

Original Research Article

The Adaptation of the Disaster Nursing Readiness Evaluation Index for Nurses in Türkiye

Şenay AKGÜN^{1*}, Duygu ÖZTAŞ², Funda ÖZPULAT³, Yeşim ÇETİNKAYA ŞEN⁴


¹PhD, RN, Associate Professor, Department of Public Health Nursing, Faculty of Health Sciences, Alanya Alaaddin Keykubat University, Alanya/ Antalya/ TÜRKİYE

²PhD, RN, Assistant Professor, Department of Public Health Nursing, Faculty of Health Sciences, Ankara University, Ankara/ TÜRKİYE

³PhD, RN, Associate Professor, Selçuk University Akşehir KadirYallagoz Health School, Akşehir/ Konya/ TÜRKİYE

⁴MSc, RN, Ankara University, Haymana Health Services Vocational School, Ankara/ TÜRKİYE

*Corresponding author email: senay.akgun@alanya.edu.tr

	International Archives of Integrated Medicine, Vol. 11, Issue 9, September, 2024. Available online at http://iaimjournal.com/
	ISSN: 2394-0026 (P) ISSN: 2394-0034 (O) Received on: 20-8-2024 Accepted on: 31-8-2024 Source of support: Nil Conflict of interest: None declared. Article is under Creative Common Attribution 4.0 International DOI: 10.5281/zenodo.13853612
How to cite this article: Şenay AKGÜN, Duygu ÖZTAŞ, Funda ÖZPULAT, Yeşim ÇETİNKAYA ŞEN. The Adaptation of the Disaster Nursing Readiness Evaluation Index for Nurses in Türkiye. Int. Arch. Integr. Med., 2024; 11(9): 1-11.	

Abstract

Background: Türkiye frequently faces natural disasters, especially earthquakes. That's why this study aimed to translate and validate the Disasters Nursing Readiness Evaluation Index (DNREI) for Nurses in Türkiye was developed by Maeda, et al. in 2018 to Turkish.

Methods: This was cross-sectional and methodological research. The index used in this study was 37 items and 6 sub-dimensions. There search was conducted with 362 nurses selected through snow balling sampling. Disasters Nursing Readiness Evaluation Index-TR was applied to determine the validity and reliability using the exploratory and confirmatory factor analysis. Cronbach's alpha analysis and the Split-Half Method were used to determine internal consistency. Dependent samples t-test to compare the test-retest scores for time invariance; and intra-class correlation coefficient.

Results: The content validity of the Turkish version of the index is between 0.87 and 1.00. The content validity index score was found to be 0.92. The Split-Half method was applied to analyze reliability and there liability coefficients were found to be 0.83 and 0.85. As a result of the

confirmatory factor analysis of the DNERI-TR, it was found that the 6-factor structure of the scale was valid and the goodness of fit tests was appropriate.

Conclusion: The “Disasters Nursing Readiness Evaluation Index-TR” was found to have a high level of reliability and validity for nurses in Türkiye to evaluate the disaster readiness of nurses and to develop a disaster education model for life-long learning.

Key words

Disasters, Nurses, Preparedness, Readiness, Validity, Reliability.

Introduction

Disasters, which are unexpected, suddenly and unpredictable situations, occur in almost every country in the world. Some of the disasters occur naturally, some are technological or man-made events [1]. Flooding, earthquakes, storming, volcanic eruptions, etc. occur naturally; war, terrorist attack, biological war occur man-made; chemical, industrial, aircraft, railway and ship accidents, dam failure occur technological [2, 3]. Disasters cause severe damages in the places where they occur and affect economic status, social life, environments, political process, etc. Hence, disasters cause to many deaths, financial loss, disability, malnutrition, health problems [4, 5]. Like many health professions nurses have important roles, duties and responsibilities especially in disaster situations.

Nurses play important role in disaster. Although leadership, problem-solving, decision-making, stress or anxiety management skills, etc., are often discussed in modern nursing roles, disaster nursing remains relatively less visible. However, Florence Nightingale worked as a disaster nurse in a war hospital during her time and saved many lives through nursing care. She demonstrated the efficacy of nursing care in disaster situations [6]. In contemporary time disaster nursing, it is characterized by the use of professional nursing knowledge and skills related to disaster in order to reduce death and health risks caused by disasters. Also nurses take part in health management and care throughout the disaster process [7]. Therefore nurses have responsibilities such as reducing life-threatening hazards in disasters, taking precautions and being prepared for disasters situations [5].

