



THE RELATIONSHIP BETWEEN KNOWLEDGE AND DISASTER PREPAREDNESS IN NURSING STUDENTS STIKES YATSI TANGERANG IN 2021

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Research Report

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ABSTRACT

Introduction: The occurrence of disasters in 2017-2021 reached 12,199 disasters consisting of floods, tornadoes, landslides, forest fires, earthquakes, abrasion, and volcanic eruptions. Many disasters have resulted in 4,851 deaths and 39,633 people missing and injured (BNPB, 2021). **Methods:** This research is a quantitative correlation study with a cross-sectional approach. The sampling technique used in this study was total sampling, which consisted of 335 respondents from nursing students at STIKes Yatsi, Tangerang. Data collection was done by distributing questionnaires. Data analysis using chi-square test. **Results:** The results showed that most female students had a good level of knowledge (55,2%) and preparedness (58,5%). The bivariate analysis results showed a significant relationship between knowledge and disaster preparedness $r = 0.016$ ($r < 0.05$). The study concluded that the better the student's knowledge, the better the disaster preparedness. **Conclusions:** The study found a relationship between knowledge and disaster preparedness in students.

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INTRODUCTION

Disasters can happen anywhere, anytime and the events cannot be predicted in a short time, therefore everyone must have knowledge about disasters, especially by understanding disaster preparedness.

Preparedness is a very important element to form a person who is strong in dealing with potential disasters. In order to initiate preparedness knowledge becomes a reference for identifying and understanding the context of disaster management. That is by recognizing knowledge about the ways to deal with situations that can lead to disasters.

Overall, the current condition of Indonesian citizens is still very vulnerable to such disaster threats. The community still does not have a high enough level of awareness of disasters. This lack of awareness can increase the risk of citizens to the threat of disaster. (Addiarto, 2019).

From the data on the frequency of disasters, Indonesia is a country that is prone to disasters. This is based on the reality that Indonesia is surrounded by 3 active tectonic plates, a row of active volcanoes as part of the ring of fire and the geographical location that the equator crosses. Besides that, hydrological conditions also greatly affect the formation of natural phenomena that can lead to

disasters such as hurricanes, flash floods and landslides (Theophilus Yanuarto et al., 2019).

In terms of units, topographic conditions have made Indonesia a very productive nation and has abundant natural resources. On the other hand, the distance between the plates is the way in which seismic earthquakes occur, the dynamic composition of volcanoes that have potential emission risks, and the range of tidal wave risk along the coastline (Mochamad, 2019).

In the last 20 years, the rate of disasters, both natural and non-natural, has increased very rapidly. The National Disaster Management Agency (BNPB) detailed that earthquakes, landslides, earthquakes, hurricanes, and flash floods are disasters that very often occur in the territory of Indonesia. In the event of a disaster, health workers are one of the main components that are needed, especially in responding to a crisis disaster to save a person's life to minimize the loss of life due to a disaster.

Disaster events in the period 2017-2021 reached 12,199 disasters consisting of floods, tornadoes, landslides, forest fires, earthquakes, abrasion, and volcanic eruptions. The large number of disaster events resulted in the death toll of 4,851 people, the missing and injured as many as 39,633 people (National Disaster Management Agency).

Based on the information data, it can be interpreted that natural disasters greatly disrupt the health and welfare of the community. This is one of the main factors that can affect survival, reduce mortality and improve people's welfare (Pourvakhshoori et al., 2017).

Based on information data from the National Regional Management Agency (BPBD) on March 21, 2021, it was recorded that the number of disaster events was 873 events, the dominant disaster events were floods followed by hurricanes and landslides. Natural disasters affected and displaced 4,138,853 people, while 277 people died and 12 were missing and 12,421 injured individuals. In addition to natural disasters, coinciding on April 13, 2020, the government declared Covid-19 a non-natural National Disaster welfare (BNPB, 2021).

Head of the Banten Regional Disaster Management Agency (BPBD, 2021) Nana Suryana said Pandeglang and Lebak were indeed prone to disasters at the end of this year. South Banten implies the geological conditions of the slopes, mountains that tend to landslide if there is high rainfall. Unlike Lebak and Pandeglang, other zones also have the potential for flooding, both from high rainfall and water flow. Flood-prone areas are Tangerang Regency, Tangerang City and Serang. At the beginning of 2021 Tangerang experienced flooding so that there were 2,500 people, people who took refuge in mosques because the water level in their homes ranged from 30 - 120 cm. The flood reached 1 meter which is located behind the flow of Kali Ledug, Tangerang.

