Limitations

This study was conducted in a state hospital in the Southeastern Region of Turkey. The obtained results cannot be generalized in terms of nurses employed in other regions and institutions. The responses given by the nurses to the questionnaires were their own statements.

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