Effect of Disaster Risk Reduction Training (Disaster Mitigation) Based on Community Participation on Flood Disaster Management Preparedness Knowledge

Rusna Tahir[1*], Akhmad[1], Sahmad[1] and Iqra S[2]

[1]*Departments of Nursing, Poltekkes Kemenkes Kendari, Kendari, Southeast Sulawesi, Indonesia.*

[2]*Department of Nursing, Poltekkes Kemenkes Mamuju, West Sulawesi, Indonesia.*

[*]**Correspondence:**

Rusna Tahir, Departments of Nursing Poltekkes Kemenkes Kendari, Kendari, Southeast Sulawesi, Indonesia.

ABSTRACT

Disaster is an event or series of events that threaten and disrupt the life and livelihood of the community caused by natural factors and or non-natural factors or human factors resulting in casualties, environmental damage, property losses, and psychological impacts. Purpose of this research is to measure the ability of the people to understand the training of disaster risk management. This research is quantitative research with a quasi-experimental design with a pre posttest with control group approach. The result of this study finds that there is strongly correlation between training and knowledge of the people of Wawosolo with p value 0, 0001. Based on the result we suggest conducting training of the people to protect the risk of disaster.

Keywords

Disaster, Disaster risk assessment, Community participation, Disaster management.

Introduction

Indonesia is a region that is prone to disasters, both natural disasters and because of human actions. Some of the factors that caused this disaster are geographical, climatic, geological and other factors such as socio-cultural and political diversity. Disaster is an event or series of events that threaten and disrupt people's lives and livelihoods caused by natural factors and or non-natural factors and human factors resulting in casualties, environmental damage, property losses, and psychological impacts [1].

With the conditions of disaster events in Indonesia, there are still many people who do not have a high enough level of awareness of disasters. Lack of awareness can increase people's risk of disaster. Through disaster mitigation, it is hoped that the community can understand the threat of disaster risk in a region through disaster risk analysis to draw up a follow-up plan to reduce disaster risk.

The focus of disaster management in sustainable development is disaster risk management that aims to avoid, reduce or transfer the impact of hazards. Community-based disaster risk management that places communities as important actors is the main strategy of initiative – disaster risk management initiatives to build resilience to disasters.

Disaster risk reduction (PRB) is the concept and practice of reducing disaster risks through systematic efforts to analyze and manage disaster-causing factors including reduced exposure to hazard threats, reduction of vulnerability of populations and property, wise management of land and environment, and increased preparedness for adverse events [2].

In disaster risk reduction, the community is introduced to the type of disaster hazard threat in which the community lives, how to avoid and reduce the threat of danger and vulnerability, and improve the ability to deal with every disaster threat so that the risk posed can be reduced or nonexistent. Local keraifan and traditional knowledge that exists in the community can be included in disaster risk reduction. There are 4 components that are interconnected with each other, namely the potential threat of

danger (hazard), vulnerability (vulnerability), capacity / capability (capacity) and disaster risk. One of the efforts to reduce disaster risk can be done through the establishment of a disaster mitigation post (POSMINA). Posmina is created as a post to reduce the risk of disaster. The participation of local communities in disaster mitigation is very important.

Disaster risk reduction (PRB) is the concept and practice of reducing disaster risk through systematic efforts to analyze and manage disaster-causing factors including reduced exposure to hazard threats, reduction of population and property vulnerability, wise management of land and the environment, and increased preparedness for adverse events. In disaster risk reduction, the community is introduced to the type of disaster hazard threat in which the community lives, how to avoid and reduce the threat of danger and vulnerability, and improve the ability to deal with every disaster threat so that the risk posed can be reduced or nonexistent. Local wisdom and traditional knowledge that exists in the community can be included in disaster risk reduction. There are 4 components that are interconnected with each other, namely the potential threat of danger (hazard), vulnerability (vulnerability), capacity / capability (capacity) and disaster risk. Based on the description above, the formulation of the problem in this study is "Is there an influence of Disaster Risk Reduction Training (Disaster Mitigation) with Disaster Response Training Module on knowledge of disaster preparedness apparatus in Wowasolo Village Pondidaha District Konawe Regency".

Method
This research is quantitative research with a quasi-experimental design with *a pre posttest with control group* approach. The population in this study is the Wawosolo Village apparatus. The sample in the study amounted to 60 people, consisting of 30 people in the intervention group and 30 people in the control group. Sampling techniques use *consecutive sampling*. Data collection is carried out using instruments that have been valid & reliability because the questionnaire has been standardized and adjusted to the Indonesian. Researchers sought the respondent's consent to engage in the study. The intervention provided is disaster risk reduction training for 1 week. The data processing process & data analysis in this study uses univariate and bivariate using *the SPSS V.24* application program. Bivariate analysis begins with a data normality test using a skew ness normality test then performed a homogeneity or equivalence test on each numerical data variable between the intervention group and the control group using *levene's test* then used an independent T *test (pooled t test)* to compare changes in knowledge in the control group and intervention.

Result
The results showed that the difference in knowledge of the intervention group respondents before and after training was 15 with p value = 0.000 meaning that the p value < 0.05 so it can be said that there is a significant difference in the value of knowledge before and after being given training.

Table 1: Differences in Knowledge of Intervention Groups before and after being given training.