In addition, based on data from the Regional Disaster Management Agency Natural Disaster Hits Tangerang Area, 2021 of Tangerang Regency, there were 3 natural disasters that hit Tangerang Regency in the period January to February 2021. The disasters that occurred were hydrometeorological natural phenomena ranging from floods, landslides, and hurricanes. Based on data from the Tangerang Regency BPBD, which coincided on January 24, 2021, there was a flood disaster that submerged 1,000 hectares of rice fields in three villages, namely Tamiang, Kedaung and Gunung Kaler villages, Gunung Kaler District, 5 days after that, January 29, 2021, landslides also occurred. in Careng Village, Cisoka District, which damaged 3 houses and 2 of them were heavily damaged after they collapsed with a landslide.

Based on Law Number 24 of 2007 concerning Disaster Management. Referring to the disaster events above, information related to disaster preparedness is needed by everyone and the community. Preparedness can be in the form of training arrangements that can anticipate disasters through organizing and through appropriate and competent steps to reduce the negative impacts that will occur from disasters, both physical losses and life misfortunes.

One of the steps to deal with disasters is to increase disaster preparedness behaviour. Disaster preparedness is influenced by several factors including knowledge and attitudes, policies and guidelines, disaster emergency plans, disaster warning systems and resource mobilization (Theophilus Yanuarto et al., 2019).

Disaster instructions are needed in the form of preparation, socialization and through formal disaster reaction instructions, disaster early warning frameworks. Some of these are the premise of disaster-related information that must be known by individuals and the community.

Thus, nursing students are candidates for planned medical personnel who will serve the community, because nursing calls are adaptive and cover all conditions, not limited to providing nursing care in hospitals, but are also required to be able to work in conditions of emergency response to disasters. It is necessary to prepare for disaster conditions both in terms of knowledge and skills for nursing students in accordance with the competencies set by the World Health Organization (WHO) and The International Council of Nurses (ICN) in 2009.

Disasters are frequent and threaten many people in the world, accompanied by the need to prepare disaster nurse (Usher & Mayner, 2011). Nurses must know and master knowledge and skills needed in the event of a disaster. There are 80% of nurses who volunteer to volunteer when a disaster occurs but have no previous experience in disaster response, nurses must be competent to deal with situations in the event of a disaster. In various forms of disasters, especially on a large scale, nursing students want to participate (Achora & Kamanyire, 2016). In the longer term, nursing students are key in preparing expert resources in disaster management as nurses. So, it is necessary to further identify the skills required by nursing students.

Trust in the organization or reaction to disaster management education has more influence on the support of health professionals in disaster management, age numbers and family safety. variables that affect these components are divided into 2, namely internal variables and certain external variables. Internal components include sexual orientation, time considerations, experience in dealing with disasters, disaster information, organizational involvement, involvement as volunteers, preparation and skills, godly beliefs. While the external variables considered are family support, college support, and types of general failure.

In 2017, Rahayu conducted a comparative study with students of the Nursing Science Program, Yogyakarta Muhammadiyah High School. The results of the search report stated that students' information about earthquake tremors was almost in the high category, but the level of readiness of

students for earthquake tremors was still low. (Puspita Kurniawati, 2015) conducted research on students of the Consideration Topography Study Program at Kanjuruhan College Malang in 2017 and found that the level of readiness was still lacking.

Several considerations regarding disaster preparedness information and disaster preparedness level have been carried out, but no important questions have analyzed the relationship between nursing student information and failure readiness level (Usher & Mayner, 2011).

Considers the information level of Australian nursing students to include 39 higher teaching. The results of the questions concluded that almost all respondents did not have adequate information about disaster preparedness, because 63% of respondents had never received counseling related to failure in college.

The emergence of this thought in general is that the level of information that almost covers the disaster is still lacking due to the components of human resources, time requirements, and costs. Furthermore, asking about the level of information on nursing students' almost preparedness should be done to get an idea of how much prepared nursing students are in dealing with crisis situations due to disasters.

The university is one that can play a role in disaster risk reduction exercises, and is obliged to educate the nation's life, and promote the welfare of the people through the application of science and innovation in society.

Thus, higher education plays a very important role in increasing the capacity of the community, including the student community, to carry out disaster prevention and mitigation (Lestari et al., 2018).

