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INCREASED LANDSLIDE DISASTER PREPAREDNESS OF DUKUH KRAJAN COMMUNITY, TULUNGAGUNG REGENCY THROUGH POSTER MEDIA

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ABSTRACT: Landslide disasters in Indonesia are increasing, one of which is in Tulungagung Regency, East Java Province, including areas that are quite vulnerable to landslides. It was recorded that 55 landslides hit Tulungagung Regency and caused considerable losses. From the results of the review, it becomes a parameter for researchers to offer pre-disaster mitigation programs in the form of providing posters containing disaster mitigation materials to communities in landslide-prone areas. The choice of poster media is because the information conveyed is easier to reach and understand by the public. In this study, researchers used a measurement tool in the form of a questionnaire that was distributed to 76 respondents so that initial understanding through Pretest and improvement after giving poster media through Posttest. The results of data analysis in which, the value of knowledge of the people who were respondents in this study was considered better and, in the Wilcoxon, test obtained a result of <0.05 showed that poster media is effective as a medium in supporting disaster preparedness in Tulungagung Regency

Keywords: Disaster Mitigation, Poster, Landslide.

1. INTRODUCTION

Landslides in Indonesia have increased in the last decade and caused many casualties. [10] East Java Province is an area that is quite vulnerable to landslides. This condition occurs because there are several mountains located in several regions of East Java Province. [7] The Regional Disaster Management Agency (BPBD) of East Java Province determined 22 areas at risk of landslides. This provision is strengthened by research data on soil slope and potential motion on soil load. [8] Based on the disaster map, almost all areas in Tulungagung city are one of the disaster-prone areas, and landslides need to be watched out for when the rainy season arrives, especially in the western area of Tulungagung city which can cause many types of landslides. [11] Tulungagung which is one of the cities most at risk of landslides that has experienced 55 landslides over the past 5 years, one of the districts that has contributed the most is Pagerwojo District which has experienced 21 landslides over the past 6 years. Pagerwojo sub-district, which is located in a plateau with high rainfall and has high soil movement vulnerability, causes an increased risk of landslides. Kradinan village is no exception, which has experienced 6 landslides in the last 5 years with 1 high-scale incident in 2017 [2]. The settlement of Kradinan village, Pagerwojo sub-district, which lives adjacent to the forest and is located in the countryside, makes there is a lack of information from outside, especially about landslide disaster mitigation.

BPBD Tulungagung Regency has made many socialization efforts for population settlements in vulnerable areas, therefore the importance of media in disaster mitigation efforts is very helpful in its implementation, especially in rural areas that are prone to disasters but lack of interest in studying disaster mitigation[1], auxiliary media that is very likely to be used to facilitate the understanding of local people is creative media that can make all circles of society able to Understanding without coercion, and from the media can give residents more understanding of preparedness in the face of landslide disasters.

Due to the lack of use of gadgets in rural residents, creative media that can be used is poster media that can be read by the entire population and is very effective for learning media.[9] So this study aims to increase knowledge of preparedness for natural disasters in Kradinan village, Pagerwojo district, Tulungagung regency by providing posters containing procedures that must be carried out when dealing with landslide

disasters. And with this research, it is hoped that there will be increased preparedness in communities in vulnerable areas as well as knowing the influence of education level on improving disaster preparedness.

2. METHOD

2.1 Pre-Test

Here researchers use quantitative methods. Where later the data will be obtained from the results of questionnaires disseminated to respondents selected according to the most vulnerable areas of Kradinan Village, Pagerwojo District. After the data is collected, it will then be processed using the Wilcoxon method to determine the increase in understanding of disaster mitigation through poster media, and to determine the effect of education level on disaster preparedness, the Regression Moderation method is used.

Respondents in this study were taken 76 samples from a total of 365 residents randomly in the Dukuh Krajan community, Kradinan Village, Pagerwojo District. Due to the lack of effectiveness of using poster media in the population under 13 years old [6], researchers took 76 samples aged over 13 years. Sampling or respondents is carried out through random sampling using a simple random sample method using the help of software.

The instrument in this study uses questionnaire questionnaires as a data collection tool, questionnaires are used on a ratio scale that will be distributed to selected respondents. Where the questionnaire is divided from Pretest and Posttest. Pretest is a measurement of preparedness before the distribution of posters to see the initial conditions of the study.

Fig.1 Pre-Test Activities

2.2 Poster Deployment

After the respondents conduct the pre-test test, researchers will take pre-test questions as well as the distribution of instruments in the form of poster media that have been validated by ITATS Product Design lecturers as design experts through door-to-door / house to house methods. Door to door is very effective because the research instrument will be more targeted and make it easier for the community to understand what things must be prepared and done when facing landslides. Poster media will be given to all communities and poster media will also be given to schools and other village association places, hope that all the community can get the information about disaster preparedness. Giving posters also has the aim of knowing whether the poster designs made can be understood by the people who are given posters, if later the poster is not effective then improvements are needed on the poster and if the contents of the poster are understood then the poster can be said to be feasible for further research.