Variable	n	Mean	p *value*
Pre-post knowledge Intervention	30	15	0,000

Table 2: Differences in Control Group Tightening Before and After Training.

Variable	n	Mean	p *value*
Pre-post knowledge Control	30	14,50	0,000

Based on the results of the analysis in table 2 above, it is known that the difference in knowledge of control group respondents before and after training is 14.50 with p *value* = 0.000 means that the p *value* < 0.05 so it can be said that there is a significant difference in the value of knowledge before and after being given training.

Table 3: Differences in Control Group Knowledge and Intervention after Training.

Variable		n	Average	p *value*
Respondent's knowledge	Intervention	30	37,95	0,001
	Control	30	23,05	

Based on the results of the analysis in table 3 above, it is known that the knowledge difference test between the intervention and control groups obtained a value of p = 0.001 (p<0.05) which means that there is a significant difference in knowledge in the intervention group and the control group, where the intervention group has better knowledge with an average of 37.95 compared to the control group of 23.05

Discussion
The results of the study provided an overview of knowledge about the preparedness of respondents both in the intervention group and in the control group. Respondents' knowledge before being given disaster risk reduction training in the intervention group was 15.30 with a minimum score of 10 and a maximum value of 19. While the respondent's knowledge before being given disaster risk reduction training in the control group was 14.40 with a minimum value of 9 and a maximum value of 21. The average knowledge value of respondents has not come close to the maximum value. If you look at the question items filled in by respondents, especially on questions that are cognitive component questions (C1) at number 1 answered correctly by 55% of respondents, number 3 answered correctly by 58%, number 5 answered correctly by 58% of respondents, and number 6 answered correctly by 48.3% of respondents.

Based on a brief interview with several respondents and based on information from the local government, disaster training activities have never been carried out in their area so that the local community has not been informed about disaster risks and countermeasures that must be carried out. This is in line with the question items filled in by respondents, especially in the application component (C3) on question number 13 answered correctly by 46% of respondents, number 23 answered correctly by 51% of respondents, number 26 answered by 43% of respondents.

There are several factors that affect a person's knowledge, one of which is educational background. If you look at the demographic data of education respondents, the average education is the majority of high school, which is 70% in the intervention group and 76.6% in the control group. This is in line with what Salamah (2018) discovered there is a significant relationship between knowledge and education where the higher education, the better it is at absorbing information.

Knowledge of disaster preparedness is an understanding of events that pose a threat and cause disruption to life and community life where these threats and disorders occur due to natural and non-natural factors that cause casualties, material losses and psychological trauma. Knowledge of disaster preparedness can be obtained through various sources, formal and non-formal learning, with expert guidance or self-study. Each individual has a different level of knowledge based on ability and learning experience and the breadth of information received. Disaster knowledge will increase understanding, awareness, and increase knowledge about disasters so that systematic, integrated, and coordinated disaster management between all elements can be well mitigated.

The results showed that there was a change in knowledge before and after being given training. The average value of knowledge in the intervention group before being given training was 15.3 with a minimum score of 10 and a maximum of 19. The average value of knowledge in the intervention group after training increased to 20.47 with a minimum score of 16 and a maximum of 25. The difference in the average knowledge of the participants of the intervention group before and after training was 15 with p $value$ = 0.000 meaning that the p $value$ < 0.05 so it can be said that there is a significant difference in the value of knowledge before and after being given training.

The results showed that the knowledge difference test between the intervention and control groups obtained a value of p = 0.001 (p<0.05) which means that there is a significant difference in knowledge in the intervention group and the control group, where the intervention group has better knowledge with an average of 37.95 compared to the control group of 23.05. The results of this study are in line with Solikhah et al., [3], which states that there is an increase in knowledge to 14.53 close to a maximum value of 15 after training. Afandi's research (2014) shown that simulation training was effective in improving students' knowledge of earthquake disaster mitigation at Sma Muhammadiyah 1 Surakarta.

Knowledge of disaster preparedness can be improved through various methods, one of which is disaster training activities. The implementation of training activities by involving the community will increase preparedness knowledge, increase public awareness and commitment to a safe and healthy culture, be aware of disaster risks, have a mature and well-established plan before, when they occur, and after disasters, and always be ready to respond in times of emergency and disaster.

Knowledge of disasters and preparedness in disaster management is an important point in efforts to reduce the risk caused by disasters. Good knowledge will increase public vigilance and readiness for disasters. Knowledge becomes a major pillar in improving disaster preparedness. Attitude and concern for the anticipation of threats and disaster impacts are strongly influenced by knowledge [4].

Acknowledgement

References

1. https://siaga.bnpb.go.id/hkb/pocontent/uploads/documents/buku_panduan_latihan_kesiapsiagaan_bencana_revisi_april_2017 .pdf.
2. www.preventionweb.net
3. Solikhah MM, Krisdianto MA, Kusumawardani LH. The Effect of Disaster Response Cadre Training on Disaster Preparedness. Indonesian Journal of Nursing Science. 2020; 10: 156-162.
4. Kurniawati D, Suwito S. The Influence of Disaster Knowledge on Preparedness Attitudes in the Face of Disasters in Students of geography education study program University of Kanjuruhan Malang. JPIG Journal of Education and Geography. 2019; 2.