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The Effect of Earthquake Disaster Management Preparedness Knowledge and Training on Midwife Preparedness in Central Aceh Regency, Indonesia

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A B S T R A C T

The threat of an earthquake has received wide attention, because it is sudden, predictable, but difficult to determine when it will occur. Predictions are based on the monitoring of seismic activity, historical records and observations. Disasters always have an adverse impact, such as damage to physical facilities and infrastructure (residential housing, office buildings, schools, places of worship, roads, bridges and others). Midwives are health workers who generally work in Health Center or in the community/community closest to the impact of the disaster. The contribution of the midwife to disaster/emergency risk reduction or preparedness is very important. Meanwhile, midwives are often not included in the workforce for disaster preparedness at local, national and international levels. This study aimed to determine the effect of knowledge and training on earthquake disaster preparedness on the preparedness of midwives in Central Aceh Regency. This study uses a survey research design that is analytic in nature with an approach cross-sectional which is measured at the same time as the research takes place and tested through hypothesis testing. The sample is 208 samples. The sampling method in this study was carried out proportionally in proportion to the total population spread across 14 Districts in Central Aceh Regency. The results of the study show that there is an influence of knowledge variables (p = 0.018), and disaster training (p = 0.000). This shows that knowledge and training have a relationship and influence on earthquake disaster preparedness in Central Aceh Regency.

1. Introduction

Earthquakes are a type of natural disaster that can periodically and unexpectedly threaten human life and existing infrastructure in various regions around the world. Indonesia, with its geographical position on the pacific ring of fire, is one of the countries that are most prone to earthquakes. One area that often experiences earthquakes is Central Aceh Regency, which is located in Aceh Province, Indonesia. These earthquakes often cause significant damage, loss of life, and serious social impact. In emergency situations such as earthquakes, the role of midwives as frontline health workers is very important. They are responsible for providing first aid to victims, especially pregnant women, infants, and children. Therefore, the preparedness of midwives in dealing with earthquake disasters is a very vital aspect of efforts to save lives and post-disaster recovery.[1-5]

Knowledge and training are key factors in increasing one's preparedness in dealing with emergency situations. Good knowledge of the types of disasters that are likely to occur, the steps to be taken, and the associated risks can help one to take appropriate action in an emergency situation. This includes evacuation measures, first aid, and effective communications. Emergency preparedness training helps one to develop the concrete skills needed in those situations. For example, CPR (cardiopulmonary resuscitation) training can save lives in cardiac arrest situations. Knowledge and training can reduce the

level of confusion and panic when dealing with emergency situations. People who have been trained tend to be calmer and can think more clearly in making critical decisions.[6-8]

In the context of Central Aceh Regency, where earthquakes are a real threat, knowledge and training in earthquake disaster preparedness is inevitable for midwives as parties who play an important role in providing health services in the midst of a disaster. However, efforts to increase the knowledge and skills of midwives in dealing with earthquakes may face various challenges, such as limited resources, access to adequate training, and understanding that may vary regarding the steps to be taken in an emergency situation. Therefore, research that focuses on the effect of earthquake disaster preparedness knowledge and training on the preparedness of midwives in Central Aceh Regency is very relevant and important to do.[9-12] This study aimed to identify the extent to which the knowledge and training received by midwives in Central Aceh Regency have influenced their level of preparedness in dealing with earthquake disasters.

2. Methods

This study uses a survey research method with a cross-sectional approach, which is a study in which measurements or observations are made at the same time on independent and dependent variable data (one time) and tested through hypothesis testing in Central Aceh Regency in 2023, which was carried out in June 2023. The population in this study were all midwives who served in the work area Health Office in Central Aceh Regency. The sample is 208 samples. The sampling method in this study was carried out proportionally in proportion to the total population spread across 14 Districts in Central Aceh Regency.

Data collection includes primary data, data obtained directly from respondents by distributing questionnaires containing closed questions that have been prepared the same for all respondents so that there is no bias to capture the information you want to know in accordance with the research objectives. Data analysis in this study included univariate analysis. Data analysis was carried out by describing it descriptively to see the frequency distribution of the variables studied, both independent and dependent. For this analysis, all tables are made in the form of frequency distribution tables. And bivariate analysis was conducted to determine the relationship between the independent variables with the dependent variable. By using the Chi-square test with the SPSS program (statistical product and service solution), the decision to test the hypothesis is based on the level of significance of 95% with a p-value <0.05.

3. Results and Discussion

Based on Table 1, it is known that based on age, the majority of respondents were 35 years old, namely 126 people (60.58%), compared to respondents who were <35 years old, namely 82 people (39.42%). Based on the length of work, the majority of respondents had worked for 5 years, namely 177 people (85.10%), compared to respondents who had worked for < 5 years, namely 31 people (14.90%). Based on Table 2, it is known that the percentage of midwives' knowledge about earthquake preparedness in Central Aceh Regency is highest at good knowledge of 87.0% (181 people) compared to sufficient knowledge of 13.0% (27 people).