Fig.2 Poster Media Deployment

2.3 Post-Test

The post-test aims to understand the success as well as public understanding of the process of giving media posters that have been given. Post-test questions are similar to pre-test questions. Post-test questionnaire is given 1 month after giving material with Poster media .

Fig.3 Post-Test Activities

3. RESULTS AND DISCUSSION

3.1 Validity and Reliability Test

Because researchers use questionnaire collection tools that are made personally, validity and reliability tests are needed to find out whether the questionnaires used are suitable for use as data collection tools. The test results can be seen in Table 1. Validity and Reliability Test Results.

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Table 1 Validity & Reliability Test Result

Question	Significant Value of Validation	Significant Reliability Value	Information
Question 1	0,907	0,624 (Reliable)	Valid
Question 2	0,805		Valid

3.2 Validity of Poster Media

Fig.4 Poster Design

The researcher designed a poster with the contents of the poster discussing disaster preparedness bags, what to do when a disaster occurs, and emergency numbers that must be memorized by people who live in disaster-prone areas using assistive software. after designing, the researcher conducted a poster design validation test on 3 lecturers from the product design department, the Adhi Tama Surabaya Institute of Technology as experts in the field of design. which will produce posters that are suitable for use and distribution in this study.

Table 2 Validity of Poster Media

Respondent	Notes
Respondent 1 With 11 Years Experience	The choice of color for the title font lacks contrast so that it is less clear to read.
Respondent 2 With 7 Years Experience	Use the common colors on the signposts as a reference, add motivation etc., change expression to expression of fear/anxiety, Spacing the title font not too tight
Respondent 3 With 7 Years Experience	The poster design is less communicative. The selection of colors in some parts is not in contrast so that they are not clearly read. Need improvement on the title. The bottom area looks empty, it's better to add motivation.

Source: Results of data analysis, 2023.

The results of the questionnaire validation above can be seen that the significance value has exceeded the limits and requirements and make valid.

From the results of the notes from the design expert, the researcher corrected the design in accordance with the design expert's notes, the results are obtained in Figure 5 which will later be used as an instrument in this study.

Fig.5 Poster Design After Validation

3.3 Wilcoxon Test

Wilcoxon test is a non-parametric test used on two paired data. The purpose of this test is to see if there is an average difference between two samples in pairs. So, both data must have the same amount and come from the same source. Where to see the difference from the initial knowledge tested through the Pretest and the knowledge after the provision of poster media as a research instrument through the Posttest. In this study, the Wilcoxon Test was assisted with the help of Software whose results can be seen in Table 3. Wilcoxon Test Results.

Table 3 Wilcoxon Test Result

Class	Mean	N	Significant Value
Pretest	29,01	76	0,000
Posttest	50,75		

Source: Results of data analysis, 2023.

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Based on Table 2 of Wilcoxon Test Results, a Significance value of 0.00 was obtained where the value was below 0.05 so that based on the Wilcoxon test decision making guidelines, it can be concluded that there is an average difference between Pretest and Posttest scores in research on improving landslide disaster preparedness for the Krajan Hamlet community, Tulungagung Regency through poster media.

Table 4 Wilcoxon Test Result

Class	Mean	N	Sum Of Ranks
Negative Ranks	0,00	76	0,00
Positive Ranks	38,50		2926,00

Source: Results of data analysis, 2023

If reviewed further, it can be seen in table 4 that there was no decrease in the test scores at all from 76 respondents, but instead increased by a total of 2926 values and produced an average of 38.50. from these results it can be concluded that the use of poster media can reach all groups and is very effective if used further in subsequent research

3.4 Regression Test

Simple Linear Regression Test is a test intended to measure the magnitude of the influence of one independent variable or independent variable on the dependent variable or dependent variable. the purpose of this test is to find out whether the variable level of education influences disaster preparedness. In this study, the Simple Linear Regression Test was assisted with the help of Software whose results can be seen in Table 5. Simple linear regression test results.

Table 5 Simple Regression Test Result

Type	t	Sig.
(Constant)	3,470	0,001
Education Level	3,096	0,003

Source: Results of data analysis, 2023.

Based on Table 3 of the Simple Linear Regression Test Results, a sig regression value is obtained. 0.003 on the effect of education level on preparedness where the value is smaller than 0.05 (0.003<0.05), thus it can be concluded that the existence of education level variables will be able to influence disaster preparedness.

Fig.6 Poster Design

4. CONCLUSION

As stated in the literature review, this study discusses the effectiveness of poster media to improve preparedness in the Krajan hamlet community, Tulungagung Regency against land disasters Landslide, which aims to find out as well as increase preparedness knowledge in communities in affected areas. The sample taken in this study was the community of Dukuh Krajan, Tulungagung Regency as many as 76 respondents who were randomly selected.

In this study, there are two studies, namely Pre-Test and Post-test to determine knowledge and increase preparedness in the local community. each question in each Pre-Test and Post-Test consists of 3 questions and uses questionnaire questionnaires on a ratio scale of 1-100. After the data is taken from the field then in the analysis process is processed using the help of Software.