Like many countries in the world, Türkiye is prone to disasters. Türkiye faces various types of natural disasters such as flooding, landslides, storms, and especially earthquakes [8]. Therefore, it is essential to take precautions for disaster preparedness in Türkiye. After Türkiye-Suriye Earthquakes or Türkiye Kahramanmaraş Earthquakes occurred on February 6, 2023, disaster preparedness precautions became even more crucial [9]. On the grounds that Türkiye prones to disasters, Turkish nurses need to take precautions and be prepared for disaster situations. However, the first step should be to evaluate nurses' readiness against disaster situations [10, 11]. The second step should be planning intervention programs for nurses to raise awareness, take precautions and be prepared for disaster situations. In order to plan intervention programs for nurses, the contemporary and inclusive scale or index should be used to evaluate nurses' readiness for disaster situations. Many scales have been developed with proven validity and reliability in Türkiye [12-15] to evaluate the disaster preparedness level and disaster awareness of community. Some of the scales have been developed with proven validity and reliability to evaluate nurses' basic competencies for disaster readiness, disaster readiness level, disaster perceptions and intervention self-efficacy against disasters [16]. Although disaster nursing is not a new concept in Türkiye, we saw that most of nurses were not prepared for disasters at Türkiye-Syria Earthquakes occurred on February 6, 2023 [17, 18]. Determining nurses' self-assessments regarding their preparedness in different practice dimensions will be very important in ensuring timely and effective response to disasters. For

this reason, the aim of this research is to analyze the validity and reliability of the “Japanese Disasters Nursing Readiness Evaluation Index (JDNREI)” in Turkish. Japan, like Türkiye, is a country prone to significant natural disasters. So the JDNREI was developed to evaluate disasters nursing readiness for disasters in Japan is considered to be an useful tool for determining Turkish nurse’s disaster readiness situations and planning intervention programs.

Materials and methods

Study design and sample size

This was cross-sectional and methodological study. It is aimed to determine the validity and reliability the “Japanese Disasters Nursing Readiness Evaluation Index (JDNREI)” for Türkiye. The study was conducted between May 15 2023 and October 30 2023. Snow balling sampling method was used to compose the sample of research. Therefore, a social media application which is commonly used by nurses in Türkiye was utilized to contact with them. Sample size was calculated based on a 95% confidence interval, a 5% margin of error, and an estimated response rate of 20%. According to Republic of Türkiye Ministry of Health (RTHM) data 2023 year, 302704 nurses/midwives were employed in Türkiye [19]. The calculated result indicated that the sample consists of 384 nurses and 1920 nurses should be invited to participate in the research. Therefore, a total of 4.870 nurses were contacted through a social media application to participate in the project. Nurses were informed about the research aim and voluntarily participated by an informed consent form. Of the contacted nurses, 362 nurses completed the questionnaire. The sample size was accepted as sufficiency because of the responses of 5 or 10 individuals is sufficient for analyzing the reliability and validity of scale study [20].

Descriptive characteristics of the participants

The sample of the study which was conducted between May 15, 2023 and October 30, 2023 included 362 nurses. The mean participant age

was 33.25±8.25 years and 58.2% of female, 41.4% of them had nursing experience of 31 years or more. 73.2% had bachelor degree, 13.3% had master degree, 86.2% of them were employed as staff, 42.8% of them were employed at emergency nursing, intensive care unit and perioperative nursing, 37.6% of them were employed at internal medicine and surgical nursing. 47.2% of them hadn’t taken disaster practices education before, 23.2% of them had taken disaster practices education more than two years ago. 80.9% of them were not employed in disaster teams, 45.9% of them indicated that if a disaster situation arose, their family would support their decision to go to the disaster area (n=69). 50.3% of them indicated that if a disaster situation arises in the future; their family would support their decision to go to the disaster area. 40.6% of them indicated negative feelings and 30.4% of them indicated not good feelings about their previous duties in disaster areas (n=69). 73.9% of them indicated that their family supported their decision to be employed in disaster areas. 82.6% of them indicated that if they had another opportunity to work in disaster areas, they would participate again (n=69). 68.1% of them stated that their managers and colleagues provided positive feedback, when they returned their workplace (n=69) and 56.4% of them stated that they didn’t have healthy life style.

