

## **The Effect of Flood Disaster Preparedness Education on Public Knowledge In Perigi Vilage Pulau Pinang Sub District, Lahat District In 2020**

**Kamesywor\*, Eka Haryanti**

*Poltekkes Palembang, Indonesia*

\* Correspondent Author: [kamesywor260473@gmail.com](mailto:kamesywor260473@gmail.com)

### **ABSTRACT**

Natural disasters can occur suddenly or through a process that takes place slowly. The occurrence of flood disasters is greatly influenced by natural factors in the form of rainfall that is above normal and the presence of rising tides. Disaster preparedness is a condition of a community that is both physically and psychologically sound in facing a disaster. The purpose of this study was to determine the effect of flood disaster preparedness education on public knowledge of Perigi Village, Pulau Pinang District, Lahat Regency. The research method used is a quassy experimental method with one group pretest-posttest design design. The study population was all families (communities) in Perigi Village, Pulau Pinang District, Lahat Regency. The sampling technique is incidental sampling. Data were collected from respondents by distributing questionnaires before and after counseling to respondents. Data were analyzed using the Wilcoxon test at the 95% confidence level with a significant value  $\alpha < 0.005$ . The results of the research from statistical tests obtained p value = 0.000  $\alpha < 0.005$ . The conclusion of this research is that there is an effect of flood disaster preparedness counseling on public knowledge of Perigi village, Pulau Pinang sub-district, Lahat Regency. Suggestions for the need for education on flood disaster preparedness for family knowledge so that it can be applied.

**Keywords:** Education, Knowledge, Flood disaster

Received December 12, 2020; Revised December 22, 2020; Accepted January 30, 2021



STRADA Jurnal Ilmiah Kesehatan, its website, and the articles published there in are licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

**BACKGROUND**

Indonesia is a region prone to various types of disasters, including natural disasters. Natural disasters are natural phenomena that can result in environmental damage and destruction which in turn can cause casualties, property losses and damage to developments that have been built so far. One of the natural phenomena that causes huge losses that always threatens several regions in Indonesia is the flood disaster. Flood is an ordinary natural phenomenon, but it will be very detrimental if it threatens the existence of human life.

In Indonesia, there are 5,590 main rivers and 600 rivers of which have the potential to cause flooding. The flood-prone areas covered by the main river reach 1.4 million hectares. From various studies that have been carried out, the floods that hit vulnerable areas are basically due to three things. First, human activities that cause spatial changes and have an impact on natural changes. Second, natural events such as very high rainfall, rising sea levels, storms, and so on. Third, environmental degradation such as loss of ground cover vegetation in the *catchment area*, silting rivers due to sedimentation, narrowing of river channels and so on.

Head of the National Disaster Management Agency (BNPB), Lt. Gen. Doni Monardo said, "the preparedness of the community and local government (Pemda) in facing floods, earthquakes and tsunamis in Indonesia is still quite low". The results of the BNPB study on community and local government preparedness in the face of disasters in 33 provinces in Indonesia, it turns out that all regions show that the level of community and local government preparedness is still low. Disaster knowledge indicators have increased but policy indexes, emergency response plans, early warning systems and resource mobilization are still low (<http://mediaprofesi.com>).

The National Disaster Management Agency (BNPB) noted that during April 2019 there were 256 natural disasters. As a result, 58 people died and 11 people disappeared in one month. BNPB said the disaster that hit Indonesia in April varied, from floods to volcanic eruptions. "Of the 256 incidents of which the most occurred were floods and landslides. Then followed by tornadoes, forest and land fires, earthquakes, volcanic eruptions, and tidal waves or abrasions," said Head of Data Information and Public Relations of BNPB Sutopo Purwo Nugroho. at the BNPB Building, East Jakarta, Tuesday (4/30/2019). BNPB also noted that 111,876 people were displaced and affected by natural disasters throughout April 2019. 91 percent of the victims were those affected by floods.

