

RELATIONSHIP BETWEEN THE SOCIALIZATION OF THE USE OF LIGHT FIRE EXTINGUISHER WITH DISASTER PREPAREDNESS IN STUDENTS OF DIPLOMA THREE NURSING STUDY PROGRAM IN SOUTH ACEH

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ABSTRACT

Background: Educational institutions have the risk of potential hazards such as building fires. The existence of these potential hazards must be controlled properly so as not to cause illness, injury, or even serious accidents and prevent damage to equipment and the environment. There needs to be training held in order to follow up and evaluate the creation of risk assessments carried out by all laboratories. Training in the use of equipment is needed for lecturers, education personnel, laboratory staff and laboratory technicians and students. Research activities are only focused on students. This is in line with the implementation of the tri dharma activities of the Aceh Selatan Nursing Study Program lecturers. **Objective:** To determine the ability to use light fire extinguishers in students. **Method:** This study uses a descriptive correlative method, sampling with a purposive sampling technique by means of total sampling, data analysis with a cross-sectional study approach. The number of samples was 185 respondents, the research instrument used a questionnaire of 20 questions. **Results:** Shows that the majority of students have a poor level of knowledge (51.9%) and have a poor level of preparedness (52.4%). Bivariate analysis showed that there was a significant relationship between knowledge and the ability to use a light fire extinguisher $\rho = 0.001$ ($\rho < 0.05$). **Conclusion and Suggestion:** The results of the study concluded that the better the knowledge of students, the better the ability to use the tool as one of the disaster preparedness efforts. The development of Emergency Nursing and Disaster Management courses is needed to improve knowledge and disaster preparedness. This is in accordance with the characteristics of the excellence of the South Aceh Nursing Study Program.

Keywords: *Knowledge, Students, Light fire extinguishers.*

INTRODUCTION

Indonesia has experienced various disasters in the period 2013-2018. According to data from the National Disaster Management Agency (BNPB), there have been 105 cases of earthquakes, 3,179 cases of tornadoes, and 40 cases of volcanic eruptions. In addition to natural disasters, Indonesia also experienced non-natural disasters such as 22 cases of fires, 152 cases of transportation accidents, and 10 cases of social unrest. Central Java Province ranked first as the region with the most disasters in Indonesia in the period 2013-2018, followed by West Java and East Java Provinces.

Indonesia is one of the countries crossed by the Pacific and Mediterranean mountain ranges that affect the topography of Indonesia. In addition, Indonesia is astronomically located on the equator which affects the climate and weather such as the rainy and dry seasons. These geographical conditions make Indonesia one of the countries prone to disasters that cause losses in terms of lives, psychological disorders, and property damage.

Natural and non-natural disasters can occur anywhere and anytime, including in educational environments such as universities. The disaster that occurred was a fire in the Faculty of Agricultural Technology Building, IPB Bogor in 2017 which burned down 2 laboratory rooms, this incident was caused by an electrical short circuit. A fire also occurred in the Unimal Rectorate Building (Malikussaleh University) Lohkseumawe Aceh which was deliberately burned by one of the honorary employees. In addition, a fire also burned down the UHO Student Dormitory (Halu Oleo University) Kendari, Southeast Sulawesi which was caused by fire from a gas stove that spread to the wooden walls in early 2018.

The South Aceh Nursing D-III Study Program Campus located in the Capital of South Aceh (Tapaktuan) is one of the areas demographically surrounded by mountains and seas. The largest natural disaster in Aceh in 2004, namely the earthquake and tsunami, has devastated most of Aceh, including South Aceh. This condition is a trigger for the rise of motivation and mitigation efforts from all parties including educational institutions, Aceh's demographic conditions are very vulnerable to disasters such as earthquakes and floods. Referring to the conditions and disaster events above, knowledge related to disaster preparedness is needed by each individual and community. Preparedness is a series of activities carried out to anticipate disasters through organizing and through appropriate and effective steps so as to reduce the negative impacts of the disaster, both physical damage and loss of life.

