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The Relationship of the Role of Teachers in the Implemented Curriculum of School-Based Disaster Preparedness in Vulnerability in School Teachers with Disabilities in Malang City, Indonesia

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ABSTRACT

The students are the group most vulnerable to disasters, especially children with disability. Teachers should have the skills to handle disasters when they occur. The low preparedness of School-Based Disaster Preparedness/Sekolah Siaga Bencana (SSB) teachers in disaster risk reduction can lead to increased vulnerability of teachers in dealing with disaster threats. This study was conducted to analyse the relationship of the role of the teachers in the implemented curriculum SSB in Vulnerability of school teachers with disability in Malang City. This research is a quantitative study, using correlative analytic observational design and cross sectional approach with a sample of 30 teachers taken from elementary schools and junior high schools with disability. The results of bivariate analysis using gamma correlation test obtained the results of knowledge factors ($p = 0.005$; $r = 0.47$) attitude ($p = 0.000$; $r = 0.75$), means of infrastructure ($p = 0.000$; $r = 0.98$), and disaster information ($p = 0.000$; $r = 0.59$) for SSB teachers' preparedness.

Keywords: *Knowledge, attitude, curriculum, teachers, School-Based Disaster Preparedness, Vulnerability*

Introduction

Preparedness is an important element and part of disaster management.[1] Building such a culture requires innovative, economic, logical, human-oriented, and needs-oriented interventions.[2] School is one of the main stakeholders responsible for building preparedness. According to Takahashi, besides being the source of knowledge, schools have several strategic roles in building preparedness, such as being the source of knowledge, dissemination of disasters, being participatory educational centres for communities, providing practical guidance on what to prepare before disasters, and actions which should be done during and after the disaster.[3] So, school readiness becomes crucial in improving public preparedness.[4]

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In the World Conference on Disaster Risk (United Nations International Strategy for Disaster Reduction [UNISDR]; Geneva, Switzerland), it was proposed that comprehensive school safety consists of three pillars: (1) safe school facilities, (2) effective school disaster management and disaster risk reduction (DRR), and (3) endurance education.[5]

The establishment of Sekolah Siaga Bencana/SSB (School-Based Disaster Preparedness) is a preparedness effort for facing disasters in schools, which is the implementation of the Hyogo Framework 2005-2015. School-based disaster preparedness is a school that has the capability of managing disaster risks. These capabilities are measured by having disaster management planning (before, during, and after a disaster); availability of logistics; security and comfort in education; infrastructure and emergency systems supported by knowledge and skills of preparedness; standard operational procedures; and early warning systems.[6] A study by Lesmana and Purborini indicated that the level of SSB preparedness is still low, in terms of knowledge, attitude, and actions undertaken by SSB in DRR.[7]

Method

Participants and Procedure: The recruitment of participant used simple random sampling. Participants consisted of the teachers who teach students with disabilities. This research was conducted on (n=30) teachers agreeing to join in this research. The independent variables were upholding knowledge, skill and competence while the dependent variable was the level of disaster preparedness.

Instrument: This research is quantitative, conducted by using observational analysis with a cross-sectional approach. The setting of the study were SDLN and SMP LB of which the location was Malang City, Indonesia. This study was carried out from August to November, 2018. The population was 30 teachers from two school SSB in Malang, and the sample size in the study was 30 teachers in SSB taken from grades five and six with a purposive sampling technique. The uni-variate was conducted to identify characteristics of the respondent, bi-variate analysis was conducted to describe the relationship between knowledge and attitude with SSB teachers' preparedness to deal with the disaster, using gamma correlation test with significance level (α) = 0,005; and multi-variate logistic regression was used to see how much influence knowledge and attitude had towards teachers preparedness SSB.

Statistical Analysis: The data was analysed by SPSS version 21. Multiple linear regression was used to identify how far the contribution of upholding trust, compassion, and competence variable was to patient satisfaction. The redundancy variable in this research is socio-demographic factors such as: sex, education, job, and age. Pearson correlation analyses were used to view the correlation between socio-factor and patient satisfaction. The significant level applied was $p < 0.05$.

Result

Socio-demographic characteristics of the respondents: Based on the data obtained from the results of the study, the general characteristics of respondents based on age, gender, training experience, knowledge, attitude, and preparedness were as follows.

Table 1: Distribution of Respondents by Age in SDNLB Kota Malang and SMP LB Malang City

Variable	N	%	Mean	SD	Min-Max
Age	30	100.0	11.68	74	36-48

Source: Primary Data (2018).

