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SELF-EFFICACY AND EMERGENCY NURSES' PREPAREDNESS IN INDONESIA

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preparedness****Correspondence to Author:****Guruh Suprayitno***Student of Nursing Masters Study
Program, Faculty of Medicine,
Universitas Brawijaya, Malang,
Indonesia***ABSTRACT**

Purpose: This study aims to analyze the relationship of self-efficacy with the preparedness of nurses IEDNA members in dealing with natural disasters in Indonesia.

Methods: This study is an analytical observational study with a cross-sectional approach. The study population is a member of the Indonesian Emergency and Disaster Nurses Association (IEDNA). The sample of this study was 107 nurses, sampled by using random cluster sampling. Data were analyzed using Fisher's test with a significance level of 95%.

Results: Out of 510, 107 nurses became respondents in the study. The gender of the majority of respondents was male (56.1%). As many as 46.7% of respondents were dominated by respondents aged 31-40 years, 34.6% of respondents worked in the Emergency Department. Most respondents (41.1%) had less than one year of experience as emergency nurses. The result of self-efficacy test was p-value = 0.001 (p < 0.05).

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The majority of emergency nurses (94%) in Indonesia have good self-efficacy in dealing with disasters, although some do not have experience in disaster management. This is because emergency nurses in Indonesia often attend disaster management training.

Conclusion: This study concludes that, generally, the preparedness phase was good, and there was a significant relationship between self-efficacy and nurse preparedness in the face of disasters.

INTRODUCTION

Disasters are global issues. The complexity of disaster issues requires disaster management in the form of proper planning and structuring so that it can be implemented in an integrated manner. Asia is experiencing the highest number of natural disasters, most likely due to its size and vulnerability. In 2018, Indonesia had the highest death toll in the world due to earthquakes and tsunami, amounting to 2,256. According to the Head of the Center for Information and Public Relations of the National Agency for Disaster Management (BNPB), there had been a series of natural disasters in Indonesia in 2018, starting from the earthquakes in West Nusa Tenggara and Bali in August 2018¹. Meanwhile, in September 2018, there was also an earthquake followed by a tsunami and liquefaction that struck 4 regions in Central Sulawesi, i.e., Palu City, Donggala Regency, Sigi Regency, and Parigi Moutong Regency, which were directly affected by the disaster². In addition, flash floods also hit Jayapura, Papua, in March 2019³.

Indonesia, in recent years, has changed its disaster management strategy, from emergency response and preparedness to disaster management preparedness. Therefore, participation and responsibilities across sectors, including government agencies, non-governmental organizations, communities, and health service providers, especially nurses, are very important^{4,5}. Moreover, it has

been widely reported that nurses played an important role in disaster preparedness around the world⁶.

According to Melnikov, Itzhaki, and Kagan (2014)⁷, nurses' preparedness is influenced by three factors, namely, their knowledge related to the disaster, realistic attitude towards disaster assessment, and their self-efficacy to increase preparedness. Self-efficacy is an individual's confidence that they have the ability to carry out certain tasks well. In preparedness, self-efficacy is a very determinant of a person's independence in planning and preparing for disaster. In addition to self-efficacy, according to Chen et al. (2017)⁸, nurses' preparedness will be better if their knowledge and education related to preparedness are also categorized as good. So, the knowledge factor is inseparable from nurses' preparedness. Research conducted by Novrianda and Hermalinda (2019)⁹ explained that knowledge based on evidence-based practice would influence nurses' attitudes for the better.

Further, research by Park and Kim (2017)¹⁰ stated that experience in disaster management, which was followed by disaster-related knowledge of 25.6%, could have a significant influence on disaster nurses. According to Martono et al. (2019)¹¹, the results of a survey of 1,341 Indonesian nurses showed that the average scores of the preparedness in dealing with disasters, the ability to recover from disasters, and the evaluation of disaster victims were 3.13, 2.53, and 2.46, respectively. These results were also in line with the research results of Hindriyastuti et al. (2019)¹², which stated that nursing students were less prepared in facing disasters. In general, nurses surveyed in the study were less prepared for disaster management and did not understand their role both during the disaster preparedness phase and in dealing with disaster situations. Thus, it can be said that disaster management is primarily influenced by the preparedness of human resources.

Research by Labrague et al. (2016)¹³ revealed that nurses were not adequately prepared for disaster management, or they did not understand the protocol for disaster management in their workplace. Research by Oztekin et al. (2016)⁴ stated that there were a number of

things that made nurse resources suboptimal, including feelings of being unable to respond in various disaster situations, awareness of disaster vulnerability in the workplace that was coupled with a lack of confidence in the ability to handle the disaster properly, and suboptimal evaluation of the level of preparedness of the health care system in hospitals. Another influential factor was nurses' lack of confidence in their ability to respond effectively to disaster events^{13 14}. Nurses have several specializations, one of which is specialization in the emergency department and disaster.

