

The Effect of Disaster Nursing Course on Nursing Students' Perceptions of Disaster Awareness, Preparedness, Response Self-Efficacy

Özüm Erkin¹, Gülbin Konakçı², Gülcihan Arkan³

Abstract

Nurses are the first health professionals to interact with people affected by disasters. The success of this interaction depends on the outcome of the process which is affected by the disaster management knowledge and skills of the nurse. This study was conducted to examine the effect of disaster nursing course on nursing students' disaster awareness, preparedness and intervention self-efficacy perceptions. The study was conducted in X University, Faculty of Health Sciences, Department of Nursing in the fall semester of 2021-2022 in a one-group quasi-experimental study design with pre-test post-test design. The population of the study consisted of senior students (n: 60) studying in the nursing department, while the sample was not selected (n: 43). "Personal information form", "Disaster Awareness Scale", "Disaster Preparedness Scale" and "Disaster Response Self-Efficacy Scale" were used to collect the data. The research data were collected in the first week (pre-test) and the last week (post-test) of the disaster nursing elective course. While 53.5% of the participants were between 22-23 years old, 55.8% of them stated that they had experienced a real disaster. It was found that there was a statistically significant difference between the pre-test and post-test scores of the participants' pre-disaster awareness dimension, post-disaster awareness dimension and disaster awareness perception scale ($p < 0.05$). A statistically significant difference was found between the pre-test and post-test scores of the participants from the disaster preparedness scale, disaster response self-efficacy scale ($p < 0.05$). It was observed that the disaster nursing course positively improved nursing students' disaster awareness, disaster preparedness and disaster response self-efficacy perceptions.

Keywords: Awareness, Course, Disaster, Disaster Response, Nursing Students, Preparedness

1. INTRODUCTION

The frequency and extent of disasters, the number of injured and dead, and economic damage have increased significantly over the past three decades (CRED, 2020). Unfortunately, we witnessed this increase in the Pazarcık/Kahramanmaraş earthquake, one of the greatest and most devastating disasters in our country. In this context, all health disciplines acknowledge that disaster preparedness is no longer an option, but a critical phenomenon (Huh, 2019). It is clear that various nursing issues related to the roles, responsibilities, training and practice areas of nurses should be addressed so that they can provide health care in the event of a disaster. In developed countries, the disaster nurse plays an important role in the disaster management

¹ Assoc. Prof. Dr., Izmir Demokrasi University Health Science Faculty, Department of Nursing, Izmir, Türkiye
e-mail: ozum.erkin@gmail.com, ORCID: 0000-0002-0977-2854

² Asst. Prof. Dr., Izmir Demokrasi University Health Science Faculty, Department of Nursing, Izmir, Türkiye
Corresponding Author e-mail: ygulbin@gmail.com, ORCID: 0000-0002-0567-574X

³ Asst. Prof. Dr., Izmir Demokrasi University Health Science Faculty, Department of Nursing, Izmir, Türkiye
e-mail: gulcihan.48@gmail.com, ORCID: 0000-0002-6085-5831

system, and they have role of successful practices in this field, rights in both organizational and legal fields, and constantly evolving roles and functions (Veenema, 2019).