Data collection instruments

The data were collected with a description information data form and the other DNREI-TR index.

Descriptive information questionnaire

The data were collected with a description information data form consist of 24 questions that included in JDNREI and also questions were added by Turkish researchers (age, gender, education, participate in disaster situations, etc.).

Japanese Disasters Nursing Readiness Evaluation Index (JDNREI)

JDNREI index is developed by Maeda, et al. in 2018 [21]. The JDNREI comprises 24 descriptive

personal information questions 37 items and 6 sub-dimensions. 5-point Likert scale was used to select answers for the items. However, the likert types are changeable sometimes. The scale is scored in a five-point Likert format. Individual readiness is assessed totally JDNREI's score. The Cronbach's alpha for the scale was 0.93.

Disaster Nursing Readiness Evaluation Index-TR (DNREI-TR)

The Turkish version, named “Disaster Nursing Readiness Evaluation Index-TR” also consists of 37 items and 6 sub-dimensions, similar to/ mirroring the original version. The sub-dimensions are Factor 1 (F1) - Emergency Nursing Skills (1-6. items), Factor 2 (F2) – Practical Skills for Disaster Response (7.-14. items), Factor 3(F3) – Communication Skills for Team work (15-22. items), Factor 4 (F4)- Effective Coping with Daily Stress (23-24. items), Factor 5 (F5)- Cooperation Skills (25-29. items), Factor 6 (F6)- Adaptability to Stressful Situations at the Disaster Site (30.-37. items). The total individual DNREI scores ranged from 37 to 185, a mean score is found 126.36 ± 20.69 .

Data analysis

The exploratory factor and reliability analyses were conducted with Statistical Package for the Social Sciences (SPSS) version 26.0 (IBM SPSS Corp.; Armonk, NY, USA, 2019), and the confirmatory factor analysis was conducted with AMOS 23 software. In statistical analysis, the t-test was conducted on numerical variables, and the Pearson's chi squared test was conducted on categorical variables to determine the differences between socio-demographic variables. The Pearson's correlation coefficient was employed to determine the correlations between the variables. The statistical significance was accepted as $p < .05$, and the Kolmogorov–Smirnov test was conducted to determine the normal distribution of the data.

Results

Validity Analysis

Face and content validity

The first step in adapting DNREI-TR to Turkish society was to translate language validity. For this aim, the original JDNREI was translated into Turkish by 3 experts employed in the English department of the school of foreign languages in a public university. The index items and descriptive questions that were translated into Turkish were assessed by 8 expert lecturers. After these steps Turkish version was prepared. Afterwards, the scale form was evaluated by two Turkish Language and Literature field experts in terms of grammar and intelligibility. After revised corrections, the scale form was translated back into its original language by two different linguists. The differences and similarities were compared by experts. Content Validity Index (CVI) was calculated for each item using the Davis technique. To determine Content Validity Index (CVI) the item was scored with 1 point for “inadequate,” 2 points for “somewhat adequate,” 3 points for “adequate,” and 4 points for “completely adequate.” CVI of the items was found to be .98. After the approval, the translated and revised version was assessed by a lecturer in Turkish language. A pilot study was carried out with 20 nurses to evaluate the DNREI-TR comprehensibility.

Construct validity

In the present study, confirmatory factor analysis (CFA) results (**Table - 1**) were analyzed for the chi-square goodness of fit, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), Tucker–Lewis index (TLI), incremental fit index (IFI), normed fit index (NFI), root mean square (RMR), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR) indices. The measurement model, established to confirm the structure consisting of 37 items and 6 factors as in the original index, was analyzed with DFA. The path coefficients (factor loadings) of the index items with their respective dimensions ranged between 0.30 and 0.99 (**Figure - 1**). These coefficients were found to be between 0.56 and 0.78 for Disaster Nursing Skills dimension, between 0.44 and 0.78 for Disaster Response Practice Skills dimension,

between 0.51 and 0.75 for Team Communication Skills dimension, 0.64 and 0.81 for Coping with Daily Stress dimension, between 0.44 and 0.76 for Collaboration Skills dimension, and between 0.62 and 0.76 for Adaptation to Stressful Situations in Disaster Areas dimension (Figure - 1).

