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# Assessment of Disaster Management Competency and Response Self-Competency of Nurses

Hemşirelerin Afet Yönetim Yetkinliği ve Müdahale Öz-Yeterliliğinin Değerlendirilmesi

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## ABSTRACT

This study aims to determine nurses' disaster management competence and intervention self-efficacy levels, evaluate them as independent variables, and examine the relationship between the scales. This is a descriptive cross-sectional study. The study was completed with 184 nurses who agreed to participate voluntarily. The data were collected in the hospitals where the study was collected using competencies in disaster nursing management and disaster response self-efficacy scales. Data analysis was performed using various statistical methods, including Student t-test, ANOVA, Tukey post hoc test, Chai square analysis, Pearson Correlation analysis and Binary Logistic Regression analysis. The mean score of the competencies in the disaster nursing management scale was 315.95±61.74, and the mean score of the disaster response self-efficacy scale was 68.11±12.42. There was a positive relationship between disaster management competence and intervention self-efficacy. Government hospital and bachelor's degree were found to be determinants of disaster management competence. Providing care to the disaster victim was found to be a determinant of disaster response self-efficacy. The study's results reveal the competencies and self-efficacy of nurses required for effective and quality disaster management and response. It also provides a conceptual framework by summarising the relationship between disaster management competence and response self-efficacy and the factors affecting them. It shows the importance of education level, disaster caregiving and institutional diversity in disaster management.

**Keywords:** Disaster, Disaster management, Nurse, Self-efficacy

## ÖZ

Bu çalışmanın amacı hemşirelerin afet yönetim yetkinlik ve müdahale öz-yeterlilik düzeylerini belirlemek, bağımsız değişkenler açısından değerlendirmek ve ölçekler arasındaki ilişkiyi incelemektir. Tanımlayıcı kesitsel araştırmadır. Çalışma gönüllü olarak katılmayı kabul eden 184 hemşire ile tamamlandı. Veriler, afet hemşireliği yönetiminde yetkinlikler ve afet müdahale öz-yeterlilik ölçekleri ile toplandı. Verilerin analizinde Student t testi, ANOVA, Chai squar analizi, Tukey post hoc testi, Pearson Korelasyon analizi, Binary Lojistik Regresyon analizi kullanıldı. Afet hemşireliği yönetiminde yetkinlikler ölçeği puan ortalaması 315,95±61,74 ve afete müdahale öz-yeterlilik ölçeği puan ortalaması 68,11±12,42 saptandı. Afet yönetim yetkinliği ile müdahale öz-yeterliği arasında pozitif yönlü ilişki belirlendi. Eğitim araştırma hastanesinde çalışmanın afet yönetim yetkinliğinin belirleyicisi olduğu belirlendi. Afetzedeye bakım vermenin afet müdahale öz-yeterliliğinin belirleyicisi olduğu saptandı. Araştırma sonuçları hemşirelerin etkili ve kaliteli afet yönetimi ve müdahalesi için gerekli olan yetkinliklerini ve özyeterliliklerini ortaya koymaktadır. Aynızamanda afet yönetim yetkinliği ve müdahale öz yeterliliği arasındaki ilişkiyi ve etki eden faktörleri özetleyerek kavramsal bir çerçeve sunmaktadır. Afet yönetiminde eğitim düzeyi, afetzedeye bakım verme ve kurumsal farklılığın önemini göstermektedir.

**Anahtar Kelimeler:** Afet, Afet yönetimi, Hemşire, Öz yeterlilik

**Highlights**
*There is a positive relationship between disaster management competence and disaster response self-efficacy.
*Educational level and the type of healthcare institution in which one is employed are significant determinants of disaster management competence.
*Experience in providing care to disaster victims enhances disaster response self-efficacy.

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## INTRODUCTION

Nurses represent the largest healthcare providers globally and play a key role in disaster management.[1,2] Nurses have essential duties and responsibilities in disaster management. These are Participating in the preparation of a disaster plan to minimise disaster risks in the preparation phase before the disaster, determining the risks and identifying the needs that may occur in the society against disasters; participating in rescue activities, first aid and emergency interventions, medical care and general health care to reduce the number of dead and disabled in the society by timely and effective intervention during the disaste; They have essential duties and responsibilities in providing holistic care such as enabling individuals with disabilities to live independently, making the social and work environment suitable and providing psychological support to return the damaged society to normal as soon as possible in the rehabilitation (rehabilitation) stages after the disaster.[3] Nurses should have high disaster management competence and intervention self-efficacy to be ready for every stage of the disaster and to provide practical, high quality and rapid intervention at these stages. High intervention competence of nurses in disaster management and their belief in these competencies are critical in reducing disaster-related health risks, mortality and morbidity rates and strengthening the resilience of communities and health systems as a whole.[4,5] Nurses taking part in the disaster should have high competence and self-efficacy to diagnose these health risks and provide appropriate and quality interventions against these risks.

### Nurses' Competence in Disaster Management

Nursing competence encompasses nurses' knowledge, skills, attitudes, judgment, and abilities to fulfil their duties and effectively provide quality care.[6] The literature emphasises that nurses must improve their competency levels for professional nursing care.[7,8]

Nurses face unusual situations and special conditions, such as thousands of dead and injured, many destroyed buildings and limited resources.[9] Nurses need to have high disaster management competence under these difficult conditions of disasters to provide quality care and psychological support to people affected by disasters by using the necessary knowledge and skills systematically to reduce death and complications after the disaster and to increase the trust of society in nurses.[10,11] The International Council of Nurses (ICN) emphasises that all nurses must achieve disaster nursing competence regardless of speciality.[12] However, the literature emphasises that nurses and nursing students are not ready for disasters and that there are gaps to be filled in disaster preparedness and essential competencies, and that existing competencies should be improved.[13-15] At the same time, studies report that nurses experience difficulties in the disaster area due to inadequacies in disaster preparedness and disaster education, disaster-specific ethical and legal dilemmas, ambiguities in roles, lack of coordination in the disaster, difficult living conditions, coping with the new situation and lack of experience in caring for disaster victims.[16,17] The fact that nurses do not have the necessary competence and preparedness in disaster management can increase the negative consequences of disasters.[18] Increasing disaster management competencies is critical for nurses to feel ready for disasters and to cope effectively with their challenges. ICN has identified eight competencies nurses should have to address deficiencies in disaster nursing. These areas are: preparedness and planning (preparedness for actions in disasters and actions taken outside the emergency situation), communication (communicating key information, documenting actions taken and decisions made in one's emergency role), incident management (the structure of disaster/emergency responses required by countries/organizations/institutions and actions to make them effective), safety and security (preventing nurses, colleagues and

patients from being burdened by unsafe practices), assessment (collecting data about patients/families/communities on which to base subsequent nursing actions), intervention (clinical or other actions taken in response to the assessment of patients/families/communities as part of the incident management of the disaster), recovery (any steps taken to facilitate the individual/family/community/organization to resume or improve functioning to a higher level prior to the event), and law and ethics (the legal and ethical framework for disaster/emergency nursing).[12,19]

In light of the information in the literature, considering the need for nursing interventions in disasters and the importance of having sufficient competence to meet these needs, the importance and necessity of evaluating the disaster management competence of nurses cannot be denied. However, although there are studies assessing the competence of nurses and nursing students in disaster intervention in the international literature, there are minimal studies in Turkey.[20-23] Since effective nursing care in disaster management can only be provided by a competent nurse, measuring competencies well and overcoming the identified deficiencies is essential. For these reasons, this study's findings are significant in determining nurses' competency levels in Turkey and raising awareness. In addition, the findings of this study show that disaster management competency should be included in the training while providing training to nurses on disaster-related issues to give direction to future studies.