The D-III Nursing Study Program of the Aceh Ministry of Health Polytechnic is a campus that has several multi-storey buildings due to the lack

of land and space. As an educational institution, the study program environment has the potential for dangers that can threaten human life, namely fire hazards such as the presence of several flammable materials (paper), and there are rooms and equipment that are at risk such as the use of laboratories for practicums, and other installations. Based on the results of previous research conducted by (Fitri & Riswari, 2023), it is known that one of the dangers in the campus area is the management of cables that are not properly organized, so that it can increase the risk of fire.

Nursing students are prospective nurses who will serve the community. The nursing profession is flexible and covers all conditions, not limited to providing care in hospitals but also required to be able to work in disaster response conditions. The handling situation between alert and normal conditions is indeed very different, so nurses must be able to deal with conditions like this in terms of skills and techniques, one of which is a fire disaster. The need for preparation both in terms of knowledge and skills for nursing students to deal with disaster conditions in accordance with the competencies regulated by the World Health Organization (WHO) and The International Council of Nurses (ICN) in 2009.

METHODS

This type of research is quantitative with a descriptive survey method. The research design used is non-experimental. Using a descriptive correlational research design, because there is no intervention given and this study tries to find the relationship between variables. The approach used is cross-sectional, namely measuring data only at one time, but it does not mean that measurements are only carried out on the same day or time, but the variables are measured only once, so there is no follow-up on the variables studied. The population is all subjects with certain characteristics that will be studied by the researcher. The population in this study were all students of the Aceh Selatan Nursing D-III Study Program who were active in the even semester of the 2023 academic year, totaling 185 people. Sampling in this study used a purposive sampling technique using the Slovin formula. Purposive sampling is carried out when the researcher has understood the characteristics of the population, or sampling is carried out by someone who is very familiar with the population to be studied (an expert in the field to be studied). Data collection by distributing questionnaires to see the level of knowledge and preparedness of respondents, analysis was carried out using the qi square test.

RESULTS AND DISCUSSION

Demographic data is shown in table 1, the majority of respondents were female (67.6%), aged 17-20 years (82.9%), class of 2020 (36.7%). The majority

of respondents had taken Disaster Nursing courses (71.9%). Most respondents had no experience attending seminars and training (74.0%), had never participated in a disaster simulation (52.4%), and the majority of respondents had no experience in disaster management (74.6%).

Table 1. Frequency Distribution of Characteristics of D-III Study Program Students in South Aceh in November 2023 (n=185)

No	Demographic Characteristics	Frekuensi (f)	n (%)
1	Gender		
	Male	60	32.4
	Female	125	67.6
2	Age		
	< 17 years	13	7.1
	17 - 20 years	172	82.9
3	Class		
	2020	68	36.7
	2021	65	35.1
	2022	52	28.2
4	Disaster Nursing Course		
	Attended	133	71.9
	Did not attend	52	28.1
5	Seminar and Training		
	Attended	48	26.0
	Did not attend	137	74.0
6	Simulation Experience		
	Yaes	88	47.6
	No	97	52.4
7	Disaster Experience		
	Yes	47	25.4
	No	138	74.6

Respondents' knowledge regarding disasters is shown in Table 2. The majority of respondents (51.9%) have knowledge in the poor category.

Table 2. Frequency Distribution of Knowledge Level of D-III Nursing Study Program Students in South Aceh in November 2023 (n=185)

Category	Frekuensi (f)	n (%)
Disaster Knowledge Level		
Good	89	48.1
Less	96	51.9

Respondents' preparedness for disasters is shown in Table 3. The majority of respondents (52.4%) have knowledge in the poor category.

Table 3. Frequency Distribution of Preparedness Level of D-III Nursing Study Program Students in South Aceh in November 2023 (n=185)

Category	Frekuensi (f)	n (%)
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Disaster Preparedness		
Good	88	47.6
Less	97	52.4

The results of the study showed that the majority of respondents had a low level of knowledge about disasters. This is in accordance with Kurniawati's research. The majority of respondents' inaccurate answers were in questions about how to take shelter during a disaster, community groups that are vulnerable to disasters, and efforts to restore environmental conditions after a disaster. Several factors that influence the level of preparedness according to Muhammad and Abdul include education and experience. The majority of respondents have never conducted disaster simulation activities at home with family members. The level of student knowledge is influenced by several factors including information from both formal and non-formal education such as seminars, training and simulations and the frequency of information received based on data from this study, most respondents have taken Disaster Nursing courses and have experience in participating in disaster simulations, but their level of knowledge is still lacking. This study is in line with Pangestu's study in 2012 which stated that the level of knowledge of respondents who took courses related to disasters was in the low category. This can be caused by other factors such as students' awareness of disaster risks which are still lacking. The level of disaster risk apart from the potential for disasters that can occur is also determined by mitigation efforts and preparedness in dealing with disasters.