As Table 1 indicates, from 30 respondents, the average respondent was 36-48 years old with standard deviation of 74. The youngest age was 26 years and the oldest age was 48 years.

Table 2: Distribution of Respondents by Gender and Training Experience Teachers preparedness

Criteria	Amount	Percentage (%)
Gender		
Male	10	33.33
Female	20	66.67
Total	30	100
Training Experience		
Never	25	83.33
Once	3	
Twice or More	2	
Total	30	100.0

Table 2 illustrates that the number of male teachers was almost equal to that of the female teachers; the number of male teachers was 10 (40%) and the number of female teachers was 20 (60%). Meanwhile, based on training experience, more than one-half of the teachers never had disaster training (73.4%). This was due to the absence of training programmes related to disaster preparedness for teachers from the government, schools, and private parties.

Table 3: Distribution Respondent by Knowledge Variable, Attitude, and Teacher' Preparedness

Variable	Amount	Percentage (%)
Knowledge		
Less	13	46.8
Good	17	53.2
Total	30	100.0
Attitude		
Negative	13	46.8
Positive	17	53.2
Total	30	100.0
Preparedness for Disaster		
Not Ready Yet	16	59.6
Ready	14	40.4
Total	30	100.0

Source: Primary Data (2018).

Data from each variable are presented in Table 3. The result of the uni-variate analysis showed that from 16 respondents, more than one-half of the teachers had good knowledge (53.2%) with a positive attitude (53.2%). Overall, the SSB teachers preparedness in Malang City was still low (59.6%).

Table 4: Results of Bi-variate Analysis Gamma Correlation Knowledge Relation to SSB Teachers Preparedness in Earthquake Disaster Risk Reduction

The Preparedness of Teachers						
	Less		Ready			P Value
Knowledge	N	%	N	%	(r)	
Less	14	72.5	4	27.5	0.47	.007
Good	16	48.3	26	51.7		
Total	30	59.6	30	40.4		

Source: Primary Data (2018).

From Table 4, P value of .007 was obtained, less than alpha (5%), indicating that there was a significant relationship between knowledge and the preparedness of SSB of teachers in Malang city. The correlation value of 0.47 showed a positive correlation.

Table 5: Results of Bivariate Analysis Gamma Correlation Attitude Relation to SSB Teachers Preparedness in Earthquake Disaster Risk Reduction

The Preparedness of Teachers						
Attitude	Less		Ready			P Value
	N	%	N	%	(r)	
Less	12	82.4	4	17.6	0.75	.000
Good	6	39.7	8	60.3		
Total	18	59.6	12	40.4		

Source: Primary Data (2018).

From Table 5, a P value of .000 was obtained, less than alpha (5%), which indicated that there was a significant relationship between attitudes and the preparedness of SSB teachers in Malang city. The correlation value of 0.75 showed a positive correlation.

Table 6: Results of Analysis Regression Logistic Factor Analysis That Influences the SSB Teachers Preparedness in Disaster Risk Reduction

Variable	Sig.	OR (B)	Hosmer & Lameshow	AUC
Knowledge	0.240	159	0.568	0.60
Attitude	0.038	4.308		
Constant	0.000	0.000		

Based on Table 6, it can be seen that attitude was the variable that had the greatest influence on preparedness, that is OR = 4.308; meaning, the attitude of "poor" teachers of SSB would cause the low preparedness of SSB teachers in DRR for disaster our times compared to SSB teachers who have a "good" attitude respondents in this research responded 100% after controlled knowledge variables. Knowledge became the second-factor affecting preparedness, with value OR = 159.

Discussion

Based on the results of the analysis of the knowledge variable, it was found that there is a significant relationship between knowledge and the preparedness of SSB teachers in DRR, with the significance of 0.007 less than alpha (5%) with correlation value of 0.47, showing a positive correlation with enough correlation strength. The results of the analysis show that more than one-half (53.2%) of SSB teachers have good knowledge of DRR. Most of the teachers are able to answer all questions correctly in the knowledge questionnaire.