In the future, nurses are recognized as having the greatest potential to take an active part in disasters. Nursing students provide a potential workforce that can increase the capacity of the health system and improve the health outcomes of the population in times of crisis. (Ranse, 2022; Veenema, 2019). For this reason, necessary education programs, technological applications, and resources are needed for nursing education to prepare nursing students to be ready and respond to disasters at an adequate level (Huh, 2019). They emphasized that providing education of disaster for nursing students will provide positive results, like reduced death rates, improved healthcare, and reduction in disaster-related costs for individuals and communities exposed to disasters (Erdoğan, 2018). In this sense, revealing the nursing education of disaster care and the effectiveness of these training programs is identified as an important research priority in this area (Kalanlar, 2018). The disaster nursing education is not sufficiently included in the nursing curricula in many countries. Higher education institutions can make a great contribution to all stages of disaster management (Kalanlar, 2018). However, it is known that a culture of disaster preparedness and reduction of damage can be created by raising awareness about corporate disaster management plans first (Ogunleye, 2019; Sattar, 2018). Many disaster nursing education programs are offered as themes within existing courses (such as health protection and promotion, public health, and emergency nursing courses), non-credit elective courses, or even as optional seminars and conferences, according to the literature. (Chen, 2018; Currie, 2018; Digregorio, 2019; Jung, 2018; Loke, 2021). In Turkey, it is seen that nursing students are given education on disaster management under different titles such as "Disaster Nursing and First Aid Practices," "First Aid" or "Nursing Care in Disasters" but it is known that most of these education programs are limited to emergency response and basic rescue issues (Kalanlar, 2018). However, it is stated that disaster nursing education should consist of topics covering nursing practices at every stage of the disaster, including pre-disaster, while-disaster, post-disaster, and recovery stages (ICN,2019; WHO,2017). Disaster nursing and disaster management education in Turkey cannot be carried out scientifically as it should be (Özpulat, 2018). The "Disaster Nursing" course program, which was integrated into the nursing curriculum by the researchers, is shown in Table 1. Due to the complexity of today's disasters, skilled health professionals who can work at all stages of the disaster's course are needed (Erdoğan, 2018). The purpose of this study was to answer the question, "Does the disaster nursing course influence nursing students' disaster awareness, readiness, and response self-efficacy?"

Research hypotheses:

- H1: There is a difference between students' post-test scores on the disaster awareness perceptions scale and its sub-dimensions and their pre-test scores.
- H2: There is a difference between students' post-test scores on the disaster preparedness scale and its sub-dimensions and their pre-test scores.
- H3: There is a difference between students' post-test scores on the disaster response self-efficacy scale and its sub-dimensions and their pre-test scores.

Table 1. The content of the disaster nursing course

| Weeks | The content |
|-------|---|
| 1 | Introduction, informing about the study, receiving an informed voluntary consent form and applying a pretest questionnaire. Epidemiology of Disasters and Definition of Related Concepts |
| 2 | -The importance of mitigation in disasters -Definition of disaster management and disaster-related concepts -International and national organizations in disasters -Disaster risk and loss management |
| 3 | -Definition and importance of disaster preparedness, reduction of disaster risk |
| 4 | - Roles and responsibilities of nurses in disasters -Hospital disaster plan |
| 5 | Vulnerable groups and nursing approaches in disasters |
| 6 | Effects of disasters on health |
| 7 | Reproductive health services in disasters |
| 8 | Chemical, biological, radiological, nuclear (CBRN) agents and triage |
| 9 | -Definition and importance of disaster triage, roles of nurses in disaster triage |
| 10 | First aid in disasters |
| 11 | Basic life support in disasters |
| 12 | Basic life support and basic first aid applications in disasters |
| 13 | -Disaster recovery practices (Immunization services in the disaster area; Food safety and surveillance and notification of diseases) |
| 14 | - Medical and nursing care of individuals with physical and psychosocial needs in diseases, disabilities and injuries caused by disasters. -Evaluating disaster nursing course applying posttest questionnaire |

2. MATERIAL AND METHOD

2.1 Research Methodology and Subjects

This study looked at how the disaster nursing course affected nursing students' perceptions of their ability to be prepared for, recognize, and respond to disasters. A quasi-experimental design with one group, pre-test, and post-test was used. At the fall semester of the academic year 2021–2022, the study was conducted in the Nursing Department of the Health Sciences Faculty at X University. Senior students made up the research's target audience (n:60). No sampling method was used; rather, the study included all students who chose to take part and filled out the questionnaires entirely (Figure 1). The criteria for inclusion were enrollment in the disaster nursing course, regular attendance at meetings, and voluntary participation in the study. The study excluded participants with any form of cognitive, mental, or physical disability that interfered with communication, as well as individuals with employment history, a diploma, or a certificate in the subject of disaster.