Another critical point in disaster management is nurses' beliefs in these competencies and their competencies. Skills and sufficient self-efficacy are necessary to manage a situation effectively.[24]

### Nurses' Disaster Response Self-Efficacy

Self-efficacy refers to beliefs about one's ability to motivate oneself to achieve goals, mobilise cognitive resources, and plan the behaviours necessary to gain control over events.[24,25] It is confidence in one's ability to succeed in a particular subject or task.[25]

Disaster response self-efficacy is vital for nurses to be ready for disaster, respond appropriately and intervene effectively in any disaster management.[26] Because performing certain behaviours in disaster management is determined by beliefs in personal abilities.[26] As the self-efficacy perception of nurses increases, their behaviour, performance and motivation in disasters increase.[27] At the same time, nurses have higher competence in solving problems, make more effort to solve the problem, and adapt better to new environments, better withstand difficult conditions that cause stress, and cope with stress more effectively.[28-30] On the contrary, low self-efficacy beliefs of nurses in case of disaster cause avoidance of activities, fear and postponement of performing their duties, and giving up quickly.[25,27] The literature emphasises that nurses are unprepared for disasters and do not fully trust themselves to respond to disaster situations.[18] As a result, a high level of disaster response self-efficacy reduces the negative impact of disasters and increases the success of disaster response measures.[26] For these reasons, it is vital to determine and strengthen nurses' disaster response self-efficacy levels.[28]

In summary, as the number of disasters continues to increase and given the limited studies on nurses' disaster management competence and response self-efficacy, it is essential to conduct more studies to address this gap. Based on the available evidence, this study aimed to assess nurses' disaster management competence and intervention self-efficacy, which are necessary to cope with disasters, manage crises effectively, assess disaster victims, identify nursing problems, intervene appropriately, and provide professional nursing care. It also aimed to determine the influential factors and investigate their relationship.

### Research questions

- What is the level of competence of nurses in disaster management?
- What is the level of disaster response self-efficacy of nurses?

- What independent variables affect nurses' level of competence in disaster management?
- What are the independent variables affecting nurses' disaster response self-efficacy levels?
- Is there a relationship between nurses' competency levels in disaster management and disaster response self-efficacy levels?

## MATERIAL AND METHODS

### Design, Population and Sample of the Study

This study aimed to determine nurses' disaster management competence and response self-efficacy levels, evaluate them as independent variables, and examine the relationship between the scales. It is a descriptive cross-sectional study. The study was conducted with nurses working in two government hospitals located in a province of Turkey that was not directly affected by the February 6, 2023 earthquakes. To collect the data for this study, the Provincial Directorate of Health permitted the study to be conducted between 20.03.2023 and 29.06.2023. Data were collected over 15 days in April. The data collection process took two weeks because nurses worked in institutions with shift or on-call systems within the shift system. The study population comprised 650 nurses in education and research hospitals (398 people) and state government hospitals (252 people). All nurses were invited to the study. At the beginning of the survey, an explanatory text about informed consent was presented to the participants, and those who gave consent were asked to continue the study.

The frequency of the scales in the literature could not be reached to calculate the sample size. Therefore, to determine the frequency of occurrence of the event in sample selection, the frequency of occurrence of the event was accepted as 80% by taking into account the rates of caring for disaster victims (90.4%), participating in disaster drills (88.6%), and the desire to receive training on the roles of nurses in disaster situations (84%), which are effective on the disaster management competence and disaster response self-efficacy of nurses.[13,33,34] When the incidence of the event was taken as 80%, the sample size for the study was calculated as 179 for p:0.80, t:0.05, d:0.05. The calculation process was performed using the Raosoft Sample Size Calculator Program. The study was completed with 184 nurses who agreed to participate voluntarily.

### Data Collection Tools

Data were collected using the "Personal Information form," "Competencies in Disaster Nursing Management scale," and "Disaster Response Self-efficacy Scale." Participation in the survey was voluntary and anonymous.

Personal information form: This form was prepared by the researchers and consisted of questions about the socio-demographic (age, gender, marital status, educational status, etc.) and disaster-related characteristics of the nurses (receiving disaster-related training, caring for disaster victims, having information about the disaster plan, etc.).

Competencies for Disaster Nursing Management Questionnaire (CDNMQ): This scale was developed by Al Thobaity et al. in 2016 to measure the competencies of nurses in disaster management.[35] The validity and reliability of the Turkish form of the scale were conducted by Durgut and Yıldız in 2022. The scale consists of 43 items and three sub-dimensions. The sub-dimensions comprised of roles and responsibilities of nurses in disaster management (5 items), core competencies of nurses in disaster management (30 items) and barriers encountered in developing essential competencies (8 items). The scale is a 10-point Likert type. The first and second sections are scored as never (1 point), very often (10 points), and the third section is

scored as strongly disagree (1 point) and strongly agree (10 points). The scale score is calculated by summing the answers given to the questions. The lowest score obtained from the scale is 43, and the highest score is 430. A high score on the scale indicates a high level of disaster management competence. In assessing competency levels, the midpoints of both the total scale score and the subdimension scores were used as reference points. Participants whose total or subdimension scores exceeded the midpoint were classified as having 'above-average' competency, whereas those with scores below the midpoint were classified as having 'below-average' competency. Cronbach's alpha values of the scale were 0.88 for the sub-dimension of "roles and responsibilities of nurses in disaster management", 0.98 for the sub-dimension of "core competencies of nurses in disaster management", 0.91 for the sub-dimension of " barriers encountered in developing basic competencies" and 0.96 for the total score.[36] In this study, Cronbach's alpha values of the scale were 0.88 for the sub-dimension "Roles and responsibilities of nurses in disaster management", 0.99 for the sub-dimension "core competencies of nurses in disaster management", 0.96 for the sub-dimension "Barriers encountered in developing basic competencies" and 0.96 for the total score.