The results of the study were processed using validity tests, reliability tests, to find out whether the question items on the questionnaire were valid and reliable or not. A normality test is also carried out to find out whether the data obtained has been normally distributed or not. And the last is the Wilcoxon test to find out whether there are differences and improvements in the results of the tests that have been carried out through the poster media that has been given to respondents.

In the validity and reliability test, the results have been obtained to be valid and reliable even

though researchers must delete and eliminate the results on the Pre1 question, where the results on the validity test have far exceeded the r table which is 0.290 and the reliability test results have exceeded the requirements of the Alpha Cronbach reliability test which also means that the questionnaire can be said to be valid and reliable which can be reused because it has been declared consistent and trustworthy [4].

After the instrument test is carried out, it is continued with the normality test to find out whether the data has been normally distributed or not, which will later become a reference for conducting the next test where if the results are normally distributed, a parametric test is carried out, namely the Paired Sample T-Test test and if the data results are not normally distributed, an alternative test is carried out, namely the Test Wilcoxon. After conducting normality tests on the Pre-Test and Post-Test results using the Kolmogorov Smirnov Test, the same results were obtained at a value of 0.000 which was also far below the retrieval requirements The decision is 0.05. Then it can be concluded that the data obtained is not normally distributed which means that the data is not evenly distributed. Because the results on the normality test are obtained abnormally, then a non-parametric test is carried out.

To determine the difference in average values and the increase in results, the Wilcoxon test has been carried out. In the tests that have been carried out, it can also be seen that there is no decrease and the same value in the Post-Test with the average increase is 38.50. The Wilcoxon test also obtained a result of sig. 0.000 where the value has been far below 0.05 then the hypothesis H1 is accepted which means that there is a very increased yield significant from Pre-Test to Post-Test and poster media are very effectively used to improve and support landslide disaster preparedness in Tulungagung regency.

When compared to previous studies that examined the relationship of education level to land disaster preparedness, it resulted that community understanding of disasters was very minimal [5]. This also happened to the Krajan hamlet community, Tulungagung Regency which can be seen in the Pre-Test results is very minimal and there needs to be understanding and guidance from the community who is in a disaster-prone area.

Learning media that have benefits in the learning process to be more interactive and interesting [3] is also very helpful in providing more understanding of disaster mitigation, can be taken as an example In previous studies that discussed increasing understanding of disasters in adolescents through interactive videos also resulted in a significant increase [5] When compared to research using poster media which also produces significant improvements, poster media is a more effective medium than video media because to study it does not require objects electronics to display the learning material. Poster media can also be said to be very good if given not only to teenagers but very good also given to all age ranges.

In the aspect of influence, researchers found that some respondents keep and even put posters that have been given on the walls of the house so that they can be studied and used as guidelines in case of disaster. Poster media is still considered effective because it is easy to store and install anywhere, posters also still have visual appeal through images and information that is easy to understand [9]. And it can be known through the results of data processing by researchers that the delivery of information about disaster mitigation and preparedness can be remembered by respondents through the poster media that has been given.

The results of this research are certainly very useful in a government institutional organization such as BPBD and the community where it will be a study that the Krajan dukuh community, Tulungagung Regency have very minimal knowledge in dealing with landslides in the future and it is very necessary to hold programs to provide more understanding of disaster mitigation such as the provision of posters, which Where can minimize losses and casualties in future disasters.

In the effectiveness of posters there are differences where before and after giving posters, this can be seen from the results of hypothesis testing using the Wilcoxon Test which produces a value of 0.000 where the results are very far below 0.05 (0.000<0.05), thus it can be concluded that the knowledge of the people who are respondents in this study through Pre-Test and Post-Test Rated better and there is improvement. This can be seen from the different average results of Pre-Test and Post-Test, namely in the Pre-Test an average value of 29.01 and in the Post-Test an average value of 50.75 was obtained. This is in accordance with the purpose of this study.

The level of education also affects the understanding of disaster preparedness, this can also be seen in the results of testing using the Moderation Regression Test which resulted in an increase in value from 0.856 to 0.862. With the increase in results, it can be concluded that the level of education affects disaster preparedness knowledge.

Seeing from the vulnerability of natural disasters in Tulungagung Regency and the lack of

knowledge about disaster mitigation in the community, it is hoped that in the future the government will be more enthusiastic in responding to disaster mitigation in Tulungagung Regency, considering that in Tulungagung Regency, especially in Pagerwojo District, landslides often occur which are very detrimental to the government and the community. Based on this incident, it shows that Tulungagung Regency really needs preparedness efforts for natural disasters, especially landslides. This effort is very necessary with the holding of programs related to landslide disaster prevention and management, such as the existence of disaster simulation programs, preparedness seminars, and other social and community programs against landslide disasters researchers also hope that the people of Pagerwojo District, especially the people of Dukuh Krajan can apply disaster mitigation and preparedness that have been delivered during the research and remember Messages and information conveyed on the poster media that have been given to be useful in the event of landslides or other natural disasters and can reduce and minimize losses and casualties from disasters.

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