The power of the study was calculated on the “G-Power-3.1.9.2” software. As a result of the analysis (n: 43), the effect size was found to be 1.0868, at the $\alpha=0.05$ level. It was also calculated to be 0.99 as post-hoc. The minimum acceptable power value that should be obtained in post-hoc analysis is 0.67. Therefore, the power of the study was at an acceptable level.

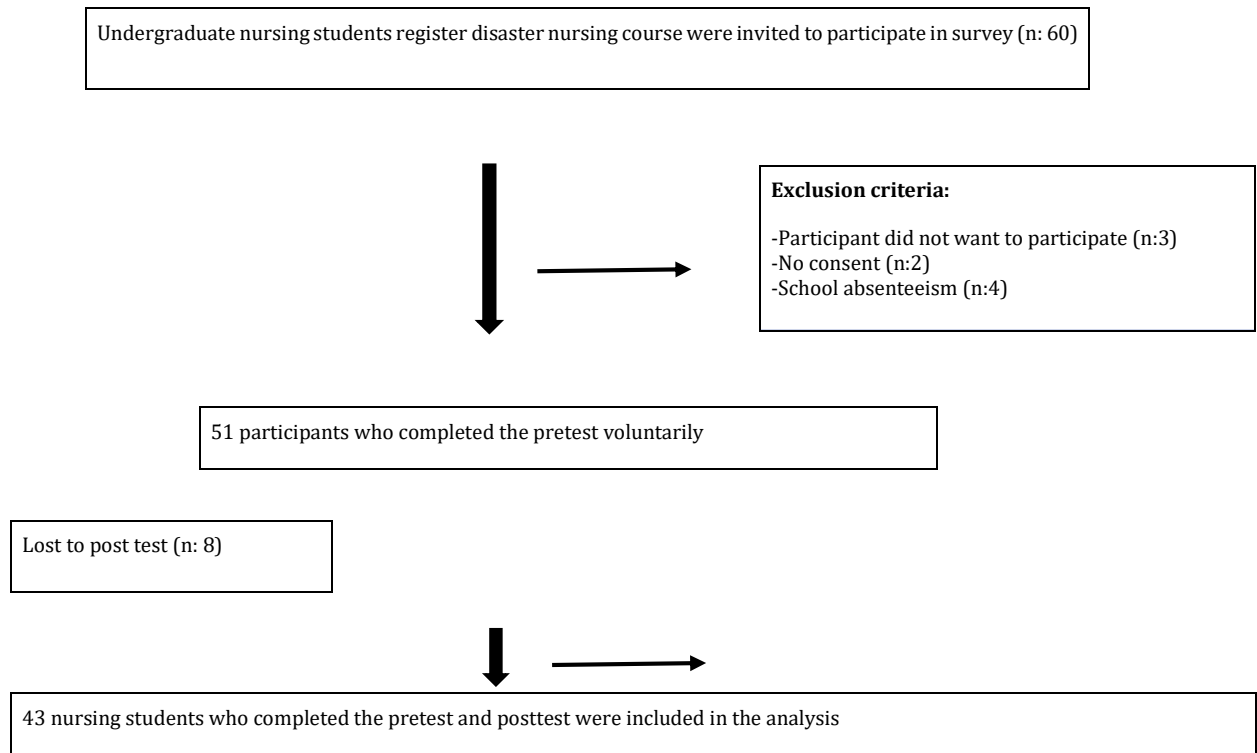


Figure 1. Flow chart of subjects' enrollment

2.2. Instruments and Data Acquisition

2.2.1 Personal Information Form

Researchers produced this form in accordance with the literature (Kalanlar, 2018; Koca, 2020; Özpulat, 2018). It has some questions about age, gender, having experienced a real disaster, having cared for a real disaster victim, knowing the existence of disaster plans in the place of residence, reading these disaster plans, needing education on disaster management, participating in disaster risk reduction activities/exercises, preparing for disasters or volunteering to help respond, accessing information to prepare for a disaster, and source of information.

