

The Correlation Between Self-Efficacy and Preparedness of Community Health Center Nurses in Disaster Management Efforts

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Abstrak

Indonesia adalah negara rawan bencana dilihat dari aspek geografis, klimatologis dan demografis. Letak geografis Indonesia di antara dua benua dan dua samudra menyebabkan Indonesia mempunyai potensi yang tinggi dalam perekonomian sekaligus rawan dengan bencana. Kejadian bencana selalu akan meninggalkan dampak yang merugikan baik berupa kerugian fisik, psikologis maupun materil. Sebagai barisan pertama dalam merespon bencana, perawat harus mengerti tentang peran mereka dalam manajemen bencana dan kesiapsiagaan. Perawat bertanggung jawab untuk mempersiapkan diri untuk memperoleh pengetahuan dan keterampilan (kompetensi) yang dibutuhkan dalam merawat para korban bencana serta mempersiapkan untuk mencapai kesiapan penanganan bencana di masa mendatang. Tujuan penelitian ini adalah untuk menganalisis hubungan antara efikasi diri dan kesiapsiagaan perawat puskesmas dalam upaya penanggulangan bencana di Kabupaten Lombok Utara. Peneliti menggunakan desain deskriptif analitik dengan pendekatan cross-sectional. Jumlah populasi target adalah perawat Puskesmas sebanyak 30 orang dengan teknik sampling purposive sampling. Instrumen penelitian yang digunakan berupa kuesioner yang telah baku. Analisis uji yang digunakan yaitu univariat dan bivariat menggunakan uji Korelasi spearman rho. Hasil Penelitian didapatkan nilai signifikansi $\alpha = <0,05$ pada variabel, yaitu kesiapsiagaan bencana ($p=0,032$), yang artinya hipotesis penelitian diterima. Hal ini menunjukkan bahwa terdapat korelasi antara variabel kesiapsiagaan bencana dengan efikasi diri perawat di Puskesmas dalam menghadapi bencana. Hubungan kuat antara kesiapsiagaan bencana dan efikasi diri perawat di Puskesmas mempertegas bahwa peningkatan kesiapsiagaan melalui pelatihan dan simulasi akan berdampak langsung pada keyakinan perawat dalam menghadapi situasi darurat.

Kata Kunci : Bencana; Efikasi diri; Gempa bumi; Kesiapsiagaan; Perawat; Tsunami

Abstract

Indonesia is a disaster-prone country from a geographical, climatological, and demographic perspective. Its location between two continents and two oceans gives Indonesia high economic potential, yet also makes it vulnerable to disasters. Disasters always leave detrimental impacts, whether physical, psychological, or material. As the first line of response in a disaster, nurses must understand their role in disaster management and preparedness. Nurses are responsible for preparing themselves to gain the necessary knowledge and skills (competencies) to care for disaster victims and to achieve readiness for future disaster management. The purpose of this study is to analyze the correlation between self-efficacy and the preparedness of community health center nurses in disaster management efforts. The researcher used a descriptive analytical design with a cross-sectional approach. The target population was 30 community health center nurses, selected using a purposive sampling technique. The research instrument used was a standardized questionnaire. The statistical tests used were univariate and bivariate analyses with the Spearman's rho correlation test. The significance value for the disaster preparedness variable was found to be $\alpha = <0.05$ ($p=0.032$), meaning the research hypothesis was accepted. This indicates that there is a correlation between the variable of disaster preparedness and the self-efficacy

of nurses in facing disasters. A strong correlation between disaster preparedness and self-efficacy among community health center nurses confirms that improving preparedness through training and simulations will directly impact nurses' confidence in handling emergency situations.

Keywords: Disaster; Self-efficacy; Earthquake; Preparedness; Nurse; Tsunami;

INTRODUCTION

Indonesia is a disaster-prone country from a geographical, climatological, and demographic perspective. Its location between two continents and two oceans gives Indonesia high economic potential, yet also makes it vulnerable to disasters (BNPB, 2012). The various disasters that occur, such as floods, earthquakes, tsunamis, landslides, and volcanic eruptions, cause loss of life, destruction of property, economic decline, and environmental damage. The rate of environmental degradation and damage remains a threat to many regions, leading to events like floods and landslides. Furthermore, the impact of global climate change significantly affects Indonesia's thousands of large and small islands (BNPB, 2012).