MATERIALS AND METHODS

This research was conducted at the STIKes Yatsi Campus of Nursing S1 Study Program. The selection of this location was done because the research location was easily accessible by researchers and respondents could work together in

this research and to collect and obtain data it was time efficient.

Research time is the time span used for research implementation (Notoadmojo, 2021). The time of this research was carried out in March - August 2021 at the STIKes Yatsi Tangerang campus. The population in this study were students of STIKes Yatsi Nursing Study Program level 2, 3, 4 totalling 335 students. The sample in this study used total sampling where all the population was used as a sample, which amounted to 335 respondents.

The instrument used in this study is a questionnaire consisting of several questions of the type of multiple-choice question and a check list which is expected to be selected according to the respondent's condition. The questionnaire used was derived from making questions related to the theoretical framework through a modification of questions by Rana in 2019, then a re-validity test was carried out for nursing students at STIKes Yatsi Tangerang. This study aims to determine the relationship between knowledge and disaster preparedness in STIKes Yatsi Tangerang students.

The results of the validity test on the disaster-related knowledge variable consist of 24 questions and the number of valid questions is 24 items with the calculated r value between 0.403 - 0.875 with an r table value of 0.3610, thus the instrument is said to be valid. The results of the validity test on the preparedness variable consist of 5 questions with a calculated r value of 0.423 - 0.807 with an r table value of 0.3610 thus the instrument is said to be valid. The results of the reliability test on the disaster-related knowledge questionnaire have Cronbach's alpha results of 0.937, it can be concluded that the instrument is declared reliable and trustworthy. Meanwhile, the reliability test results on the preparedness questionnaire have Cronbach's alpha results of 0.802, so it can be concluded that the instrument is declared reliable and trustworthy.

RESULTS

1. Characteristics of Respondents Demographic Data

The results of the characteristics of the demographic data in this study describe the distribution of respondents based on age, gender, level or class, disaster nursing courses, seminars or training, simulation experiences.

Table 1. Frequency Distribution of Demographic Data (n=335)

Characteristics of Demographic Data	f	%
Gender		
Man	42	12,5 %
Woman	293	87,5 %
Total	335	100,0 %
Age		
< 20 years	33	9,9 %
20 – 29 years	302	90,1 %
Total	335	100,0 %

Characteristics of Demographic Data	f	%
Level / Class		
Level 2 Nursing	115	34,3 %
Level 3 Nursing	153	45,7 %
Level 4 Nursing	67	20,0 %
Total	335	100,0 %
Disaster-Related Courses		
Ever get	211	63,0 %
Never got	124	37,0%
Total	335	100,0 %
Workshop		
Ever followed	128	38,2 %
Never followed	207	61,8%
Total	335	100,0%
Simulation Experience		
Ever followed	226	67,5 %
Never followed	109	32,5 %
Total	335	100,0 %

Based on demographic data, the results showed that the majority of respondents were women, namely 293 respondents (87.5%), the majority of respondents aged 20-29 years were 302 respondents (90.1%), the majority of respondents were level 3 Nursing as many as 153 respondents (45, 7%), the majority of

respondents had received courses related to disaster as many as 211 respondents (63.0%), the majority of respondents had never attended seminars or training as many as 207 respondents (61.8%), and the majority of respondents had attended disaster simulations as many as 226 respondents (67.5%).

2. Univariate Analysis

Table 2. Frequency Distribution of Student Knowledge Levels About Disasters at STIKes YATSI Tangerang in 2021 (n=335)

Category	f	%
Disaster Preparedness Level		
Well		
Not enough	196	58,5 %
	139	41,5 %
Total	335	100,0 %

Based on Table 2 the results of the frequency distribution above, it is found that most of the respondents have a good level of knowledge about disasters as many as 185

respondents (55.2%) while respondents who have a low level of knowledge about disasters are 150 respondents (44.8%).

Table 3. Frequency Distribution of Nursing Students Preparedness Levels in Facing Disasters at STIKes YATSI Tangerang in 2021 (n=335)

Category	f	%
Disaster Knowledge Level		
Well	185	55,2 %
Not enough	150	44,8 %
Total	335	100,0 %

Based on Table 3 the results of the frequency distribution above, it is found that most of the respondents have a good level of disaster preparedness, namely 196 respondents

(58.5%), while respondents who have a poor level of disaster preparedness are 139 respondents (41.5%).