2.2.2. The Disaster Awareness Scale

This scale was developed by Dikmenli, Yakar, and Konca (Dikmenli, 2018). It has 36 items and 4 sub-factors. It is scored on a five-point Likert scale between 1 and 5 with options, namely (1) "strongly disagree," (2) "disagree," (3) "undecided," (4) "agree," and (5) "strongly agree". The items on the scale are divided into four sub-dimensions about the perception of disaster awareness: "awareness of disaster education" (13 items), "pre-disaster awareness" (8 items), "incorrect awareness of disaster" (8 items), and "post-disaster awareness" (7 items). There are 27 positive and 9 negative items on the scale. The scores that can be obtained from the scale range between 36 and 180. A high score is interpreted as a high perception of disaster awareness. Cronbach's alpha reliability coefficients of the original scale were found as .72 for the total scale, .75 for the awareness of disaster education, .76 for pre-disaster awareness, .69 for incorrect awareness of disaster, and .67 for post-disaster awareness (Dikmenli, 2018). In this study, Cronbach's Alpha reliability coefficients were found as 0.91, .75, .82, .93, and .86 for the total scale and sub-dimensions, respectively.

2.2.3. The Disaster Preparedness Scale

This scale was developed by Şentuna and Çakır (2020) to evaluate the preparedness of individuals for disasters in general (Şentuna, 2020). It includes 13 items and four sub-dimensions, namely Disaster Physical Protection (DFP), Disaster Planning (DP), Disaster Relief (DR), and Disaster Warning and Signals (DWS). Each item on the scale is scored on a 4-point Likert-type scale with one of the following options: (1) "absolutely no"; (2) "no"; (3) "yes"; (4) "absolutely yes". A high score on the scale is interpreted as 'high' disaster preparedness. Cronbach's Alpha internal consistency coefficient of the Turkish scale was reported as .82 (Şentuna, 2020), and the alpha value was found to be .92 in this study.

2.2.4. The Disaster Response Self-Efficacy Scale (DRSES)

The original form of the scale was developed by Li et al. (2017). It has 19 items and 3 sub-dimensions. Each item on the scale is scored on a five-point Likert-type scale by using one of the following options: 1: "no confidence at all"; 2: "basically, no confidence"; 3: "little confidence"; 4: "basically confident"; 5: "complete confidence". High scores obtained from the scale indicate that disaster response self-efficacy is high (Li, 2017). Cronbach's alpha value for the overall original scale was .91. Cronbach's alpha values for the three dimensions of the scale were reported as 0.893 for the on-site rescue competency sub-dimension, .86 for the disaster psychological nursing competency sub-dimension, and .83 for the disaster role quality and adaptation competency sub-dimension. Koca et al. (2020) carried out validity and reliability tests on the scale's Turkish translation (Koca, 2020). The content validity index for the DRSES is .99. Cronbach's alpha coefficient of the total scale was found as .96, and it was found as .93 for the three sub-dimensions. The item-total correlation was reported to be positive and high (Koca, 2020). In this study, Cronbach's Alpha value was found as .95.

2.2.5. Data Collection

Research data were collected in the first week of the course before initiating the lessons and after the 14-week education when the course ended. It took an average of 15-20 minutes to fill out the forms.

2.2.6. Interventions

In this study, the course material was developed using the Jennings Disaster Nursing Management Model, the General Directorate of Emergency Health Services' First Aid Training Guidelines, and the International Council of Nurses' framework of disaster nursing competences. (ICN, 2019; Jennings-Sanders, 2004; URL 1, 2021). In this study, the "Disaster Nursing" course, which was integrated into the nursing curriculum, was an elective course, and it was carried out as a theoretical and practical course for two hours a week. The topics in the content of this course regarding prevention, preparedness, response and recovery stages were designed in line with Jennings Disaster Nursing Management Model. This model was specifically made for nursing students. It outlines the responsibilities of nurses for every stage of disaster management. In this way, the concept is unique from existing disaster management methods. The purpose of its development was to educate students on disaster management and disaster nursing (Jennings-Sanders, 2004). The course content included identification of risks and resources for disasters at the primary protection level, nurse's caregiver (triage and holistic care) and case manager role at the secondary protection level, reassessment of individuals' care needs at the tertiary level, and review of education and the current disaster plan at the protection level. Disaster nursing course was intended to develop students' perception of disaster awareness, preparedness, and response self-efficacy by providing them with primary, secondary, and tertiary level protection roles (Table 1).