Disaster Response Self-Efficacy Scale (DRSES): This scale was developed by Li et al. in 2017 to assess the disaster response self-efficacy of nurses.[37] The validity and reliability of the Turkish version of the scale were conducted by Koca et al. in 2018.[38] The scale consists of 19 items and three sub-dimensions. The sub-dimensions consist of on-site rescue competency (11 items), psychological nursing competence in disaster (4 items), disaster role quality and adaptation competence (4 items). The items on the scale are 5-point Likert type. The scale is scored as no self-efficacy (1 point) and complete self-efficacy (5 points). The scale score is calculated by summing the answers given to the questions. The lowest total score is 19, and the highest score is 95. A high score on the scale indicates a high level of disaster response self-efficacy. In assessing self-competency levels, the midpoints of both the total scale score and the subdimension scores were used as reference points. Participants whose total or subdimension scores exceeded the midpoint were classified as having 'above-average' competency, whereas those with scores below the midpoint were classified as having 'below-average' self-competency. The total Cronbach alpha coefficient of the scale was determined to be 0.96. The Cronbach alpha values for the three dimensions were defined as "On-site rescue competency" 0.93, "Psychological nursing competence in disaster" 0.93 and " disaster role quality and adaptation competence" 0.93.[38] In this study, the total Cronbach alpha coefficient of the scale was determined to be 0.94. Cronbach's alpha values for the three dimensions were defined as "On-site rescue competency" 0.90, "Psychological nursing competence in disaster" 0.90 and " Disaster role quality and adaptation competence " 0.88.

Independent variable: Age, gender, marital status, educational status, institution of employment, length of service, training on disaster nursing, place of training on disaster nursing, participation in disaster drills, exposure to natural disasters, losing a relative in a disaster, caring for a disaster victim, knowing that there is a disaster plan in the hospital and reading the disaster plan.

Dependent variable: Competencies for disaster nursing management scale, disaster response self-efficacy scale.

**Statistical Analysis**

The SPSS 22 package program was used for the statistical analysis of the data. For a normal distribution, the skewness and kurtosis coefficient are sufficient to be between "-1 and +1".[39] Descriptive data were expressed as percentage, mean and standard deviation. Student t-test and ANOVA test, Tukey post hoc, and Chi-square test were used for statistical analysis of quantitative data. Pearson Correlation was used to evaluate the relationship between variables. In correlation analysis, 0-0.19 was considered as no relationship, 0.20-0.39 as weak, 0.40-0.69 as moderate, 0.70-0.89 as vital, and 0.90-1.00 as

very strong. The significance value was accepted as $p<0.05$. Binary Logistic Regression analysis was used to analyse the relationship between two variables. In the evaluation of the R2 value showing the effect size in regression analysis, these effect size results obtained according to Cohen (R2): .0196 can be interpreted as small, .1300 as medium, and .2600 as large effect size.[40]

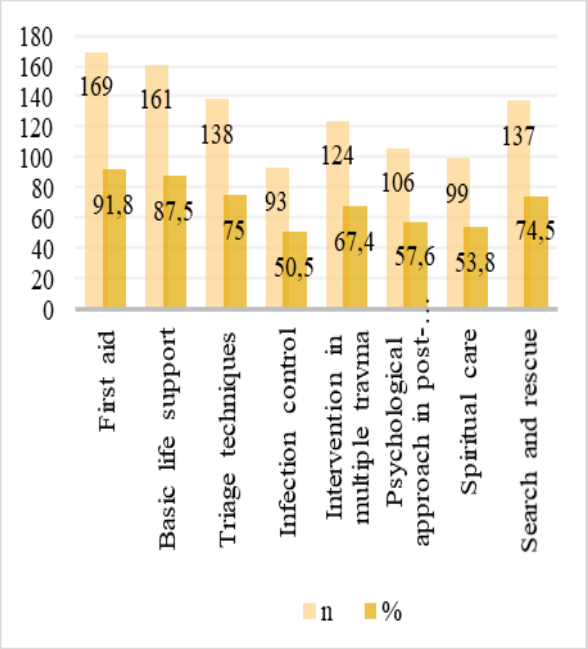
## Ethical Considerations

For the research, permission numbered 2023\071 was obtained from the relevant university's Social and Human Sciences Ethics Committee. In addition, permission for scientific research numbered E-64960800-799-211662394 was obtained from the Provincial Health Directorate of the province where the study would be conducted.

## RESULTS AND DISCUSSION

Among the nurses who participated in the study, 89.7% were female, 57.6% were married, and the mean age was 30.73±7.21 years. Their educational status was 76.1% bachelor's degree, 16.3% high school/pre-license degree, and 7.6% graduate degree. Of the nurses, 58.7% worked in an educational and research hospital centre and 41.3% in a government hospital. 46.7% of the nurses have been working for 1-5 years, 2.9% for more than 11 years, 17.4% for 6-10 years and 6% for less than one year. While 27.7% of the nurses stated that they received training in disaster nursing, 64.7% reported that they received training while working in the institution, and 35.3% reported that they received training at school. The rate of participating in a disaster drill was 19.6%, encountering a natural disaster was 40.2%, and losing a relative in a disaster was 3.8%. Providing care to disaster victims is 32.6%, having a disaster plan in the hospital is 52.7%, and reading this plan is 29.3%. The rate of receiving disaster-related training was 34.3% among nurses in education and research hospitals and 18.4% in state hospitals ($p=0.018$). The rate of participating in disaster-related drills was 28.9% among nurses working in state hospitals and 13% among nurses working in training and research hospitals ($p=0.007$). Descriptive data are shown in Table 1.

**Figure 1. Training subjects that the participants think are helpful for disaster preparedness**




The training subjects that the participants think are useful for disaster preparedness are shown in Figure 1. Nurses believe it would be beneficial to receive training on first aid, with 91.8% at the highest rate, and on infection, with 50.5% at the lowest rate.

**Table 1. Descriptive Data of the Participants**

| Independent Variables | | Frequency (n) | Percent (%) |
|---|---|---|---|
| **Age (χ±sd)** | | | 30.73±7.21 |
| **Gender** | Woman | 165 | 89.7 |
| | Male | 19 | 10.3 |
| **Marital status** | Married | 106 | 57.6 |
| | Single | 78 | 42.4 |

**Tablo 1. Descriptive Data of the Participants (Devamı)**

| Independent Variables | | Frequency (n) | Percent (%) |
|---|---|---|---|
| **Education status** | High school/pre-degree graduate | 30 | 76.1 |
| | Bachelor's degree | 140 | 16.3 |
| | Postgraduate graduate | 14 | 7.6 |
| **Employed Institution** | Educational and research hospital | 108 | 58.7 |
| | Public hospital | 76 | 41.3 |
| **Working time** | Less than 1 year | 11 | 6 |
| | 1-5 years | 86 | 46.7 |
| | 6-10 years | 32 | 17.4 |
| | 11 years and over | 55 | 2.9 |
| **Receiving training on disaster nursing** | Yes | 51 | 27.7 |
| | No | 133 | 72.3 |
| **Place of training** | While working in the organisation | 33 | 64.7 |
| | At school | 18 | 35.3 |
| **Participation in disaster drill** | Yes | 36 | 19.6 |
| | No | 148 | 80.4 |
| **Natural disasters encountered** | Encounter | 74 | 40.2 |
| | Non-encounter | 110 | 59.8 |
| **Loss of a relative in a disaster** | Yes | 7 | 3.8 |
| | No | 177 | 96.2 |
| **Giving care to the disaster victim** | Yes | 60 | 32.6 |
| | No | 124 | 67.4 |
| **Knowing that there is a disaster plan in the hospital** | Yes | 97 | 52.7 |
| | No | 9 | 4.9 |
| | I don't know | 78 | 42.4 |
| **Reading the disaster plan** | Yes | 54 | 29.3 |
| | No | 130 | 70.7 |

The participants' mean scores were 315.95±61.74 and 68.11±12.42 on the CDNMQ and DRSES scales. The mean scores of the participants from the scales are shown in Table 2. The obstacles and problems subdimension of the competencies in disaster management scale was above average, the duties and responsibilities subdimension was below average, and the core competencies subdimension was above average. The on-site rescue subdimension of the disaster response self-efficacy scale was above average, psychological competence in the disaster subdimension was found to be at a medium level, and adaptability and quality of the role undertaken in the disaster subdimension were above average.