3. Bivariate Analysis

Data Normality Test

Table 4. Normality Distribution of Relationship Between Knowledge and Disaster Preparedness in Nursing Students STIKes Yatsi Tangerang in 2021 (n=335)

	N	Skewness		Kurtosis	
		Statistic	Std. Error	Statistic	Std. Error
U. Residual	335	0,050	0,133	-0,043	0,266
Valid	335				

From the analysis obtained data with normal distribution.

Chi Square Test Results

Table 5. Crosstabulation Relationship Between Knowledge and Disaster Preparedness in Nursing Students STIKes Yatsi Tangerang in 2021 (n=335)

Knowledge	Disaster Preparedness				Total	OR	P-Value
	Well		Not enough				
	f	%	f	%			
Well	119	35,5%	77	22,9%	196	58,5%	1,709 0,016
Not enough	66	19,7%	73	21,7%	139	41,5%	
Total	185	55,2%	150	44,8%	335	100%	

Based on the results of the cross tabulation between knowledge and disaster preparedness for STIKes Yatsi students in Tangerang, it was found that respondents who had a good level of knowledge with a good level of preparedness were 119 respondents (35.5%) and respondents who had a good level of knowledge with a low level of preparedness. as many as 77 respondents (22.9%). While respondents who have a low level of knowledge with a good level of preparedness are 66 respondents (19.7%) and respondents who have a low level of knowledge with a low level of preparedness are 73 respondents (21.7%). The results of the Chi-Square statistical test obtained p-value = 0.016 so that the p-value <0.05, which means that there is a significant relationship between knowledge and disaster preparedness in nursing students at STIKes Yatsi Tangerang. From the results of the analysis, the value of OR = 1.709 means that respondents who have a good level of knowledge about disasters have a chance of 1.709 times to carry out good disaster preparedness compared to respondents who have a low level of knowledge.

DISCUSSION

1. Description of Respondents Characteristics
Demographic Data by Gender

Based on the results of the analysis, it was found that most female respondents were more than male respondents, namely 293 respondents (87.5%), and male respondents were 42 respondents (12.5%) from a total of 335 respondents. This is in line with the results of research by (Al Khalailah et al., 2012) on the perception of nurses in Jordan on disaster

preparedness, where the proportion of female respondents is 61.4% more than male, namely 38.6% of the total 474 Registered Nurses. This is because the Registered Nurse works in a hospital or undergoing nursing education in Jordan the majority are male.

Demographic Data by Age

Based on the results of the analysis, it was found that most respondents aged 20-29 years were more than those aged <20 years, namely 302 respondents (90.1%), and 33 respondents (9.9%).

Age can affect a person's grasping power and mindset, increasing age is growing in a person's mindset and capture power so that more knowledge will be obtained. This is in line with (Rofifah, 2019) which examined the relationship between knowledge level and disaster preparedness at Diponegoro University based on the results of the study, the majority aged 20-19 years as many as 207 respondents (84.1%). In this study, age is not an absolute measure of the formation of the level of knowledge about disaster preparedness.

Demographic Data by Level or Class

Based on the results of the analysis, it was found that most respondents in Nursing level 3 were more than Level 2 and 4 Nursing, namely 153 respondents (45.7%), and 115 respondents (34.3%) and 67 respondents (20.0%). According to class is a group of people who carry out learning activities together, who receive instruction from the teacher.

Demographic Data Based on Disaster-Related Courses

Based on the results of the analysis, it was found that most respondents had received more disaster-related courses than had not received disaster-related courses, namely 211 respondents (63.0%) and 124 respondents (37.0%). In this study, researchers saw that there were variations in respondents' views on the types of disaster education that had been obtained at the STIKes Yatsi Tangerang Campus including Emergency Nursing, K3, PPGD. After reviewing the course modules for each of these courses, the researchers found that not all these courses taught general concepts of disaster.

This is in line with (Rofifah, 2019) which examined the relationship between knowledge level and disaster preparedness at Diponegoro University with the majority of 246 respondents having received courses related to disasters, namely 142 respondents (57.7%). And also in line with Duongg's (Shaw, 2017) research which examined the effect of implementing disaster education on emergency nurses in South Australia, where the number of respondents who had received as many as (68%).

According to the researcher, although the main task of nurses is to provide emergency assistance in the emergency room during the emergency phase, nurses also need to have basic knowledge of the concept of disaster that has been given since lectures on an ongoing basis in each nursing science study program. Knowledge of the concept of disasters that are vulnerable to occur in Indonesia is very important as a provision for individual student disaster preparedness against risks that are vulnerable to occur in the environment where they live. In Nepal, for example, disaster-related education provided to school students in Nepal provides information including disaster risk, earthquake risk in schools, post-earthquake damage, the importance of structural and technological preparations to maintain security due to earthquakes (Shaw, 2017).