Following the theoretical content, practices such as first aid, basic life support, triage, disaster/earthquake bag preparation, earthquake drill, CBRN dressing and undressing were

carried out. Within the scope of the practices of the course, nursing students made some individual practices such as reading the disaster plans of the hospitals where they did their internship, creating a family disaster plan and getting earthquake insurance.

2.3. Data Analysis

Study data were analyzed on the SPSS (Statistical Package for Social Sciences) for Windows 25.0 software package. A "Reliability Analysis" was conducted to test the reliability of the scales used in the study. Descriptive statistical methods were used during the evaluation of the data (numbers, percentages, mean scores, standard deviation values). The appropriateness of the data for normal distribution was tested. The normality of data can be examined with the Q-Q plot (Chan, 2003). In addition, the normal distribution of the data used depends on whether the skewness and kurtosis values are between ± 3 (Shao, 2002). As outliers increase the value of error variance, they also affect the power of statistical tests. For this reason, before statistical tests, the data sets were tested for outliers. Parametric tests were used in statistical evaluations for data with normal distribution. Paired t-test was employed for the difference between the two dependent stages in the comparison of the quantitative data that had a normal distribution.

2.4. Consideration of Ethics

The study was approved by the Ethics Committee of X University (decision no: 2021/10/2) before the data collection. The research was conducted in accordance with the principles of the Declaration of Helsinki. Students participated in the study without worries about academic scoring for the course that they took. From an ethical point of view, students were informed that they could leave the study whenever they wanted and that their data would be kept confidential. Furthermore, each respondent and participant gave their free, informed consent. In order to safeguard the respondents' anonymity during data collection, identifiers and names were swapped out for distinct codes. Participation in the study was entirely voluntary. The authors granted the necessary permits for the scales used in the study.

3. RESULTS

3.1. Characteristics Related to Demographics and Disaster Preparedness

In this study 53.5% of the participants were between the ages of 22 and 23, and 76.7% of them were female, 55.8% had a real disaster experience, and 97.7% had not had to care for a real disaster victim. It was determined that 88.4% of the participants paid attention to the disaster management information in their environment and that 62.8% of them had participated in disaster exercises before. In addition, 93% of the participants stated that they needed education on disasters, and 69.8% stated that they knew how to access information to prepare for disasters. Information sources of the participants about before-, while-, and after-disaster stages were the Internet (69.8%), social media (14%), television/radio (11.6%), and other (4.6%). Also, 93% of the participants stated that they were not willing to prepare or respond to disasters (Table 2).

3.2. Comparison of Pre-test and Post-test Scores Obtained from the Scales

On the pre-disaster awareness dimension, post-disaster awareness dimension, and perception of disaster awareness scale, it was shown that there was statistically significant difference between participants' pre-test and post-test scores ($p < 0.05$). Participants' post-test scores on the pre-disaster awareness dimension, post-disaster awareness dimension, and the perception of disaster awareness scale were higher than their pre-test scores.