Table 1. Frequency distribution of respondent characteristics consisting of age and length of work.

No.	Characteristics	Frequency	Percentage (%)
1.	Age		
	>35 Years	126	60.58
	≤35 Years	82	39.42
2.	Length of work		
	>5 Years	177	85.10
	≤5 Years	31	14.90

Table 2. Frequency distribution of midwives' knowledge of disaster management preparedness earthquake in Central Aceh Regency, Indonesia.

No.	Knowledge	Frequency	Percentage (%)
1.	Enough	27	13.0
2.	Good	181	87.0
Total		208	100,0

Table 3. Frequency distribution of midwife training on disaster management preparedness earthquake in Central Aceh Regency, Indonesia.

No.	Training	Frequency	Percentage (%)
1.	Never	190	91,3
2.	Ever	18	8,7
Total		208	100

Earthquake disaster preparedness training is a respondent's statement about earthquake disaster preparedness training (Table 3). From the results of the study on the variable earthquake disaster preparedness training, it was found that as many as 190 respondents (91.3%) had never attended training, and as many as 18 respondents (8.7%) had attended earthquake disaster preparedness training. Based on Table 4, the highest percentage of earthquake disaster preparedness in Central Aceh Regency was unfavorable preparedness at 68.3% (142 people) compared to good preparedness at 31.7% (66 people).

Table 4. Frequency distribution of earthquake disaster preparedness in Central Aceh Regency, Indonesia.

No.	Preparedness	Frequency	Percentage (%)
1.	Less good	142	68,3
2.	Good	66	31,7
Total		208	100

Based on Table 5, it is known that the knowledge variable has a p-value of 0.007 (p <0.05), so it can be concluded that the knowledge variable is significantly related to midwife preparedness. The training variable has a p-value of 0.000 (p <0.05), so it can be concluded that the training variable is significantly related to midwife preparedness.

Table 5. Effect of knowledge and training disaster management preparedness earthquake on midwife preparedness in Central Aceh Regency.

No	Independent variable	Preparedness				Total	Sig
		Less good	%	Good	%		
1.	Knowledge						
	Enough	25	92,6	2	7,4	27	0,007
	Good	117	64,6	64	35,4	181	
2.	Training						
	Never	139	73,2	51	26,8	190	0,000
	Ever	3	16,7	15	83,3	18	

Knowledge is the result of knowing, and this occurs after people sense certain objects. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste, and touch. Most human knowledge is obtained through the eyes and ears. Human knowledge underlies a person's attitude towards something, and the next attitude underlies a person to act. It is the same as this research, where knowledge about preparedness is very important to build midwives' preparedness. Knowledge and skills can be improved through regular training and technical guidance aimed at achieving success in work. If the knowledge is good, then the preparedness will be good too. However, the results of the study showed that midwives' knowledge was good, and furthermore, their preparedness was not good. There are still many residents who think that the disaster was fate. In general, they believe that disaster is a curse for sins and mistakes that have been made, so they feel no need to try to learn preventive measures anymore.[13-17]

Training is a form of informal education that is obtained by individuals or midwives in an organization. This training can be interpreted as whether midwives have or have never attended training related to earthquake disaster preparedness. Training earthquake disaster preparedness towards midwives preparedness has never been implemented by the Central Aceh Regency Health Office. Until now, only 18 respondents (8.7%) received training for midwives. Meanwhile, 190 respondents (91.3%) had never attended training. The training that this midwife received was only through sending health workers to take part in training for implementing instructors organized by the provincial health office. This training is also for informational purposes only. The absence of training is caused by the assumption that the need for training in earthquake disaster preparedness towards midwives preparedness is not yet urgent, and the suggestion from the health office to organize training for health workers was not realized. Many obstacles were encountered in carrying out this training, including the absence of training facilities and infrastructure, the lack of training instructors, and the lack of financial support to organize training activities. Statistically, as many as 91.3% of respondents had never attended training, especially those who were new to work or with a working period of less than five years tended to have never attended training on earthquake disaster preparedness towards midwives preparedness. The low frequency of training received by midwives tends to be influenced by the low level of training planned by the Health Office in Central Aceh Regency. Training is a planned effort that facilitates people to learn certain behaviors, whether in the form of knowledge, attitudes, or skills so that they can carry out their daily tasks well. Training is an effort to improve worker performance in a particular job that is being responsible or a job that is related to the job. Training is more related to improving the skills of employees who have occupied a particular job or task so that it places more emphasis on skills. Training is an integrated way oriented to actual work demands, with an emphasis on the development of skill, knowledge, and ability.[18-20]

4. Conclusion

Knowledge in the good category is 181 people (87.0%), and most never received earthquake disaster preparedness training on midwife preparedness, as many as 190 people (91.3%). Knowledge and training affect the preparedness of midwives in earthquake disaster management in Central Aceh Regency, Indonesia.

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