Table – 1: Index Values of the Measurement Model and Good Fit Value (n=362).

	The Fit Index Values of the Initial Model	The Fit Index Values After Modification	Acceptable Fit Values
χ^2/sd	2.092	1.818	≤ 3 (4-5)
GFI	0.825	0.852	≥ 0.90 (0.89-0.85)
IFI	0.877	0.909	≥ 0.95 (0.94-0.90)
TLI (NNFI)	0.866	0.900	≥ 0.95 (0.94-0.90)
CFI	0.876	0.908	≥ 0.95 (0.94-0.90)
RMSEA	0.055	0.048	≤ 0.05 (0.06-0.08)
SRMR	0.062	0.062	≤ 0.05 (0.06-0.08)

Figure – 1: Pathdiagram for the DNREI-TR.

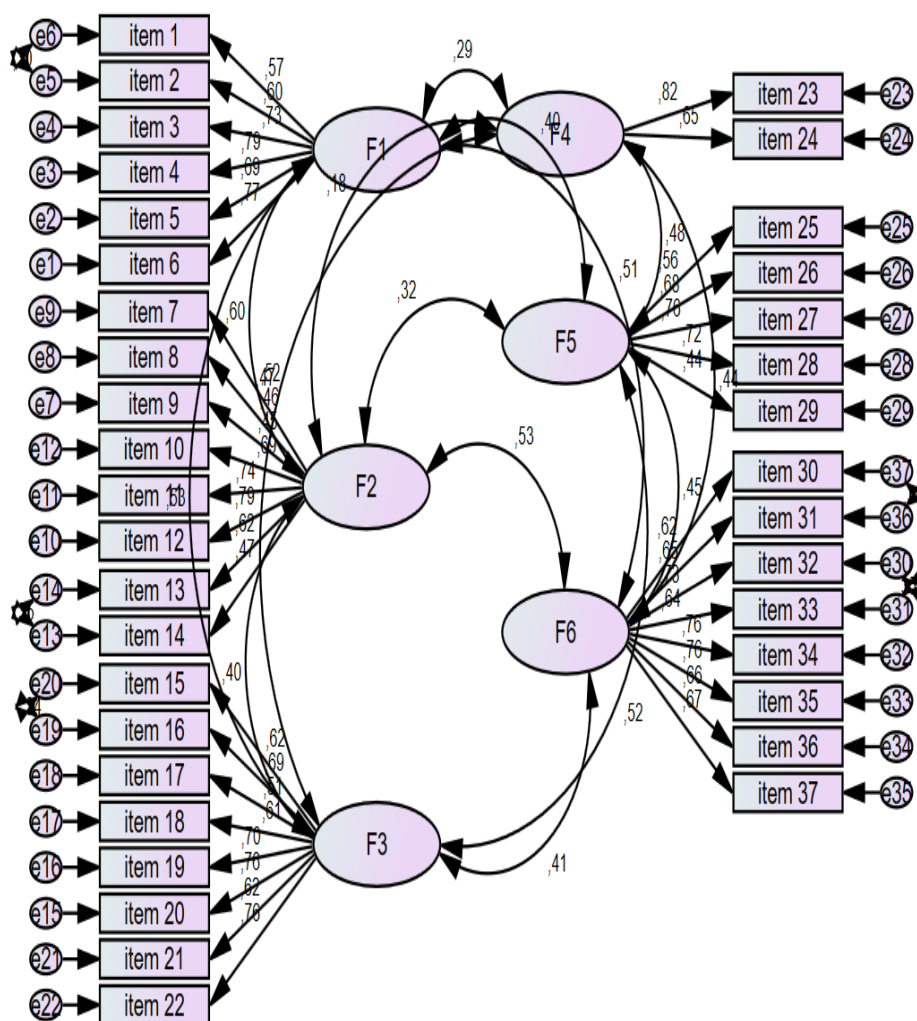


Table – 2: Investigation of the differences in scale and sub-dimension scores according to previous disaster response experience.