According to the researchers' assumption, the above-average knowledge of SSB teachers is because education about disasters is given to SSB teachers. The teachers are taught about the types of disasters, signs of disasters, the need to save themselves the right way, the place of evacuation in the event of an earthquake, early warning systems in schools, and emergency equipment brought in anticipating risk reduction of earthquake disasters. The results of this study are in line with the results of research conducted by Thomas which suggests that knowledge of respondents will be related to the level of preparedness of individuals in facing disasters.[8] Meanwhile, the research of Pathirage, et al. also indicates that preparedness is influenced by one's knowledge of disasters and the obtained training experience.[9]

This is because knowledge is an intellectual aspect that is closely related to all that is known by the man himself. Knowledge gained is an accumulation of education given to a person, both formally and informally, which will support someone in solving a problem. This is because of knowledge-oriented intelligence, thinking power, and knowledge, as well as the understanding of someone.[10]

Efforts to disseminate information that can be useful for the community in building preparedness should be based on sound knowledge. In this case, the school becomes a source of information for SSB teachers in increasing knowledge, so that the knowledge given must

be innovative, economical, logical, human-oriented, and needs-oriented.[11] It appears that most of the rehabilitation is driven by multi-lateral international organizations and nongovernmental organizations (NGOs) that dedicate resources in the education sector (i.e., the fifth in the overall sectoral allocation of post-disaster recovery funds), including school reconstruction and DRR education, in the hope of creating long-term impacts and providing an efficient prevention scheme.[12] One form of DRR is an effort to increase knowledge; a lack of knowledge can factor into interactions that can lead to increased casualties and material losses. This is due to a lack of understanding of hazards, resulting in unpreparedness and powerlessness in facing these threats.[14]

Based on the result of the analysis on the attitude variable, it was found that there is a significant correlation between knowledge and the preparedness of SSB teachers in DRR, with the significance of .000 less than alpha (5%), with correlation value of 0.75, showing a positive correlation with correlation strength. However, it should be acknowledged that the positive or negative attitudes have confounding factors that can influence a person to behave, such as previous experience, education level, region, and disaster knowledge. The study of Codreanu, et al. also indicates that someone who has a positive attitude tends to be calmer in facing disaster threats.[15]

Although most SSB teachers have a positive attitude, there are SSB teachers who have negative attitudes toward preparedness, who are mostly less prepared for DRR. According to Azwar, many factors can influence a person to behave towards the object of attitude, such as personal experience, which is the basic factor in the formation of attitudes.[16] Therefore, personal experience must leave a strong impression. Attitude will be easily formed if it involves emotional factors. The personal experience that SSB teachers have in coping with the disaster in Malang city is a solid foundation for teachers to have a positive attitude in DRR. However, the experience of teachers in dealing with disasters is not a major factor in shaping awareness of preparedness, but must be supported by good disaster education. [17]

However, there is also a Java culture called Lindu assuming that the coming disaster is a form of soil fertility and fruits. This way of viewing can certainly hinder the attitude of the community to be prepared for DRR. This culture is slowly eliminated by the increased knowledge of teachers and communities related to disasters. The success or failure of disaster management depends on the involvement of culture, traditions, and customs. It is important to consider the cultural context of the affected regions, such as customs, traditions, local practices, and ethnic composition of a region for effective and easy implementation.[18]

It is very important for the achievement of preparedness to be improved, especially in areas that are at a high risk of disasters. The Malang area is one of the more potentially earthquake-prone areas.[19] Learning activities are interactive, inspiring, and challenging, motivating learners to participate actively and providing sufficient space for an initiative, creativity, and independence according to the talents, interests, and physical and psychological development of learners. These activities are carried out systematically through exploration, elaboration, and confirmation processes to form a positive attitude.[20]

In addition, there are no vehicles and special lanes to mobilize teachers quickly in the event of an earthquake, considering that one of the schools, SDLB, displays vulnerability. So, the potential for disaster impact is a very high. Therefore, the functions and responsibilities of schools and teachers in emergency situations become an important point in DRR at schools, so that competent human resources are needed.[21]

While comprehensive DRR initiatives should not be confined to infrastructure alone, they should cover a wide range of issues, such as representing the schools of thought in science, engineering, structural, and physical organization, since infrastructure plays an important role in reducing vulnerability of risky communities, such as schools.[22]

Conclusion

There is a significant relationship between knowledge and attitude with SSB teachers' preparedness in DRR in Malang city. The results of this study can be used as feedback to solve the problem of SSB teachers' lack of preparedness in school-based DRR. Prevention and preparedness efforts cannot stand alone. The government should be cautious in utilizing the concept of SSB as a DRR by innovating and improving teachers' knowledge of disasters and encouraging a positive attitude for preparedness.

Ethical Clearance: The ethical approval for this study was granted by Health Research Ethic Committee of Brawijaya University (Number 016/KEP/FK 2018).

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Conflict of Interest: None

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PAGE 2

PAGE 3

PAGE 4

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