**Table 2. Participants Mean Scores on the DRSES Scale and the CDNMQ Scale and Subscales**

| Scales | N | Min | Max | Mean | SD |
|---|---|---|---|---|---|
| **CDNMQ Total** | 184 | 110 | 430 | 315.95 | 61.74 |
| Problems and barriers encountered | 184 | 8 | 80 | 54.55 | 18.07 |
| Duties and responsibilities | 184 | 5 | 50 | 21.59 | 11.32 |
| Core competence | 184 | 30 | 300 | 239.82 | 51.81 |
| **DRSES Total** | 184 | 37 | 95 | 68.11 | 12.44 |
| On-site rescue capability | 184 | 19 | 55 | 38.67 | 7.65 |
| Psychological nursing competence in disaster | 184 | 4 | 20 | 13.46 | 3.61 |
| The nature of the role undertaken and the adequacy of adaptation | 184 | 8 | 20 | 15.98 | 2.89 |

No significant difference was found between the problems and obstacles sub-dimension of the disaster management competency scale and gender, institution of employment, training in disaster nursing, participation in disaster drills, exposure to natural disasters, providing care to disaster victims, level of education and time spent in the profession ($p>0.05$).

No significant difference was found between the sub-dimension of duties and responsibilities and gender, exposure to natural disasters, educational level and time spent in the profession (p >0.05). A significant difference was found between the sub-dimension of duties and responsibilities and the institution of employment. It was significantly higher in those working in education and research hospitals (23.35±11.54) compared to those working in state hospitals (18.91±10.48) (p=0.008). A significant difference was found in the level of training in disaster nursing. Those who received training (27.47±12.24) were significantly higher than those who did not receive training (19.20±10.01) (p<0.001). A significant difference was found with participation in disaster drills. Those who participated in the drill (26.58±9.88) were significantly higher than those who did not (20.26±11.30) (p=0.002). A significant difference was found in caregiving to the disaster victim. It was considerably higher in caregivers (25.46±11.81) than in non-caregivers (19.62±10.58) (p=0.001).

There was no significant difference (p >0.05) between the basic competency sub-dimension and gender, disaster nursing training, disaster drill participation, exposure to natural disasters, caring for disaster victims and time spent in the profession. A significant difference was found between the institutions of employment. It was significantly higher in state hospital employees (250.26±45.34) than in education and research hospital employees (231.83±54.88) (p=0.017). A significant difference was found between education levels. Bachelor's degree (244.13±51.01) was significantly higher than high school\prelicense degree (218.57±52.56) (p=0.049).

No significant difference was found between the in-situ rescue competence sub-dimension of the disaster response self-efficacy scale and gender, employment institution, disaster nursing training, exposure to natural disasters and time spent in the profession (p >0.05). A significant difference was found between participation in disaster drills. Those who participated in disaster drills (41.19±7.99) were significantly higher than those who did not (38.14±7.23) (p=0.03). A significant difference was found in the care given to the disaster victim. It was significantly higher in caregivers (40.90±6.95) than in non-caregivers (37.71±3.43) (p=0.008). A significant difference was found between education levels. Bachelor's degree (39.30±7.60) was significantly higher than a graduate degree (34.07±6.32) (p=0.046).

No significant difference was found between the sub-dimension of psychological nursing competence in disaster and gender, training in disaster nursing, participation in disaster drills, exposure to natural disasters, educational level and length of time spent in the profession (p >0.05). A significant difference was found between the institutions of employment. It was significantly higher in those working in a training and research hospital (14.02±3.74) compared to those working in a state hospital (12.79±3.18) (p=0.021). A significant difference was found in caregiving to the disaster victim. It was significantly higher in caregivers (14.71±3.43) than in non-caregivers (12.94±3.49) (p=0.001).

No significant difference was found between the quality of the role undertaken and the sub-dimension of adaptation competence and gender, institution of employment, training in disaster nursing, participation in disaster drills, exposure to natural disasters, providing care to disaster victims, level of education and time spent in the profession (p >0.05).

The correlation analysis found a moderately significant positive correlation between DRSES and CDNMQ (p<0.001). No significant correlation was found between age and DRSES scale (p=0.370) and between age and CDNMQ (p=0.202) (Table 3).

**Table 3. Correlation Analysis Between Participants' Age, DRSES and CDNMQ Scores**

| | | Age | DRSES | CDNMQ |
|---|---|---|---|---|
| **Age** | r | 1 | 0.066 | -0.095 |
| **DRSES** | r | | 1 | 0.466* |
| **CDNMQ** | r | | | 1 |

r: Pearson Correlation Analysis; * p<0.001

**Table 4. Regression Analysis of CDNMQ with Some Independent Variables**

| Independent Variables | B | *β* | t | *p* | 95% CI for *B* | |
|---|---|---|---|---|---|---|
| | | | | | Lower | Upper |
| (Constant) | 115.230 | | 4.138 | 0.000 | 60.259 | 170.201 |
| Woman | 12.920 | 0.068 | 1.095 | 0.275 | -10.375 | 36.214 |
| License | 31.277 | 0.229 | 3.161 | 0.002 | 11.747 | 50.807 |
| Postgraduate graduate | 28.617 | 0.131 | 1.805 | 0.073 | -2.676 | 59.910 |
| Education research | -17.042 | -0.143 | -2.285 | 0.024 | -31.763 | -2.320 |
| 1-5 years of working time | 11.403 | 0.097 | 0.725 | 0.469 | -19.649 | 42.456 |
| 6-10 years of working time | 18.510 | 0.121 | 1.083 | 0.280 | -15.225 | 52.244 |
| 11 years or more of service | -9.684 | -0.076 | -0.589 | 0.557 | -42.131 | 22.762 |
| Receiving training in disaster nursing | -1.606 | -0.012 | -0.190 | 0.849 | -18.265 | 15.054 |
| Faced with a natural disaster | 10.849 | 0.091 | 1.462 | 0.146 | -3.802 | 25.500 |
| Giving care to the disaster survivor | -5.636 | -0.045 | -0.693 | 0.489 | -21.698 | 10.425 |
| DRSES | 2.445 | 0.515 | 8.135 | 0.000 | 1.851 | 3.038 |

DRSES: Disaster Response Self-Efficacy

The determinants of the scale of competencies in disaster nursing management were evaluated using binary logistic regression analysis. 33.9% of the change in CDNMQ is explained by all independent variables in the model (R2=0.380, F(11.169)=9.402; p<0.001). The CDNMQ score of those with a bachelor's degree is significantly higher than those with a high school/pre-license degree (p=0.002). The CDNMQ score of employees working in education and research hospitals was substantially lower than those working in government hospitals (p<0.024). A one standard deviation increase in the DRSES score will increase the CDNMQ score by 0.52 standard deviations (p<0.001) (Table 4).