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Table 2. Distribution of the Participants According to Their Socio-Demographic and Disaster Preparedness Characteristics

| Variables | | n | % |
|--|------------------|----|-------|
| Age ($\bar{X} \pm SD, 21.60 \pm 0.82$) | 20-21 | 20 | 46.5 |
| | 22-23 | 23 | 53.5 |
| Gender | Female | 33 | 76.7 |
| | Male | 10 | 23.3 |
| Status of experiencing a real disaster | Yes | 24 | 55.8 |
| | No | 19 | 44.2 |
| Status of having to care for a real disaster victim | Yes | 1 | 2.3 |
| | No | 42 | 97.7 |
| Knowledge of the existence of a disaster plan in the neighborhood, school, or dormitory | Yes | 9 | 20.9 |
| | No | 3 | 7.0 |
| | No idea | 31 | 72.1 |
| Status of reading the disaster plan of the environment | Yes | 4 | 9.3 |
| | No | 39 | 90.7 |
| Status of paying attention to the information within the scope of disaster management in the environment | Yes | 38 | 88.4 |
| | No | 5 | 11.6 |
| Status of participating in disaster drills before | Yes | 27 | 62.8 |
| | No | 16 | 37.2 |
| Status of thinking that there is a need for education on disasters | Yes | 40 | 93.0 |
| | No | 3 | 7.0 |
| Status of participating in disaster risk reduction activities and exercises | Yes | 13 | 30.2 |
| | No | 30 | 69.8 |
| Status of knowing how to access information to prepare for a disaster | Yes | 30 | 69.8 |
| | No | 13 | 30.2 |
| Source of information before, during, and after a disaster | Social media | 6 | 14.0 |
| | The Internet | 30 | 69.8 |
| | Television/radio | 5 | 11.6 |
| | Other | 2 | 4.6 |
| Status of being prepared or willing to respond to disasters | Yes | 3 | 7.0 |
| | No | 40 | 93.0 |
| Total | | 43 | 100.0 |

A statistically significant difference was found between participants' pre-test and post-test scores on the disaster physical protection, disaster planning, and disaster warning and signals sub-dimensions and the total disaster preparedness scale ($p<0.05$). Participants' post-test scores on the disaster physical protection, disaster planning, and disaster warning and signals sub-dimensions and the total disaster preparedness scale were higher than their pre-test scores (Table 3).

On the on-site rescue competency sub-dimension, the disaster psychological nursing competency sub-dimension, the disaster role quality and adaptation competency sub-dimension, and the overall disaster response self-efficacy scale, there was a statistically significant difference between the participants' pre-test and post-test scores ($p<0.05$).

Table 3. Comparison of The Pretest and Posttest Scores on The Total Scales and Their Sub-Dimensions Used in the Study

| Scales and sub-dimensions | Pretest | Posttest | Paired t value | p |
|---|-----------------|-----------------|----------------|---------------|
| | $\bar{x}\pm SD$ | $\bar{x}\pm SD$ | | |
| Awareness of disaster education sub-dimension | 56.23±5.09 | 57.09±4.96 | -0.912 | 0.367 |
| Pre-disaster awareness sub-dimension | 33.86±3.50 | 35.67±3.19 | -3.517 | 0.001* |
| Incorrect disaster awareness sub-dimension | 34.41±5.38 | 33.32±7.91 | 1.072 | 0.290 |
| Post-disaster awareness sub-dimension | 24.23±3.86 | 28.67±3.77 | -6.955 | 0.000* |
| Perception of disaster awareness scale | 148.74±13.30 | 154.76±15.15 | -2.862 | 0.007* |
| Disaster physical protection sub-dimension | 11.41±2.14 | 13.20±2.81 | -5.189 | 0.000* |
| Disaster planning sub-dimension | 6.74±2.01 | 8.11±2.11 | -5.194 | 0.000* |
| Disaster relief sub-dimension | 8.58±1.46 | 8.90±1.65 | -1.256 | 0.215 |
| Disaster warning and signals sub-dimension | 4.30±1.01 | 5.06±1.31 | -3.800 | 0.000* |
| Disaster Readiness Scale | 31.04±4.94 | 35.30±7.11 | -5.930 | 0.000* |
| On-site rescue competency sub-dimension | 34.51±7.48 | 43.00±7.43 | -7.071 | 0.000* |
| Disaster psychological nursing competency sub-dimension | 13.11±2.78 | 15.60±2.82 | -5.107 | 0.000* |
| Disaster role quality and adaptation competency sub-dimension | 15.48±3.21 | 17.27±2.57 | -3.308 | 0.002* |
| Disaster Response Self-Efficacy Scale | 63.11±11.73 | 75.88±11.77 | -6.420 | 0.000* |