Lombok Island is the most vulnerable to earthquakes and tsunamis. It is located near a subduction zone where two of the world's active tectonic plates, the Indo-Australian Plate and the Eurasian Plate, meet. This subduction zone is a major source of tsunamis that could hit the southern part of the island. Additionally, a back-arc fault is a primary source of local tsunamis off the northern coast of Lombok (Widyantoro & Puspita, 2018). Regionally, the damage and losses from the 2018 earthquake in West Nusa Tenggara were most significant in North Lombok Regency, reaching over 2.7 trillion rupiah. In West Lombok Regency, it reached over 1.5 trillion-rupiah, East Lombok 417.3-billion-rupiah, Central Lombok 174.4 billion rupiah, and Mataram City 242.1 billion rupiah. A total of 1,353 people were injured, with 783 having serious injuries and 570 with minor ones. North Lombok had the highest number of injuries, with 640 people, as it was the most affected area due to its proximity to the 7 SR epicenter (BNPB, 2018).

The high incidence of disasters necessitates preparedness in disaster management to reduce the impact of the disasters themselves. One way to mitigate the impact of disasters is to optimize prevention and preparedness efforts. The current phenomenon is that most working nurses do not feel confident in their ability to respond to major disaster events. Nurses with a high level of self-efficacy always see obstacles as opportunities rather than threats (Manojlovich, 2005). High self-efficacy influences good clinical performance, allowing nurses to provide high-quality care that leads to satisfactory patient outcomes. This not only improves the nurse's performance but also the performance of the organization they work for (Joy, 2015).

Since the era of Florence Nightingale, nurses have been involved in several roles in disaster management (Veenema et al., 2016). Today, nurses' competencies in disaster management include the ability to perform assessments, prioritize, communicate, collaborate, and think critically to make crucial

decisions in emergency situations (Putra, 2011). Ensuring nurses' readiness to face future disasters is very important, as disasters, especially natural ones, often begin without a specific warning (Wallis, 2013). As the first line of response in a disaster, nurses must understand their role in disaster management and preparedness (Desbiens, 2015). Nurses are responsible for preparing themselves to gain the necessary knowledge and skills (competencies) to care for disaster victims and to achieve readiness for future disaster management (WHO, 2014). A study by Yamamoto (2013) on the development of disaster nursing in Japan revealed that disaster management is a domain of nursing discipline. Based on the experience of Japanese nurses, they have facilitated the development of networks and collaboration among disaster-related organizations. As a result, Japan, a country with a high level of disaster vulnerability, has long since started disaster nursing education in undergraduate and graduate programs, as well as providing ongoing training for nursing professionals (Yamamoto, 2013).

Although the role of nurses in disaster mitigation and response at the primary care level is crucial, and several studies have demonstrated that self-efficacy is closely related to preparedness and response capabilities among nursing personnel, most recent research has focused on nursing students, hospital nurses, or community training programs rather than primary health care (Puskesmas) nurses who work directly in post-disaster areas. Intervention and survey studies conducted in community settings have confirmed the effectiveness of Public Health Nursing-based training in enhancing community capacity, as well as the positive correlation between disaster-response self-efficacy and perceived preparedness among specific populations of students or nurses. However, empirical evidence that specifically examines the correlation between self-efficacy and preparedness among Puskesmas nurses in post-disaster areas (e.g., Lombok) remains scarce. Therefore, research targeting this population is essential to understand the extent to which self-efficacy influences the preparedness of Puskesmas nurses in post-disaster settings and to design more contextually appropriate training interventions. Therefore, the author is interested in conducting a study to analyze the correlation between self-efficacy and the preparedness of community health center nurses in disaster management efforts (Sofyana, et al, 2024).