**Table 5. Regression Analysis of DRSES with Some Independent Variables**

| Independent Variables | B | *β* | t | *p* | 95% CI for *B* | |
|---|---|---|---|---|---|---|
| | | | | | Lower | Upper |
| (Constant) | 32.010 | | 5.468 | 0.000 | 20.453 | 43.566 |
| Woman | -2.418 | -0.060 | -0.938 | 0.349 | -7.504 | 2.668 |
| Bachelor's degree | -1.244 | -0.043 | -0.565 | 0.573 | -5.593 | 3.105 |
| Postgraduate graduate | -5.842 | -0.126 | -1.685 | 0.094 | -12.686 | 1.001 |
| Education research | 2.369 | 0.095 | 1.449 | 0.149 | -0.858 | 5.595 |
| 1-5 years of working time | 3.036 | 0.123 | 0.885 | 0.377 | -3.733 | 9.805 |
| 6-10 years of working time | 2.532 | 0.078 | 0.677 | 0.499 | -4.852 | 9.916 |
| 11 years or more of service | 6.446 | 0.241 | 1.812 | 0.072 | -0.576 | 13.467 |
| Receiving training in disaster nursing | 0.302 | 0.011 | 0.164 | 0.870 | -3.326 | 3.929 |
| Faced with a natural disaster | -0.325 | -0.013 | -0.201 | 0.841 | -3.522 | 2.871 |
| Giving care to the disaster survivor | 4.271 | 0.163 | 2.460 | 0.015 | 0.843 | 7.698 |
| CDNMQ | 0.106 | 0.527 | 7.893 | 0.000 | 0.079 | 0.132 |

CDNMQ: Competencies for Disaster Nursing Management Questionnaire

The disaster response self-efficacy scale determinants were evaluated by Binary Logistic regression analysis. The independent variables in the model together explain 28.1% of the change in the dependent variable (R2=0.325; F(11.171)=7.473; p<0.001). The DRSES score of the caregivers of the disaster victim was significantly higher than the non-

caregivers (p=0.015). A one standard deviation increase in CDNMQ score will increase DRSES scores by 0.53 standard deviations (p<0.001) (Table 5).

## Competencies in disaster management

The International Council of Nurses (ICN) emphasises that all nurses should have competencies in all stages of disaster management, regardless of their duties or specialities.[41] In this study, the competency levels of nurses in disaster nursing management were evaluated. The first sub-dimension of the competencies in the disaster management scale is the sub-dimension of problems and barriers encountered by incompetence. The items in this dimension evaluate education, research and expertise in this field, support and evaluation tools, and the roles of nurses.[35] The literature reported that the most common challenges nurses face in disasters are inadequate disaster preparedness, weak formal education on disaster preparedness, lack of disaster-related research, ethical principles, legal responsibilities, and uncertainties about their roles in disasters.[21] In this study, the barriers and problems subdimension was found to be above average. This finding shows that there are some barriers and problems that prevent nurses from developing disaster competencies. It would be appropriate to evaluate this sub-dimension within the scope of the competencies in preparation and planning, incident management systems, safety, assessment, intervention, recovery, law and ethics determined by ICN. When these competencies of ICN are taken into consideration, it can be said that within the scope of this study, nurses have problems and problems above average in terms of being ready for actions in case of disaster, knowing the disaster response structure and actions, making safe and unsafe interventions, evaluating the disaster, ensuring recovery, and understanding the legal and ethical framework in every application to be made. In a similar study, it was emphasised that nurses faced difficulties that prevented them from developing their competencies in disaster management.[22] Another study obtained the highest score from the barriers in developing core competencies subdimension.[42] These data show that disaster nursing has ambiguous roles, education, training, and field expertise are not sufficient, and research on this subject is lacking. In line with these data, it is thought that opening disaster nursing courses in the relevant departments of universities, training expert nurses in this field, clarifying the roles and responsibilities of nurses from the disaster preparation stage to the intervention and recovery stage, determining the legal and legal responsibilities of nurses in the risk and crisis stages of the disaster, and clarifying ethical principles will help nurses cope with the barriers and problems they face in disaster management.

The second sub-dimension of nurses' disaster management is duties and responsibilities. This sub-dimension includes various aspects such as developing plans and policies, education and training, drills and creating guidelines.[35] In this study, the tasks and responsibilities subdimension was found to be below average. It would be appropriate to evaluate this sub-dimension within the scope of the competencies in preparedness and planning, incident management systems, law and ethics determined by ICN. Considering these competencies of ICN, it can be said that within the scope of this study, nurses do not know their duties and responsibilities in disaster preparedness, disaster response structure and actions sufficiently, and the level of knowing their duties and responsibilities within the legal and ethical framework is below average. Similar to this study, previous studies have shown that nurses do not sufficiently know their roles and responsibilities in disaster management.[22,42] Another study found that 84% of nurses wanted to receive training on the roles of nurses in disaster education.[34] In this study, the fact that nurses did not know their roles and responsibilities in disaster management sufficiently can be explained primarily by the fact that 72.3% of the nurses participating in the study did not receive training on disaster nursing, 80.4% did not participate in disaster drills, 67.4% did not provide care to disaster victims, 47.3% did not know that there was a

hospital disaster plan, and 70.7% did not read the disaster plan in their hospitals. In addition, the fact that nurses do not know their roles and responsibilities in disaster management sufficiently can be explained by the high rate of encountering barriers and problems in disaster management.

The third sub-dimension of the scale of competencies in disaster management is essential competencies. In this dimension, many core competencies of nurses in disaster management, such as triage, record keeping, planning, communication, ethical issues, psychological preparation, drills, patient transportation, and case and resource management, are evaluated.[35] The literature shows that disaster core competencies of nurses are essential for them to be prepared for disaster situations, identify disaster risks, minimise damages, take precautions, provide holistic care during and after disasters, and intervene effectively.[17,35,42] In this study, the core competency subscale of nurses was found to be above average. It would be appropriate to evaluate this sub-dimension within the competencies in preparedness and planning, communication, incident management systems, safety, assessment, response, recovery, law and ethics determined by ICN. When these competencies of ICN are considered, it can be said that the nurses' competency levels in this study are above average in case of disaster. Although there are limited studies evaluating the disaster basic competence and disaster risk management competence of nurses in the literature, the studies emphasise that there are inadequacies in some disaster competencies of nurses and nursing students and that these should be improved.[17,33] In this study, the total mean score of nurses' disaster management competency levels was above the average. These findings indicate that nurses have a high self-perception of competence in disaster management. Still, they face significant problems and barriers that prevent them from developing these competencies, and they do not know their roles and responsibilities in disaster management sufficiently.

In this study, nurses with bachelor's degrees had higher disaster management competence than nurses with high school/pre-license degrees. In previous studies, it was found that as the level of education increases, readiness for disaster interventions, disaster competence and willingness to intervene in disasters increase.[17,43] This is thought to be because nurses with higher education levels have more knowledge and skills in disaster management. However, the fact that no significant relationship was found between nurses with postgraduate degrees and nurses with undergraduate degrees in this study is thought to be due to the low number of postgraduate nurses participating.