Demographic Data Based on Seminar or Training

Based on the results of the analysis, it was found that most respondents had attended a seminar or training than those who had never attended a seminar or training, namely 128 respondents (38.2%) and 207 respondents (61.8%). Disaster training that has been followed includes disaster mitigation, disaster management seminars, CDC, and self-rescue simulations. This is in line with the research results of which examined the description of the

level of knowledge and application of disaster preparedness in UI nursing students, to 100 respondents, the majority had attended training as much as 71%.

Demographic Data Based on Disaster Simulation Experience

Based on the results of the analysis, it was found that most respondents had participated in more disaster simulations than those who did not participate in disaster simulations, as many as 226 respondents (67.5%), and 109 respondents (32.5%). The results of this study are in line with (Rofifah, 2019) which examined the relationship between knowledge level and disaster preparedness at Diponegoro University with 246 respondents, the majority of which were 210 respondents (85.4%). Disaster simulations provide learning through practice, identify individual roles in emergency situations, and facilitate critique that can identify problems in the planning process.

2. Univariate Discussion

Description of Nursing Students' Knowledge Levels About Disasters

Based on the results of the frequency distribution, it was found that most of the respondents had a good level of knowledge about disasters, as many as 185 respondents (55.2%) were while respondents who have a low level of knowledge about disasters are 150 respondents (44.8%).

The results of this study indicate that most respondents have a good level of knowledge about disasters. The results of this study are not in line with (Rofifah, 2019) 246 respondents, which shows a lack of knowledge as many as 130 respondents (52.8%). But this research is in line research which shows a good level of knowledge. The level of knowledge can be influenced by several factors including information from both formal and non-formal education such as training seminars and simulations.

Description of Nursing Students' Preparedness Levels in Facing Disasters

Based on the results of the frequency distribution, it was found that most of the respondents had a good level of disaster preparedness, namely 196 respondents (58.5%), while respondents who had a poor level of disaster preparedness were 139 respondents (41.5%).

The results of this study are not in line with research by Rahayu (2017) and Rana (2019), the results of research that the level of preparedness is still lacking, which is 173 respondents (70.3%). The results of this study

indicate that some respondents have equipment for dealing with disasters such as bags, clothes or blankets, cellphones, food and beverage reserves, first aid kits. In addition, most of the facilities for disaster preparedness equipment on campus include APAR (Light Fire Extinguisher), emergency exits, emergency stairs, gathering points, and emergency alarms.

3. Bivariate Discussion The Relationship Between Knowledge And Disaster Preparedness In Nursing Students STIKes Yatsi Tangerang

Based on the frequency distribution data, it was found that respondents who had a good level of knowledge with a good level of preparedness were 119 respondents (35.5%) and respondents who had a good level of knowledge with a level of less preparedness were 77 respondents (22.9%). While respondents who have a low level of knowledge with a good level of preparedness are 66 respondents (19.7%) and respondents who have a low level of knowledge with a low level of preparedness are 73 respondents (21.7%).

The results of the Chi-Square statistical test obtained p-value = 0.016 so that the p-value <0.05, which means H_a is accepted. It can be concluded that there is a significant relationship between knowledge and disaster preparedness in nursing students at STIKes Yatsi Tangerang. The results of this study are in line with research conducted by (Rofifah, 2019) which found a relationship between the level of knowledge and preparedness (disaster preparedness). Diponegoro University nursing student.

Another opinion is that knowledge in the cognitive domain has 6 levels that are safe at the third level is the application or ability to use the material that has been learned in real conditions. Applications related to the dimensions of procedural knowledge (procedural knowledge) include activities to implement a procedure and implement it. Such as implementing self-rescue procedures in the event of a disaster and the use of self-rescue facilities available in the building. The need for adequate information related to disasters through formal and non-formal disaster education both in the campus environment and at home.

CONCLUSIONS

Almost all the respondents have a good level of knowledge related to disasters with a percentage of 55.2% (185 students). And most respondents have a good level of preparedness with a percentage of 58.5% (196 students). There is a significant relationship between knowledge and disaster preparedness in nursing students at Stikes Yatsi Tangerang. With a p value of $0.016 > 0.05$. This

means that there is a relationship between knowledge and disaster preparedness.

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