Another factor that can cause a lack of knowledge is access to information or materials. In formal education in the classroom, learning materials are materials needed to form knowledge, skills, and attitudes that must be mastered by students in accordance with the established competency standards. The materials provided by the Disaster Nursing course lecturer team include the concept of disaster nursing, community empowerment, disaster triage, disaster mitigation, disaster education and preparedness, and have conducted disaster simulations as an evaluation of the learning process. The learning methods applied are in the form of seminars or lectures, questions and answers, and group discussions. There is still limited access to information related to disasters available in campus facilities such as books, booklets, posters, or videos about disasters. The need for more interesting learning media to arouse students' interest in learning.

Students' awareness to learn also determines the level of knowledge and understanding. This study shows that the majority of students only access disaster information when a disaster occurs through the internet and social media. According to Notoatmodjo, awareness related to knowledge and positive attitudes will create long-lasting behavior. Another factor that influences the level of knowledge is the experience of facing disasters that can increase awareness to prevent greater impacts from a disaster event.³⁷ The

majority of respondents in this study have experience facing disasters such as earthquakes, and some of them have experience facing floods and fires. Another study by Tanaka showed that the majority of people in Japan who had faced a disaster at least once were able to increase their knowledge of disaster preparedness and even prepare equipment to face disasters.

After the socialization activities are carried out, the next stage is an evaluation to determine how much influence the socialization that has been carried out has had on participants by distributing post-test questionnaire sheets, with the same question format as the previous pre-test, so that changes in knowledge and skills in fire handling simulations are found. Simulation activities for the use of light fire extinguishers are carried out by participants through the practice of using the correct fire extinguishing media which is directly practiced by the service team, after receiving the material and having their level of knowledge measured. The team directly demonstrates how to extinguish fire using a fire blanket or using APAR correctly, then the participants take turns extinguishing the fire using APAR or with a fire blanket, it is hoped that participants can improve their respective skills.

Extinguishing fire using a light fire extinguisher or a fire blanket is one way to prevent fires. The provision and installation of APAR in the building area is considered ineffective, so it is necessary to carry out fire extinguishing education/simulation to foster the ability to use APAR for the academic community. One form of activity to gain knowledge about emergency response prevention and preparedness is to conduct periodic socialization of APAR use (Hillah et al., 2022). Therefore, the academic community needs to be given training and skills on fire extinguishing routinely or periodically to improve skills in order to form preparedness in dealing with fires. Although there is a set of legal instruments that must be obeyed to overcome and eradicate health problems in society, in reality, there are many people who are still ignorant of health in general and disaster mitigation issues in particular. Therefore, this effort is unlikely to succeed if done alone, efforts are needed to prevent and handle fire disaster problems comprehensively from all aspects of life.

CONCLUSION

The study used a quantitative approach with a descriptive survey research type where no special treatment was carried out on the variables. The results of the study that had been conducted on 185 students of the D-III Nursing Study Program in South Aceh, Poltekkes Kemenkes Aceh, concluded that students' knowledge of disasters was lacking and they had poor preparedness. The results of the analysis of the relationship between knowledge and disaster preparedness obtained a value of $\rho = 0.001$ ($\rho = 0.05$) so that there was a relationship between the two variables, it can be said that if the level of knowledge is better, the level of disaster preparedness will also be better.

The results of this study are expected for nursing students to improve their knowledge and disaster preparedness in their home and campus environments by participating in training and education, and conducting disaster simulations with their families so that they can participate in disaster response efforts. The results of this study are expected for institutions to be able to develop learning methods in Disaster Nursing courses with attractive media such as posters or videos to improve students' knowledge and preparedness in dealing with disasters so that they can be provisions for students when carrying out their duties as nurses in health service agencies or in the community. Suggestions for further researchers can conduct research on disaster preparedness by involving other health profession students in the Poltekkes Kemenkes Aceh environment.

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APPENDIX

(if any)