In this study, the disaster management competence of nurses working in state hospitals was higher than that of nurses working in education and research hospitals. The reason for this difference is the participation in the exercise. In the study, while the rate of receiving disaster-related training was higher in those working in education and research hospitals, the rate of participating in the drill was higher in state hospitals. The training programs to be prepared for disaster management include both theoretical and applied training, such as simulation and drills, increasing the effectiveness and success of the training. In addition, this difference may be due to the strategic approaches of the institutions and the use of resources. For example, disaster management training, leadership support for disaster preparedness, specific disaster management policies, physical resources, disaster plans and disaster communication protocols, and supporting the physical and psycho-social health of employees may have affected the disaster management competence of nurses. It is recommended to investigate and evaluate the institutional factors affecting the competencies of nurses in disaster management in studies.

**Disaster response self-efficacy**

Nurses' self-efficacy in disaster response is considered an essential factor affecting disaster management competence. It is vital to have a high level of disaster self-efficacy,

which defines nurses' judgments and beliefs about how well they can manage the disaster process and how well they can take the actions necessary to cope with the disaster. In short, an effective disaster response requires higher self-efficacy.[44] A study has also revealed that nursing students with high disaster response self-efficacy have high disaster preparedness and competence.[45] This study found a positive relationship between disaster response self-efficacy and disaster management competence. As a result of the regression analysis, it was found that per unit increase in CDNMQ occurred a 0.53 unit increase in DRSES (per unit increase in CDNMQ occurred a 0.53 unit increase in DRSES), and at the same time, per unit increase in DRSES occurred a 0.52 unit increase in CDNMQ. Previous studies found that nurses and nursing students with more knowledge, skills and abilities about disasters have more confidence or self-efficacy in responding to disasters.[2] Another recent study emphasises that disaster response self-efficacy is vital in strengthening disaster nursing competence.[5]

In this study, the disaster intervention self-efficacy of nurses caring for disaster victims was high. In a study similar to this finding, it was argued that the more experience students have in disasters, the more their self-efficacy, and willingness to intervene during disasters will increase and improve their disaster competence interventions.[46] Another study emphasised that nurses' previous experience and self-efficacy in disaster management are vital for disaster nursing competence.[47]

In disasters, it is crucial to have a high level of self-efficacy that determines the quality of decision-making, information processing, problem-solving, behaviour and performance of nurses.[2] A study emphasises the importance of increasing the disaster response self-efficacy of nursing students to help patients successfully in disaster situations.[48] In this study, the total self-efficacy score of nurses was found to be above average. Limited studies in this field reported that nurses' disaster response self-efficacy levels were below ideal.[2,47] Similarly, disaster response self-efficacy was found to be at a moderate level in studies conducted with nursing students.[38,44,46] From these data, we can conclude that nurses do not believe in their ability to manage the disaster process, cope with the challenges of the disaster, and believe in their skills and knowledge to complete their tasks. Individuals with high self-efficacy have higher competence and are more willing to solve problems in difficult situations, adapt better to new environments and intervene effectively. Therefore, it is crucial to strengthen the self-efficacy of nurses to adapt to disasters and intervene effectively.[28]

In on-site rescue, the first sub-dimension of the disaster response self-efficacy scale, competencies such as damage assessment, assessing the injured and epidemic situation, recognising vulnerable groups, performing triage, and providing nursing care are evaluated.[37] In a study conducted with nursing students, disaster emergency rescue competence was moderate.[46] In this study, the on-site rescue subscale was above average. In this study, the on-site rescue subdimension was above average. It would be appropriate to evaluate this subdimension within the scope of the competencies in the fields of assessment, intervention and safety determined by ICN. Considering these competencies of ICN, it can be said that the competency of nurses in this study is to collect data by evaluating the individual, family and community in the disaster area, to intervene appropriately in the light of these data and to avoid unsafe practices at a moderate level. This finding is expected because nurses have low rates of encountering natural disasters, caring for disaster victims, receiving training and participating in disaster-related drills. Their essential competencies, such as triage and patient transportation in disasters, are moderate.

The second sub-dimension of the disaster response self-efficacy scale is psychological competence in disaster (psychological nursing). This sub-dimension evaluates nurses' competencies, such as psychological assessment of disaster victims, treatment, and referrals.[37] Post-disaster psychological support is integral to general disaster

response.[49] However, the literature underlines that although most healthcare professionals have experience in first-aid interventions, they do not have sufficient training and experience in psychological first-aid.[50] In this study, the psychological competence of nurses in the disaster was found to be moderate. It would be appropriate to evaluate this sub-dimension within the scope of competencies in assessment, communication, intervention and safety determined by ICN. Considering these competencies of ICN, within the scope of this study, it can be said that the competency of nurses to enable disaster victims and the affected community to develop disaster coping behaviours with practical communication skills, to reveal their strengths, to collect data in this direction by making their psychological evaluation and to intervene effectively in the light of these data, and to avoid unsafe psychological interventions is at a moderate level. In a similar research, the disaster psychological competence of nursing students was found to be mild.[46] Nurses need to provide appropriate psychological support interventions to disaster victims at every stage of the disaster to minimise the psychological effects of the traumatic disaster, accelerate the healing process, increase psychological resilience and ensure emotional safety.[50] The findings show nurses need interventions to improve their psychological intervention competencies in disasters.

The third sub-dimension of the disaster response self-efficacy scale is the adaptation and quality of the role undertaken in the disaster (role quality and adaptation). With this sub-dimension, the competencies of the nurse, such as adaptation to the working environment and the ability to communicate with other team members, disaster victims and their relatives, are evaluated.[37] In this study, nurses' adaptation and quality of the role assumed in the disaster were above average. It would be appropriate to evaluate this sub-dimension within the scope of the competencies in the field of communication determined by ICN. Considering this competency of ICN, it can be said that the competency of the nurses in this study in communicating the necessary basic information to other team members, individuals, families and society and informing the decisions taken is above average. Similar to this study, in a survey conducted with nursing students, disaster role quality and adaptation competence were found to be moderate.[46] As a result of this study, it is thought that the fact that nurses do not know their roles and responsibilities in the disaster sufficiently affects their adaptation to their roles and their belief in the quality of their roles.

### Strengths and limitations of the research

The study has some strengths. First of all, to the best of our knowledge, this is the first study in which the relationship between nurses' competence in disaster management and intervention self-efficacy levels was evaluated. Although this study has strengths, the insufficiency in the literature limits the discussion of the results. Another strength is that the survey was conducted after a major disaster in the country. However, the increased awareness of nurses after the tragedy may have affected the results. In addition, the inclusion of nurses working in public hospitals in the city centre and the exclusion of nurses working in rural and private hospitals limits the generalizability of the study. This means that the findings represent only nurses working in urban public hospitals and, therefore, the generalizability of the study is limited.