Index	Previous Disaster Response Experience		t [†] , p
	Yes (n=69) X±SD	No (n=293) X±SD	
	133.04±21.70	124.78±20.16	
Factor 1	21.64±5.68	20.60±5.01	
Factor_2	22.22±7.26	18.51±5.98	3.016, 0.003 ^{††}
Factor 3	32.36±4.53	31.28±5.47	1.506,0.133
Factor 4	7.03±1.99	7.02±2.05	3.946, 0.000 ^{††}
Factor_5	19.74±3.17	20.50±2.87	1.529,0.127
Factor_6	30.06±6.50	26.88±7.28	0.019,0.985
			-1.938,0.053
			3.327, 0.001 ^{††}

Abbreviations: X=Mean; SD: Standart Deviation

†t: independent samples t-tests^{††}:p<0.05

Table – 3: Split-half reliability.

	Item numbers	Cronbach Alfa (α)	Correlation between parts	Spearman-Brown	Guttman
One part	19	0,837			
Second part	18	0,855	0,907	0,951	0,950

Table – 4: Internal Reliability Coefficients.

	Items	Cronbach Alfa (α)	Reliability
DNREI-TR	37	0.920	Excellent
Factor 1	6	0.847	Excellent
Factor 2	8	0.808	Excellent
Factor 3	8	0.857	Excellent
Factor 4	2	0.690	Good
Factor 5	5	0.752	Good
Factor 6	8	0.884	Excellent

Criterion related validity

Table - 2 shows that the results of the independent samples t-tests indicate statistically significant differences between nurses who have and have not previously served in disasters; specifically, in terms of total scale scores, and

the mean scores for Factor 2 and Factor 6 (p<0.05).

Reliability Analysis

Split-half reliability

Split-half reliability was mainly used to evaluate the DNREI-TR reliability. The items were

divided into two parts: one part consisted of 19 items and the second part consisted of 18 items. The results showed that the reliability coefficients were found to be highly reliable ($\alpha > 0.7$). A high level of correlation (0.907) was

found between the two halves. Additionally, the Spearman-Brown and Guttman coefficients analyses showed that the split-half reliability was accepted as high (**Table - 3**).

Table – 5: Intraclass Correlation Coefficients between Test-Retest Results Based on DNREI-TR and its Subscales ($n = 75$).

	ICC [†]	p	ICC [†]	Acceptable Fit Values
Total DNREI-TR	0.933	0.000^{††}		
Factor 1	0.918	0.000^{††}		
Factor 2	0.932	0.000^{††}	<0.40	Poor
Factor 3	0.938	0.000^{††}	0.40-0.59	Moderate
Factor 4	0.904	0.000^{††}	0.60-0.74	Good
Factor 5	0.912	0.000^{††}	> 0.74	Excellent
Factor 6	0.909	0.000^{††}		

[†]ICC = Intraclass Correlation Coefficients

^{††}: $p < 0.001$

Internal consistency and item analysis

The reliability of the scale was evaluated using the Cronbach's alpha reliability coefficient and item analysis. The Cronbach's alpha analysis showed that the reliability of the DNREI-TR that included 37 items was high ($\alpha=0.92$). Cronbach's alpha reliability coefficients of the subscales are shown in **Table - 4**.

Test-retest

DNREI-TR was applied to 75 nurses randomly selected from sample at different times (at two-week intervals). Intraclass Correlation Coefficients (ICC) was used to evaluate the relationships between the scores obtained from first and second administrations to assess the stability of the scale with 75 nurses over time. It can be said that there was excellent relationship between participants' responses to repeated questions for reliability ($p < 0.001$). The excellent relationship between the scores of the first and second administrations showed that DNREI-TR is accepted fit valuable (**Table - 5**).