* $p<0.05$

4. DISCUSSION

Nurses are the health professionals who first interact with people who are affected by disasters. The success of this interaction depends on the outcome of the process that is affected by the nurse's disaster management knowledge and skills (Wang, 2020). It is also well known that it is not always possible to reach appropriate in-service education opportunities after graduation for nurses to prepare for the realities of disasters (Ranse, 2022). In this research, the effect of the

disaster nursing course offered in the undergraduate program on students' perception of disaster awareness, preparedness, and response self-efficacy was investigated.

4.1. Characteristics Related to Demographics and Preparing for Disaster

According to the International Council of Nurses' (ICN) definition of a "disaster nurse," there are three steps to nurse competency in disasters. The first one focuses on the pre-event period, which ensures that nurses have enough knowledge, skills, and abilities to identify risks, design appropriate disaster recovery plans, and prepare before a disaster occurs. Secondly, during the disaster phase, nurses should skillfully provide comprehensive physical and psychological care for the person, household, and community, as well as groups including children and the elderly. Completely, nurses are crucial to the rehabilitation and rebuilding process following a tragedy. According to ICN, nurses should possess the necessary knowledge and abilities to offer care for the afflicted person, household, and community both immediately and over time (ICN, 2019). In this research, greater than half of the participants reported that they had a real disaster experience, while nearly one-third of them stated that they did not know about the existence of a disaster plan for their environment, school, dormitory, etc. Similarly, it was reported that 29.9% of the participants had experienced a real disaster and that 76.9% did not know about the existence of a disaster plan for their environment (Koca, 2020). The first information source of the participants was internet. The information sources of the students in our study were like those of the study conducted by Ogunleye (Ogunleye, 2019). Nearly 91% of the participants acknowledged they hadn't ever read any disaster policies. In another study, they did not know about an emergency plan being in place, they didn't read the plan (Koca, 2020). Also, in others study reported that most of participants did not have disaster kit preparation (Ünver, 2018). It has been determined that the study's findings are compatible with the literature. It was shown that disaster education had a great impact on student success and the permanence of their knowledge (Koçak, 2019). School exercises are an opportunity to educate students in groups (Ogunleye,2019). For this reason, the goal should be to achieve the permanence of the education given and preparatory exercises, to ensure the accessibility of disaster plans in the institution, and to raise awareness of the recognition of responsibilities/responsible persons in the event of a disaster.

4.2. Comparison of The Scales' and Their Dimensions' Pre- and Post-Test Results

Although studies on the effects of including disaster nursing education in undergraduate education have not yet reached the desired level, it is stated in the literature that nurses' knowledge of disaster management is insufficient, and that education will increase the competency in responding to disasters. (Koca, 2020). Disaster management education programs for nursing students in the United States, Ireland, and Finland are an important part of the disaster management system. There are successful applications, nurses have some legal and institutional rights, and their roles and functions are continuously developed (Kalanlar, 2018; Patwani, 2020). In this study, students' posttest scores on the pre-disaster awareness dimension, post-disaster awareness dimension, and the perception of disaster awareness scale increased significantly matched to their pretest scores. In the study a significant increase was observed in the level of participants' perceptions of disaster awareness before and after the education (Kalanlar, 2018). In another study, the disaster preparedness perceptions of nursing students were found increase after education (Koca, 2020).