## CONCLUSION AND RECOMMENDATIONS

As a result of this study, it was found that the disaster management competence and response self-efficacy of nurses were above average. It was observed that nurses' disaster management competence and intervention self-efficacy positively affected each other. It would be beneficial to include disaster management competence and intervention

self-efficacy issues in all intervention programs to enable nurses to cope with disaster in case of disaster and to perform effective disaster management. Simulation-based training interventions to be carried out in this direction will contribute to nurses' readiness for disaster management, clarification of their roles and responsibilities in disaster, increase in their performance, identification of gaps in communication, skills and resources, and increase their confidence in their professional practices. In addition, the experience they gain will enable them to take a more active role in case of a disaster and provide quality health services with a holistic approach. In addition, education level and institution were predictive variables in disaster management, and having provided care to disaster victims was a predictive variable in disaster self-efficacy.

**Relevance of clınıcal practıce**

Implications for nursing and health policy

The results of this study emphasise that it is essential to increase the disaster management competencies and intervention self-efficacy that nurses need to successfully intervene with disaster victims and the affected community in disaster situations. Based on the research results,

- Conducting studies to identify the problems and barriers that prevent nurses from developing their competencies in disaster management and intervention and taking measures to address them,
- Making the job descriptions of nurses in disaster management more comprehensive, determining their legal and legal responsibilities in the risk and crisis stages of the disaster, clarifying ethical principles,
- Development of simulation-based disaster nursing training programs such as first aid, essential life support, triage techniques, infection control, intervention in multiple trauma, psychological approach in post-traumatic stress, spiritual care and search and rescue. In addition, the use of training activities such as drills, seminars and workshops to increase the effectiveness of the training programs to be prepared,
- Adding theoretical and practical courses on disasters to the nursing departments of universities, also integrating modules on psychological preparedness for disaster situations into the training,
- Disaster psychological first aid training for nurses should be made widespread, and certification programs should be prepared,
- Conducting descriptive studies with a larger sample of nurses investigating their disaster management and intervention competencies and obtaining the opinions of nurses on this issue by conducting qualitative studies,
- It is concluded that nurse managers, health policymakers, and governments should strengthen nurses' disaster management competence and response self-efficacy.

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**REFERENCES**

1. Lan L, Zhou M, Wang L. et al. Enhancing emergency nurses' disaster nursing ability and psychological resilience: A randomized controlled trial. Emergency Medicine International. 2023; 27;6108057. doi.org/10.1155/2023/6108057
2. Labrague LJ, Kamanyire JK, Achora S. et al. Predictors of disaster response self-efficacy among nurses in Oman. International Journal of Disaster Risk Reduction. 2021; 61, 102300 doi.org/10.1016/j.ijdrr.2021.102300
3. Gumus D, Yılmaz Z, Tuncer M, Aydın E. The role of nurses in disaster management. Journal of Disaster and Risk. 2024; 7(2):354-367. doi.org/10.35341/afet.1329817
4. Olaolorunpo O, Beatrice AO. Disaster preparedness and first aid response: The role of emergency nurses. Archives of Medicine and Health Sciences. 2024; 12(2):231-236, doi.org/10.4103/amhs.amhs_12_24
5. Kim SH. A psychometric validation of the korean version of disaster response self-efficacy scale for nursing students. Int J Environ Res Public Health. 2023; 4;20(4):2804. doi.org/10.3390/ijerph20042804
6. Fukada M. Nursing competency: Definition, structure and development. Yonago Acta Med. 2018; 28;61(1):1-7. doi.org/10.33160/yam.2018.03.001
7. Mrayyan MT, Abunab HY, Abu Khait A, et al. Competency in nursing practice: a concept analysis. BMJ Open. 2023; 1;13(6):e067352. doi.org/10.1136/bmjopen-2022-067352
8. Fukada M. Nursing competency: Definition, structure and development. Yonago Acta Med. 2018; 61:1–7. doi.org/ 10.33160/yam.2018.03.001
9. Pourvakhshoori N, Norouzi K, Ahmadi F, et al. Nursing in disasters: A review of existing models. International Emergency Nursing. 2017; 31: 58–63. doi.org/ 10.1016/j.ienj.2016.06.004
10. Mizutori M. Reflections on the Sendai Framework for disaster risk reduction: Five years since its adoption. Int J Disaster Risk Sci. 2020; 11(2):147–51. doi.org/10.1007/s13753-020-00261-2
11. Brewer CA, Hutton A, Hammad KS, et al. A feasibility study on disaster preparedness in regional and rural emergency departments in New South Wales: Nurses self-assessment of knowledge, skills and preparation for disaster management. Australasian Emerg Care. 2020; 23(1):29–36. doi.org/10.1016/j.auec.2019.12.005
12. ICN - International Council of Nurses (2019) Available from: https://www.icn.ch/sites/default/files/inline-files/ICN_Disaster-Comp-Report_WEB.pdf Accessed February 27, 2024.
13. Tas F, Cakir M, Kadioglu S. Identification of the preparedness level of nurses for disasters in Turkey: A university hospital example. International Journal of Disaster Risk Reduction. 2020; 44, 101441. doi.org/10.1016/j.ijdrr.2019.101441
14. Taskiran G, Baykal U. Nurses' disaster preparedness and core competencies in Turkey: A descriptive correlational design. Int. Nurs. Rev. 2019; 66 (2), 165-175 doi.org/10.1111/inr.12501
15. Said NB, Chiang VC. The knowledge, skill competencies, and psychological preparedness of nurses for Disasters: A systematic review. Int Emerg Nurs. 2020; 48:100806. doi.org/ 10.1016/j.ienj.2019.100806
16. Farokhzadian J. Mangolian Shahrbabaki P. Farahmandnia H. et al. Nurses' challenges for disaster response: A qualitative study. BMC Emerg Med. 2024; 3;24(1):1. doi.org/10.1186/s12873-023-00921-8
17. Chegini Z, Arab-Zozani M, Kakemam E, et al. Disaster preparedness and core competencies among emergency nurses: A cross-sectional study. Nursing open, 2022; 9(2):1294–302. doi.org/10.1002/nop2.1172
18. Said NB, Molassiotis A, Chiang VC. Psychological preparedness for disasters among nurses with disaster field experience: An international online survey. Int. J . Disaster Risk Reduct. 2020; 46:e101533-e101533. doi.org/10.1016/j.ijdrr.2020.101533
19. Internatıonal Councıl Of Nurses (ICN), 2022. Core Competencıes In Dısaster Nursıng: Competencıes For Nurses Involved In Emergency Medıcal Teams (Level III). 1201 Geneva, Switzerland. ISBN: Digital 978-92-95124-10-3.
20. Lai J, Wen G, Gu C, et al. The core competencies in disaster nursing of new graduate nurses in Guangdong, China: A cross-sectional study. Nurse Educ Pract. 2024; 77:103987. doi.org/10.1016/j.nepr.2024.103987.
21. Chegini Z, Arab-Zozani M, Kakemam E, et al. Disaster preparedness and core competencies among emergency nurses: A cross-sectional study. Nursing Open. 2022; 9(2), 1294–1302. doi.org/10.1002/nop2.1172.
22. Demirtas H, Altuntas, S. Nurses' competence levels in disaster nursing management in Turkey: A comparative cross-sectional study. International Nursing Review. 2024; 71(3):556-562. doi.org/10.1111/inr.12829
23. Akkaya G, Akkuş Y, Parlak AG, et al. Determination of the relationship between competencies in disaster nursing management and perceived stress: The intermediary role of resilience. Int Emerg Nurs. 2024; 25;78:101530. doi.org/10.1016/j.ienj.2024.101530
24. Pignault A, Rastoder M, Houssemand C. The relationship between self-esteem, self-efficacy, and career decision-making difficulties: Psychological flourishing as a mediator. Eur J Investig Health Psychol Educ. 2023; 23;13(9):1553-1568. doi.org/10.3390/ejihpe13090113
25. Shengyao Y, Salarzadeh Jenatabadi H, Mengshi Y, et al. Academic resilience, self-efficacy, and motivation: The role of parenting style. Sci Rep. 2024; 14, 5571 doi.org/10.1038/s41598-024-55530-7
26. Cruz JP, Balay-Odao EM, Bajet JB, et al. Testing the validity and reliability of the Arabic version of the Disaster Response Self-Efficacy Scale among Saudi nursing students. Nurse. Educ. Pract. 2022; 64:103443. doi.org/10.1016/j.nepr.2022.103443
27. Imamoglu SZ. Erat S. Ayber ED. The Effect of self-efficiency and organizational ıdentification on ınnovative behavior and task performance: A research in the education sector. Journal of Academic Researches and Studies. 2021; 13(24), 210-225. doi.org/10.20990/kilisiibfakademik.878657
28. Li N, Yang Y, Zhao X, et al. The relationship between achievement motivation and college students' general self-efficacy: A moderated mediation model. Front. Psychol. 2023; 13:1031912. doi.org/10.3389/fpsyg.2022.1031912
29. Hobfoll SE, Halbesleben J, Neveu JP, et al. Conservation of resources in the organizational context: The reality of resources and their consequences. Annu. Rev. Organ. Psychol. Organ. Behav. 2018; 5:103–128. doi.org/10.1146/annurev-orgpsych-032117-104640
30. Freire C, Ferradás MDM, Núñez JC, et al. Eudaimonic Well-being and coping with stress in university students: The mediating/moderating role of self-efficacy. Int. J. Environ. Res. Public Health. 2019; 16:48. doi.org/10.3390/ijerph16010048
31. Ozkan HA, Cakır GN, Demirkan S, et al. A new educational model proposal: competency-based modular disaster nursing education. Journal of Disaster and Risk. 2024; 7(3):573-586. doi.org/10.35341/afet.1322491
32. Hasan MK, Uddin H, Younos TB. Bangladeshi nursing students' perceived preparedness and readiness for disaster management. International Journal of Disaster Risk Reduction. 2022; 81, 103303. doi.org/10.1016/j.ijdrr.2022.103303
33. Kaviani F, Aliakbari F, Sheikhbardsiri H, Arbon P. Nursing students' competency to attend disaster