Discussion

Confirmatory factor analysis (CFA) was employed for the construct validity of the Turkish form of the index and the path coefficients (factor loads) of the index items with their own size were found to be between 0.30 and 0.99. Factor loadings greater than 0.40 are founded [21]. Confirmatory factor analysis (CFA) is a multivariate statistical process that serves to test and evaluate the validity of structures determined by exploratory factor analysis (EFA) or to validate previous scale determination results using new data structures. In confirmatory factor analysis, a deductive strategy is employed, assuming which variables will be factored together in there search. Within this statistical process, efforts are made to determine the extent to which the variables conform to the assumed theoretical structure. "Criterion validity is typically assessed by comparison with a gold standard test at the same time (Concurrent Validity) or compares the measure in question with an outcome assessed at a later time (Predictive Validity) [22].

The investigation of temporal stability of the DNREI-TR within the study was applied to 75 nurses randomly selected from sample at

different times. Intraclass Correlation Coefficients (ICC) was used to evaluate the relationships between the scores obtained from first and second administrations to assess the stability of the scale with 75 nurses over time. In the study conducted, it was found that individuals who have previously served in disasters had statistically significantly higher average scores compared to those who have not. Furthermore, the known-groups comparison method was employed as a criterion validity technique to assess the construct validity of the scale. Similar to the findings by Maeda, et al., it was also noted that individuals who served in disasters had higher average scores compared to those who did not [21]. Consequently, when the hypothesis that individuals serving in disasters have higher scale scores was tested, it was accepted, and it was observed that the DNREI-TR scores reflected the expected differences between the groups. Thus, the criterion validity of the DNREI-TR was established.

“Critiques of coefficient alpha as an estimate of scale reliability are widespread in the literature. Cronbach’s alpha coefficient (henceforth, coefficient alpha) is a well-received estimate of scale reliability among researchers in psychology, social sciences, health sciences, and education” [23]. The result showed that DNREI-TR was excellent reliable ($\alpha=0.92$). The Cronbach's alpha coefficient for the total on the JDNREI was 0.93. This indicates that a Cronbach's alpha (α) of 0.70 or higher is considered to reflect good reliability of the scale [24, 25].

Conclusion

The “Japanese Disaster Nursing Readiness Evaluation Index (JDNREI)”, developed by Maeda, et al. in 2018, consists of 37 items and six sub-dimensions. The Turkish version, translated as the “Disaster Nursing Readiness Evaluation Index-TR” (DNREI-TR), also comprises 37 items and six sub-dimensions. In the index, the section following these six sub-dimensions, referred to as Section 7, consists of

24 questions related to personal/ professional details. These questions have been tailored for the Türkiye sample and additional questions have been included. In this study, the total individual scores for the Disaster Nursing Readiness Evaluation Index (DNREI) ranged from 37 to 185, with a mean score of 126.36 ± 20.69 . The scale is scored using a five-point Likert type. Statistical analyses revealed that the DNREI is highly reliable ($\alpha=0.920$). The results indicate that the Disaster Nursing Readiness Evaluation Index-TR is a valid and reliable measurement tool for use in research within Turkey. It is recommended that future research should also be conducted with different research groups using the Turkish version of the Disaster Nursing Readiness Evaluation Index-TR.

Ethical statements

For the Turkish adaptation of DNREI-TR, permission was obtained from Takoya Maeda, one of the developers of the scale, via e-mail. Written permission was obtained from Takayo Maeda, the author of communication for the scale, via e-mail for the adaptation of the scale to the Turkish language. Non-Invasive Ethics Committee of the Faculty of Medicine of A State University approvals were obtained to conduct the study (Date: 18.01.2022, Issue No: 2022/43, Decision No: 20.01.2022-E.212498). Also, informed consent was obtained from the participants. The study was conducted in accordance with the Declaration of Helsinki. Data was collected via Google Forms in the period from May 15, 2023 and October 30, 2023.