METHODS

This study employed a non-experimental, correlational research design with a descriptive-analytic, cross-sectional approach to determine the correlation between the self-efficacy and preparedness of community health center nurses in disaster management efforts. The study was conducted at one community health center (Puskesmas) in North Lombok Regency, which serves as a primary health care facility and functions as a referral center at the district level. The sample for this study consisted of all 30 nurses working at a community health center in North Lombok Regency. The sampling technique used was total sampling, selecting a sample that met the researcher's criteria and

fulfilled the inclusion criteria. The inclusion criteria for respondents were: a) actively working nurses; b) working directly with patients; c) a valid Nurse Registration Certificate (STR); and d) willing to participate. The exclusion criteria were: a) nurses who were sick or on leave during the study; and b) nurses who were on duty elsewhere or were pursuing education outside the community health center.

This study used three questionnaires: a demographic questionnaire, the General Self-Efficacy (GSE) scale, and the Disaster Preparedness Evaluation Tool Indonesian Version (DPET-I). The General Self-Efficacy (GSE) questionnaire was used to assess the self-efficacy of the nurses. The GSE has been translated into 33 languages, including Indonesian. This instrument consists of 10 questions with a 4-point Likert scale ranging from 1 to 4. Respondents were given scores as follows: strongly disagree (1), disagree (2), agree (3), and strongly agree (4). Interpretation was determined by the mean score: a score lower than the mean indicated low self-efficacy, while a score higher than or equal to the mean indicated high self-efficacy (Duggleby, Williams, Gosh, Moquin, Ploeg, Markle-Reid, Peacock, 2016).

The GSE questionnaire has been found to be reliable with a Cronbach's alpha of 0.843 in the Indonesian population (Widowati & Raushanfikri, 2020). The disaster preparedness measurement tool used in this study was the Indonesian version of the Disaster Preparedness Evaluation Tool (DPET-I) (Nugroho et al., 2017). This questionnaire has 46 items, consisting of 25 questions to assess preparedness during the preparation phase (items 1-25), 15 questions for the mitigation phase (items 26-40), and 6 questions for the evaluation phase (items 41-46). The DPET questionnaire uses a Likert scale with a score range from 1 to 6. The answer choices are: strongly agree (SA) scored 6, agree (A) scored 5, somewhat agree (SWA) scored 4, somewhat disagree (SWD) scored 3, disagree (D) scored 2, and strongly disagree (SD) scored 1. The average total score is calculated based on all items (Nygaard et al., 2016). Preparedness categories are determined by the mean score, divided into three parts: a mean score of 1-2.99 is considered low, 3-4.99 is moderate, and 5-6 is high (Thobaity, 2015). The reliability score of the DPET-I (Indonesian version) has a Cronbach's alpha of 0.88 (Setyawati, Lu, Liu, Liang, 2020). Univariate analysis was used to determine the frequency of each variable, while for the bivariate test, the Spearman's rho correlation test was used.

RESULTS

Based on the statistical analysis, the respondent characteristics data show that the majority of respondents were female (60%), aged 26–35 years (70%), worked in the Emergency Room (46.7%), had a Diploma in Nursing (D3 Keperawatan) as their highest level of education (56.7%), and had more than 5 years of work experience (73.3%) (Table 1).

Table 1. Characteristics of Nurse Respondents at Community Health Center in North Lombok Regency in 2025 (n = 30)

Characteristics	Frequency	%
Age* (years)		
26 – 35 (Early Adulthood)	21	70
36 – 45 (Late Adulthood)	6	20
46 – 55 (Early Senior)	1	3.3
56 – 65 (Late Senior)	2	6.7
Gender		
Male	12	60
Female	18	40
Work Unit		
Emergency Room	14	46.7
General Polyclinic	13	43.3
Inpatient	3	10
Highest Education		
Diploma	17	56.7
Bachelor	13	43.3
Work Experience		
< 3 years	2	6.7
3 – 5 years	6	20
>5 years	22	73.3

The frequency distribution of disaster preparedness among nurses at Community Health Center in North Lombok Regency can be seen in the following table:

Table 2. Frequency Distribution of Disaster Preparedness among Nurses at Community Health Center in North Lombok Regency in 2025 (n = 30)

Variable	n	%
Disaster Preparedness		
Low	0	0
Moderate	19	63.3
High	11	36.7

Based on Table 2, the majority of respondents (63.3%) had a moderate level of disaster preparedness.