Good disaster management can reduce the loss of lives and properties and other losses¹⁵. Nurses should understand this, although sometimes nurses do not understand their role either during the disaster preparedness phase or in dealing with post-disaster situations¹¹. The purpose of this study is to analyze the relationship of self-efficacy with the preparedness of emergency and disaster nurses of the Indonesian Emergency and Disaster Nurses Association (IEDNA) in Indonesia.

METHODS

Research design

This research is analytical-observational with a cross-sectional approach¹⁶. The participants were nurses working at the ED and were members of the Indonesian Emergency and Disaster Nurses Association (IEDNA). This research involved six Indonesian provinces affected by natural disasters since 2004 until 2019, namely, the provinces of Aceh, Banten, Special Region of Yogyakarta, Central Sulawesi, West Nusa Tenggara, and Papua. The data collection employed Google Forms, and prospective respondents, sampled by the probability sampling technique¹⁷, were required to fill out the forms of consent before completing the questionnaires. The inclusion criteria of this research were that the nurses were working or had worked at health care institutions or education institutions in the field of emergency and that they were registered as members of the IEDNA. This survey was previously

performed on several IEDNA nurses in East Java to ensure the instrument reliability.

Research instruments

Research data were collected by two questionnaires of the self-efficacy, and preparedness of IEDNA nurses in facing disasters in Indonesia. The 21-question self-efficacy questionnaire was adopted from "Disaster response self-efficacy scale"¹⁸ with a Cronbach's alpha of 0.744, which used a five-point Likert scale with the following criteria: 5 for "strongly confident," 4 for "confident," 3 for "less confident," 2 for "not confident," and 1 for "strongly not confident." Lastly, the 33-question nurses' preparedness questionnaire adopted "the Japanese Disaster Nursing Readiness Evaluation Index" developed by Maeda, Kotera, Matsuda, and Huebner, (2018)²⁰, using a four-point Likert scale with the following criteria: 4 for "always," 3 for "frequently," 2 for "occasionally," and 1 for "never." The last questionnaire was translated from English to Indonesian by a professional translator and expert in the field of disaster nursing, with a Cronbach's alpha of 0.739.

Statistical test

The statistical test for analyzing the relationship of self-efficacy to the preparedness of IEDNA nurses used a Fisher's exact test at a 95% significance level¹⁷.

Ethical considerations

This research was granted a letter of ethical feasibility from the Medical Research Ethics Committee of the Faculty of Medicine, Universitas Mataram, no. 33/UN18.F7/ETIK/2020.

RESULTS

Out of 510 nurses, there were 107 nurses who met the inclusion criteria and were sampled in this study. The results revealed that the majority of respondents (56.1%), as many as 60 respondents, were male, while the age of 50 respondents (46.7%) was in the range of 31 to 40 years.

The latest education level of 56.1% of respondents was a bachelor in nursing or bachelor in health science, while the marital status of most respondents was married, with a total of 78 respondents (72.9%). Then, as many as 37

respondents (34.6%) worked in the emergency department unit (Table 1).

The majority of emergency nurses (73%) in Indonesia have attended disaster management training and have experience as a disaster health team (58%) (Table 2).

Table 1 Characteristics of demographic

No	Characteristics	f	%
1	Gender		
	Male	60	56.1
	Female	47	43.9
	Total	107	100.0
2	Age		
	< 30 years	36	33.6
	31 - 40 years	50	46.7
	41 - 50 years	17	15.9
	> 50 years	4	3.7
	Total	107	100.0
3	The highest level of education attained		
	Three-year vocational nursing education	33	30.8
	Bachelor of Nursing/ Bachelor of Health Science	60	56.1
	Master degree in nursing or health science	14	13.1
	Total	107	100.0
4	Marital status		
	Married	78	72.9
	Single	29	27.1
	Total	107	100.0
5	Work Unit		
	Emergency departments	37	34.6
	Intensive Care Unit/High Care Unit	10	9.3
	Operating theater	2	1.9
	Renal Dialysis Unit	1	0.9
	Educational Institution	19	17.8
	Community health center (<i>puskesmas</i>)	11	10.3
	Others	27	25.2
	Total	107	100.0

Table 2. The experience of disasters management training and disaster health team

No	Characteristic	F	%
1	The experience of disasters management training		
	Yes	78	72.9
	No	29	29.1
	Total	107	100.0
2	The experience of disaster health team		
	Yes	62	57.9
	No	45	42.1
	Total	107	100.0

Table 3 shows that 91 respondents (93,8%) had good self-efficacy in dealing with natural disasters. Fisher's test results showed p value = 0.001 < α (0.05), so that statistically, there was a significant relationship between

self-efficacy and preparedness of emergency and disaster nurses in Indonesia. The strength of the relationship can be seen from the value of the Odds Ratio (OR).