Relevance for clinical practice

Nurses play a key role in community health and safety. By improving their readiness through the DNREI, nurses can contribute to strengthening community resilience and preparedness for future disasters. An adapted DNREI can serve as a tool for quality improvement in disaster preparedness and response. Regular assessments can help healthcare organizations identify best practices and areas for improvement. Adaptation of the DNREI ensures that nurses in Türkiye are better

prepared for disaster situations. This includes developing necessary skills and knowledge specific to disaster response, which can be applied directly in clinical practice during emergencies. By assessing and improving nurses' readiness, healthcare providers can deliver more effective emergency care during disasters. This includes triage, first aid, and ongoing patient management in critical situations. The DNREI can guide healthcare facilities in Türkiye to allocate resources more effectively. This includes ensuring that hospitals and clinics have adequate medical supplies, equipment, and trained personnel for disaster response. The adaptation of DNREI can highlight areas where nurses need additional training or education in disaster preparedness. This supports continuous professional development and readiness in clinical practice. Overall, the adaptation of the DNREI for nurses in Türkiye plays a crucial role in enhancing clinical practice by ensuring that nurses are equipped to provide high-quality care and manage disasters effectively. This leads to improved health outcomes for patients and communities.

References

1. Velioglu N. (2021). Doğal Afet Kavramı ve Afet Hukukun Kapsamı. Erişim adresi: https://cdn-acikogretim.istanbul.edu.tr/auzefcontent/20_21_Bahar/afet_hukuku/2/index.html#:~:text=Afet%20kavram%C4%B1n%C4%B1n%20tan%C4%B1m%C4%B1%20itarat%C3%BCrde%20C3%A7e%C5%9Fitli,insan%20kaynakl%C4%B1%20olaylard%C4%B1r%5B23%5D
2. Said N.B. Chiang, V.C.L. The knowledge, skill competencies, and psychological preparedness of nurses for disasters: A systematic review. *International Emergency Nursing*, 2020; 48: 1-9. <https://doi.org/10.1016/j.ienj.2019.100806>.
3. AlOtaibi S. S., Almutairi H. A., Alotaibi M. K., Alharbi K., Bahari G. Enhancing Nurses' Disaster Management and Preparedness: Evaluating the Effectiveness of an Online Educational Program Through a Quasi-Experimental Study. *Risk management and health care policy*, 2024; 17: 101-111. <https://doi.org/10.2147/RMHP.S446704>
4. Nofal A., Alfayyad I., Khan A., Al Aseri Z., Abu-Shaheen A. Knowledge, attitudes, and practices of emergency department staff towards disaster and emergency preparedness at tertiary healthcare hospital in central Saudi Arabia. *Saudi medical journal*, 2018; 39(11): 1123-1129. <https://doi.org/10.15537/smj.2018.11.23026>
5. Abu Hasheesh M. O. Jordanian Nurses' Perceived Disaster Preparedness: Factors Influencing Successful Planning. *The Scientific World Journal*, 2023: 5473777. <https://doi.org/10.1155/2023/5473777>
6. Fletcher K. A., Reddin K., Tait D. The history of disaster nursing: from Nightingale to nursing in the 21st century. *JRN*, 2022; 27(3): 257-272. <https://doi.org/10.1177/174498712111058854>
7. World Health Organization and International Council of Nurses (2009). *ICN Framework of Disaster Nursing Competencies*. Geneva, Switzerland: ICN, 2009.
8. Perihanoglu G. M., Karaman H. Temporal And Spatial Analysis Of Flooding And Landslide Disasters In Turkey For Period 1960-2018. *Journal of Anatolian Environmental and Animal Sciences*, 2020; 5(2): 146-153. <https://doi.org/10.35229/jaes.682827>
9. Harmanci Seren A. K., Dikeç G. The earthquakes in Turkey and their effects on nursing and community health. *International nursing review*, 2023; 70(3): 262-265. <https://doi.org/10.1111/inr.12851>