The frequency distribution of nurses' self-efficacy in facing disasters at Community Health Center in North Lombok Regency can be seen in the following table:

Table 3. Frequency Distribution of Nurses' Self-Efficacy in Facing Disasters at Community Health Center in North Lombok Regency in 2025 (n = 30)

Variable	n	%
Self-Efficacy		
Low	10	33.3
High	20	66.7

Based on Table 3, the majority of respondents (66.7%) had a high level of self-efficacy in facing disasters.

Table 4. Cross-Tabulation of Dependent and Independent Variables for Nurse Respondents at Community Health Center in North Lombok Regency in 2025 (n = 30)

No.	Variable	Self-Efficacy		Total
		High Self-Efficacy	Low Self-Efficacy	
1.	High Preparedness	10	1	11
	Moderate Preparedness	10	9	19
	Total	20	10	30

Based on Table 4, almost all (91%) of the respondents with high disaster preparedness rated their self-efficacy as high in facing disasters, and the majority (52.7%) of respondents with moderate disaster preparedness also rated their self-efficacy as high in facing disasters.

Table 5. Bivariate Analysis of Dependent and Independent Variables for Nurse Respondents at at Community Health Center in North Lombok Regency in 2025 (n = 30)

No.	Variable	Self-Efficacy
		<i>p value</i>
1.	Preparedness	0,032*

*.Correlation is significant at the 0.05 level (2-tailed).

Based on the results of the bivariate analysis in Table 5, a significance value of $\alpha = <0.05$ was obtained for the variable of disaster preparedness ($p=0.032$), which means the research hypothesis is accepted. This indicates that there is a correlation or correlation between the variable of disaster preparedness and the self-efficacy of nurses at Community Health Center in North Lombok Regency in 2025 in facing disasters.

DISCUSSION

The findings of this study reveal a correlation or correlation between disaster preparedness and the self-efficacy of nurses at the Tanjung Community Health Center in 2025 in facing disasters. This result aligns with findings from a study in the coastal area of Jember, which also found a significant positive correlation between nurses' self-efficacy and their preparedness for earthquakes and tsunamis ($p = 0.008$, correlation coefficient $r = 0.619$). Higher self-efficacy was associated with higher preparedness for disasters (Yunanto, et al, 2023). Additionally, another study in Kendari on community health center nurses also found a significant correlation between personal self-efficacy and flood disaster preparedness ($p < 0.001$, $r \approx 0.63$) (Wurjatmiko, et al, 2018).

According to Bandura (2006), confidence in one's own abilities makes nurses more likely to apply knowledge and emergency procedures confidently during a disaster, which is reflected in higher preparedness scores. Empirical studies show the mediating role of efficacy in reducing the effects of anxiety and increasing willingness to work (Li, et al, 2024). The potential mechanisms underlying this correlation include: self-efficacy enhances motivation and initiative during training and provides the mental readiness to take action in emergencies; it also encourages nurses to proactively seek information, participate in drills and simulations, and prepare necessary resources. Training and professional experience frequently emerge as strong predictors of self-efficacy in recent studies. For example, a study in Yogyakarta found that disaster training experience had a strong positive correlation with the self-efficacy of nurses in Emergency and ICU units ($r = 0.65$, $p < 0.001$), and work experience was also significantly correlated (Vranada, et al, 2024).

On the other hand, although a significant correlation exists, aspects such as formal education, gender, and length of service in some studies do not always show a strong correlation with self-efficacy or preparedness. For instance, in a study in Padang, preparedness levels varied based on the workplace (hospital type), particularly in sub-dimensions like isolation, quarantine, decontamination, psychological issues, and communication, but not based on education (Winarti, et al, 2024). This indicates that organizational context, facilities, training opportunities, and direct experience may be more important than formal educational background alone.

CONCLUSION

The need for continuous training programs, disaster simulations, and organizational support at Community Health Centers to improve both preparedness and self-efficacy among nurses. By enhancing these two aspects, it is hoped that the disaster response at the primary care level will be more optimal, thereby minimizing the risk of casualties and the impact of disasters on the community.

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