Table 3. The Relationship between Self-efficacy with Emergency and Disaster Nurses' Preparedness in Indonesia

		Emergency Nurses' Preparedness				OR	p value
		Poor		Good			
		N	%	n	%		
Self-efficacy	Poor	5	50.0	6	6.2	15.167	0.001
	Good	5	50.0	91	93.8		
	Total	10	100.0	97	100.0		

DISCUSSION

The analysis showed that self-efficacy and emergency nurses' preparedness for natural disasters had a significant relationship. Self-efficacy is an individual's confidence in being able to carry out certain tasks well. In preparedness, self-efficacy is a very determinant of someone's independence in planning and preparing for disaster. Good self-efficacy can encourage nurses to be prepared to deal with disasters earnestly and responsibly⁷.

Self-efficacy acts as one of the key constructions that affect one's intention to prepare. An individual will have high self-efficacy if they have experience or have received training. In this study, 72.9% of nurses had received disaster preparedness training. Someone tends not to act if they feel that their competency is lacking, whereas individuals who have high self-efficacy will have a tendency to be more prepared to deal with disasters. Self-efficacy can increase the number of plans developed by an individual and increase the perseverance in implementing them (Herdwiyanti and Sudaryono, 2013)²¹.

Wurjatmiko, Zuhriyah, and Fathoni (2018)²² stated that the manifestations of nurses' self-efficacy related to disaster preparedness were 1) confidence to be able to identify disaster risks, disaster impacts, and health service needs during disasters, 2) confidence to be able to establish and formulate disaster nursing planning, 3) confidence to be able to take part in training and disaster simulation, 4) confidence to be able to establish early warning system, 5) confidence to be able to educate the public about disaster preparedness, 6) confidence to be able to evaluate preparedness and data of nurses who are ready to be mobilized in the event of a disaster.

A good level of knowledge will affect one's self-efficacy. Research conducted by Ahayalimudin, Ismail, and Saiboon (2012)²³ stated that the adequacy of knowledge and practice could illustrate a positive attitude in the involvement in disaster response. This certainly has a positive impact on self-efficacy. An individual's good self-efficacy can also be influenced by their workplace. This study found this fact in 34.6% of respondents who worked in the ED. Fry and Macgregor (2014)²⁴ revealed that emergency nurses had high self-efficacy because they often handled a large number of

patients so that when a disaster occurred, emergency department nurses had better preparedness.

Self-efficacy itself refers to personal factors because it can create a strong motivation for nurses to make preparations according to their roles and functions in certain work teams when a disaster occurs²⁵. A study stated that internal motivation to participate in preparedness activities will last longer and will make nurses always feel optimistic and resilient when they face difficulties when preparing for these activities²⁶.

Furthermore, a person's self-efficacy is influenced by several factors, such as mastery experience, representative experience, social persuasion, and physiological and emotional states. The results of this study indicated that 32.7% of nurses had work experience between 10-20 years. This was consistent with research conducted by Ainiyah, Ahsan, and Fathoni (2015)²⁷, which found that sufficient work experience (5-10 years) in the emergency room honed nurses' abilities in dealing with patients and cases so that they could give optimal care. According to Ansthoobar and Miellen (2013)²⁸, nurses' self-efficacy is influenced by experience, disaster training, gender, education level, and work culture in their respective workplaces. In addition, the results of this study showed that 57.9% of respondents had joined the health services in disaster management. Park and Kim (2017)¹⁰, in their research, said that experience in disaster management, which was followed by disaster-related knowledge of 25.6%, could have a significant influence on disaster nurses. Further, self-efficacy is also influenced by training that has been received by nurses. In this study, 72.9% of nurses had received disaster preparedness training. Experience and training will form a self-efficacy that will affect one's readiness. The self-efficacy illustrates the confidence in the effectiveness of behavior to increase preparedness.

CONCLUSION

In general, the level of nurses' self-efficacy for disaster preparedness was good. There was a significant relationship between self-efficacy and preparedness of emergency and disaster nurses of the Indonesian Emergency and Disaster Nurses Association (IEDNA). This study had limitations,

namely, data collection technique that used questionnaires from Google Forms, which sometimes made responses given by the respondents less real. Further research needs to be developed to increase the competency of nurses of IEDNA by having comprehensive training on disaster preparedness and to examine other factors that influence nurses' preparedness in facing disasters.

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CONFLICT OF INTERESTS

The authors declare that there is no conflict of interests.

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