10. Rizqillah A. F., Suna J. Indonesian emergency nurses' preparedness to respond to disaster: A descriptive survey. *Australasian emergency care*, 2018; 21(2): 64–68. <https://doi.org/10.1016/j.auec.2018.04.001>
11. Taskiran G., Baykal U. Nurses' disaster preparedness and core competencies in Turkey: a descriptive correlational design. *International Nursing Review*, 2019; 66: 165–175.
12. Inal E. Altıntaş K. H., Doğan N. General disaster preparedness beliefs and related socio-demographic characteristics: The example of Yalova University, Turkey. *Turkish Journal of Public Health*, 2019; 17(1): 1-15. <https://doi.org/10.20518/tjph.381667>
13. Şentuna B., Çakı F. Balıkesir Örneğinde Bir Ölçek Geliştirme Çalışması: Yerli Sosyal Sermaye Ölçeği (YSSÖ). *İnsan Ve Toplum Bilimleri Araştırmaları Dergisi*, 2020; 9(3): 2039-2061. <https://doi.org/10.15869/itobiad.726159>
14. Tercan B., Şahinöz S. "Nurses' Perceived and Actual Preparedness for Disasters". *IJHSRP*, 2021; 6(2): 158-167. Doi:10.33457/ijhsrp.764850
15. Dikmenli Y., Yakar H., Konca A. S. Development of Disaster Awareness Scale: A Validity and Reliability Study. *Review of International Geographical Education Online*, 2018; 8(2): 206-220.
16. Çelik F. Türk Kızılayı' nda çalışan hemşirelerin afetlere hazırlanış durumları. İstanbul Üniversitesi, Sağlık Bilimleri Enstitüsü, Halk Sağlığı Hemşireliği Ana Bilim Dalı Yüksek Lisans Tezi, İstanbul, 2010.
17. Sançar B., Cüceler S., Özcanarlan N., Özcanarlan F. Depremzedelere Bakım Veren Hemşirelerin Deneyim, Duygu ve Düşüncelerinin Belirlenmesi: Nitel Bir Çalışma. *Journal of Nursology*, 2024; 27(1): 38-46.
18. Korkmaz E., Hacıdursunoğlu Erbaş D., Azizoğlu H., İlbey Koç B., Eti Aslan F. Can a Nurse in an Earthquake Help in a Disaster? Experiences on the 2023 Pazarlık Earthquake. *Kocaeli Medical Journal*, 2023; 12(3): 395-401.
19. Republic of Türkiye Health of Ministry (2023). 2023 Year Performance Program. Retrieved: https://sgb.saglik.gov.tr/Eklenti/44984/0/2023performansprogramiv5pdf.pdf?_tag1=C91FBCC139F732CD9394130B060E2E611698AB94, (March 28, 2024).
20. Erdoğan S., Nahcivan N. Esin N. *Hemşirelikte Araştırma: Süreç, uygulama ve kritik*. Nobel Tıp Kitabevleri: İstanbul, 2014.
21. Maeda T, Kotera S, Matsuda N, Huebner CA. Developing a scale to measure Japanese nurses' individual readiness for deployment to disasters. *Nurs Health Sci.*, 2018; 20: 346–354. <https://doi.org/10.1111/nhs.12572354M> AEDAET AL.
22. Wikipedia (This page was last edited on 19 January 2024, at 09:11 (UTC)) Criterion validity. Ulaşım Adresi: https://en.wikipedia.org/wiki/Criterion_validity Ulaşım Tarihi: 02.04.2024.
23. Zakariya YF. Cronbach's alpha in mathematics education research: Its appropriateness, overuse, and alternatives in estimating scale reliability. *Front. Psychol.*, 2022; 13: 1074430. doi: 10.3389/fpsyg.2022.1074430
24. Kılıç S. Cronbach'ın Alfa Güvenirlik Katsayısı. *Journal of Mood Disorders (JMOOD)*, 2016; 6(1): 47-8.
25. Birmingham City University, Centre for Academic Success (2017) Statistical Methods – Scale reliability analysis with small samples. Ulaşım Adresi: https://www.open-access.bcu.ac.uk/6077/1/_staff_shares_storage%20500mb_Library_ID112668_Stats%20Advisory_New%20Statistics%20Workshops_17ReliabilityAnalysis_Re

Şenay AKGÜN, Duygu ÖZTAŞ, Funda ÖZPULAT, Yeşim ÇETİNKAYA ŞEN. The Adaptation of the Disaster Nursing Readiness Evaluation Index for Nurses in Türkiye. *Int. Arch. Integr. Med.*, 2024; 11(9): 1-11.

liabilitySmallSamples3.pdf Ulaşım
Tarihi: 02.04.2024.