According to reports, providing education to raise disaster awareness results in less adverse health outcomes after a disaster, including physical injuries, disease outbreaks, and psychological consequences (ICN, 2019). Identifying and mitigating risks is not just the responsibility of a government or emergency responders. Schools, teachers, local administrators should be conscious and active, as well. Our findings revealed an increase in disaster awareness after education. Disaster awareness should be raised not only in students studying health sciences, but

also in students studying geoscience, meteorology, forestry, engineering, architecture, and business (Ogunleye,2019). Disaster management consists of not only the provision of health services but also other components including many occupational areas, such as demolishing buildings, controlling fires, organizing communication with the public and administrations, creating risk plans, evacuating people from risky areas.

In this study, after the disaster nursing course given in line with the Jennings Disaster Nursing Management Model, there was a significant increase in nursing students' disaster preparedness scores. This finding was like those of studies in which education programs were observed to increase the disaster preparedness competency of nursing students in response groups (Kılıç, 2019; Koca, 2020). The other study found that after taking a nursing course, the experimental group's students' level of readiness for disasters considerably increased. Similar education programs in the literature have positively affected nurses' disaster preparedness (Koca, 2020; Mirzaei, 2020). The key to enhancing disaster preparedness habits is comprehending how well university students are prepared for disasters and what elements can boost their preparedness (Kalanlar, 2018). According to this study, disaster education helps kids become more prepared for emergencies. In order to comprehensively educate students in disaster management, it is essential to implement high-quality, competency-based education and training programs, which must be evidence-based and centered around competencies, in preparation for the complete spectrum of disaster management, as emphasized by Comighud (2020). For students to be prepared to perform the applications in disaster education, it is thought that using models that include realistic scenarios, simulations, and field exercises or that concentrate on the practical development of information infrastructure and some site-specific application examples, such as the Hub and Spoke, would be advantageous (Thomas, 2016).

According to certain studies in the literature, student nurses lack the information and abilities necessary to respond to disasters. Disaster management education will help them by enhancing their knowledge, skills, and beliefs (Goddard, 2018; Grimes, 2020). In this study, the disaster response self-efficacy of nursing students increased significantly at the end of the education. Similar to this, in randomized controlled trials, the experimental group students' self-efficacy in disaster triage and disaster response increased following nursing education (Huh, 2019). Nurses should have enough education, knowledge, and experience to react to disasters (Wang, 2020). In a study conducted with working nurses, it was emphasized that nurses acquired the necessary knowledge and skills to prepare for and respond to disasters thanks to the education that was given to them (Jang, 2021). It was shown that education on disaster learning, and talents increased nurses' self-confidence and affected their willingness to take part in disaster response positively (Bülbül, 2021).

4.3. Limitations of the Research

One of the biggest limitations of our study was the lack of a standard disaster course module in terms of content and methodology in undergraduate education. For this reason, the content and credits of the course were created by the researchers in accordance with European standards and the framework of the Turkish National Core Education Program for Nursing, like other nursing courses. The outcomes of the research were based on the data obtained from the students at a single state university. Therefore, they cannot be generalized to all nursing students in the country. Another limitation of this study is that post-disaster nursing follow-up was not performed (e.g. 1st month, 3rd month, 6th month). The content of the education involved topics related to the pandemic in disaster nursing, it, therefore, addressed a current problem, and the study had a quasi-experimental design, all of which were evaluated as the strengths of the study.

5. CONCLUSION AND RECOMMENDATIONS

Even though more than 50% of participants stated that they had a real disaster experience, about one-third of them stated they were unaware that there was a disaster plan in place that environment, school, or dormitory. Disaster attitudes among students' awareness, preparedness, and response self-efficacy were found to increase after the course.

Disaster nursing education can be integrated into the undergraduate nursing curriculum at the national level. Thus, disaster nursing course content can be presented at a valid and reliable level. Taking the nursing department as an example, the course can be planned as a solution that can increase the interest in education in all undergraduate programs by establishing the relationship of all professional fields with the topic in question (such as engineering). Based on the findings of this study, qualitative, randomized controlled studies in various sample populations in various national geographic areas can be designed. To enhance nursing students' and nurses' preparedness for catastrophes, disaster simulation can be incorporated into disaster nursing education.

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