situations: A study in western Iran. Disaster Medicine and Public Health Preparedness. 2022; 16(5):2044-2048. doi.org/10.1017/dmp.2021.263

34. Oztekin SD, Larson EE, Akahoshi M, et al. Japanese nurses' perception of their preparedness for disasters: Quantitative survey research on one prefecture in J apan. Japan Journal Of Nursing Science. 2016; 13(3), 391-401. doi.org/10.1111/jjns.12121
35. Al Thobaity A, Williams B, Plummer V. A new scale for disaster nursing core competencies: Development and psychometric testing. Australas Emerg Nurs J. 2016; 19: 11–19. doi.org/10.1016/j.aenj.2015.12.001
36. Durgut U, Yildiz T. Adaptation of the competencies for disaster nursing management questionnaire: Turkish version. Disaster Medicine and Public Health Preparedness. 2022; 16(4), 1496-1502. doi.org/10.1017/dmp.2021.160
37. Li HY, Bi RX, Zhong Q-L. The development and psychometric testing of a Disaster Response Self-Efficacy Scale among undergraduate nursing students. Nurse Educ Today. 2017; 59:16-20. doi.org/10.1016/j.nedt.2017.07.009
38. Koca B, Cagan O. Ture A. Validity and reliability study of the Turkish version of the disaster response self-efficacy scale in undergraduate nursing students. Acıbadem University Health Sciences Journal. 2020; 11(3):515-521. doi.org/10.31067/0.2020.301
39. Koklu N, Buyukozturk S, Cokluk O. 2022. Sosyal Bilimler İçin İstatistik. Pegem Akademi, Ankara. ISBN 978-975-6802-33-5
40. Ozsoy S, Ozsoy G. Effect size reporting in educational research. Elementary Education Online. 2013; 12(2), 334-346,
41. International Council of Nurses (ICN) (2019). Core competencies in disaster nursing. Available from: https://www.icn.ch/sites/default/files/inline-files/ICN_Disaster-Comp-Report_WEB_final.pdf Accessed February 27, 2024.
42. Karnjuš I, Prosen M, Ličen S. Nurses' core disaster-response competencies for combating COVID-19-A cross-sectional study. PLoS One. 2021; 10;16(6):e0252934. doi.org/10.1371/journal.pone.0252934
43. Lin CH, Tzeng WC, Chiang LC, Lee MS, Chiang SL. Determinants of nurses' readiness for disaster response: A cross-sectional study. Heliyon. 2023; 30;9(10):e20579. doi.org/10.1016/j.heliyon.2023.e20579.
44. Hasan MK, et al. (2024). Disaster response self-efficacy of nursing students: Perceived level and associated factors. Nurse Education Today, 106254. doi.org/10.1016/j.nedt.2024.106254
45. Ning N, Hu M, Qiao J, et al. Factors associated with individual emergency preparedness behaviors: A cross-sectional survey among the public in three Chinese provinces. Front. Public. Health. 2021; 9:644421. doi.org/10.3389/fpubh.2021.644421
46. Kamanyire JK, Wesonga R, Achora S, et al. Nursing students' perceived disaster preparedness and response: Pilot study in Oman. Sultan Qaboos Univ Med J. 2021; 21(4):621-625. doi.org/10.18295/squmj.5.2021.074
47. Mousavi SM, Majidi SA, Shabahang R, et al. The prediction of disaster nursing competency based on the self-efficacy and disaster related experiences of nurses. Journal of Clinical Nursing and Midwifery. 2020; 9(1): 582-590.
48. Isleyen KE, Demirkaya Z. Relationship between disaster response self-efficacy and disaster preparedness in nursing students: Afte earthquake study. Disaster Med Public Health Prep. 2024; 2;18:e83. doi.org/10.1017/dmp.2024.69
49. Li G, Shi W, Gao X, et al. Mental health and psychosocial interventions to limit the adverse psychological effects of disasters and emergencies in China: A scoping review. The Lancet Regional Health–Western Pacific. 2022; 5(45),100580. doi.org/10.1016/j.lanwpc.2022.100580
50. Ozyer Y, Dincer S. Psychological first-aid roles of nurses in disasters. IBAD Journal of Social Sciences. 2020; (7), 198-206. doi.org/10.21733/ibad.650795.