The National Disaster Management Agency assessed that South Sumatra, which consists of 11 districts and four cities, is prone to natural disasters, especially floods, landslides and fires. Based on data, almost every disaster that occurs in the province has the most flood problems. Apart from flood disasters, this area also frequently occurs fires, landslides and tornadoes. the arrival of a disaster is not predicted so that people must always be vigilant. The BPBD of South Sumatra recorded 143 disasters in the region throughout 2017. The disaster killed 19 people and injured dozens of others. Meanwhile, the total losses from this year's floods have not been recorded. However, last year the total losses were quite large, namely 605 hectares of rice fields were damaged, 1,991 hectares of gardens were submerged, and caused thousands of residents to flee.

Research conducted by Sobri (2014) found that more than part of the community has low knowledge of disaster preparedness. According to LIPI UNESCO ISDR, the lack of knowledge to start a disaster preparedness movement will increase the number of casualties. Chairunnumi (2013) that disaster risk reduction preparedness is needed, especially in dealing with disasters due to the lack of public knowledge, which is the most vulnerable risk to victims during a disaster.

Data from the Lahat district BPBD on Thursday, December 6 2018, there was a flash flood in the Pulau Pinang District, Lahat Regency. The floods hit Perigi and Lubuk Sepang villages due to overflowing of the Lematang and Liem rivers. Which causes dozens of residents' houses to be submerged. Apart from the two villages mentioned above, flooding also occurred in the village of Tanjung sirih. The flood occurred around 17.00 WIB, due to the overflowing of the Ayik Pauk and the Liem River, which empties into the Lematang River. The flood caused the retaining wall of the Liem River to collapse along 20 meters. As well as destroying the village inventory storage warehouse which is directly adjacent to the Liem river retaining wall.

This is what makes researchers interested in conducting research on the effect of flood disaster preparedness education on the knowledge of the people of Perigi village, Pulau Pinang District, Lahat Regency in 2020

## METHODS

This research is a quantitative study with a *quasi-experimental*, this study uses approach *non-randomized* with *one group pretest-posttest design*. This research will be conducted in Perigi Village, Pulau Pinang District, Lahat Regency. The population of this research is the people of Perigi Village, Pulau Pinang District, Lahat Regency. The sampling technique used in this research is incidental sampling / accidental sampling. Sugiono (2016) accidental sampling technique is a sampling technique based on chance, that is, consumers who accidentally / incidentally meet with researchers can be used as samples, if it is considered that people who happen to be met are suitable as data sources. The population in this research is all family heads or family members who have grown up in the Perigi village, Pulau Pinang sub-district, Lahat Regency. This research was conducted during the Covid 19 pandemic, so it is very vulnerable to accumulate large amounts of time. The counseling was divided into two groups with strict health protocols by distributing masks, wearing face shelves, washing hands and adjusting sitting spacing. And if the number of respondents is less, counseling will be carried out from house to house in accordance with the sample desired by the researcher. With the inclusion criteria, namely the family in Perigi village, adult family members can communicate well and are willing to be respondents. And the exclusion criteria for family fathers / mothers who refused to become respondents and families who were sick or not at home when the study was conducted. The instrument in this study used a questionnaire and SAP.

The research data collection procedure was carried out by submitting a research permit from the Lahat District Health Office to the Head of the Pulau Pinang Community Health Center and the Head of the Perigi Village. At the time of conducting counseling, the researcher explained the *informed consent* and the questionnaire. After all respondents have finished filling out the questionnaire in this case is the pretest, the researcher will collect the questionnaire then provide information on flood preparedness with an outreach program for 20 minutes, after completing the researcher distributes the questionnaire in this case the post test. After the procedure is complete and the data is collected. The researcher will check the completeness of the data obtained from the respondents. The data that has been collected is processed with a computer system in the SPSS (*Statistical Product and Service Solution*) program with the stages of *editing, coding, processing and cleaning*.

Data analysis in this research is univariate analysis which aims to explain / describe each research variable. Bivariate analysis is an analysis carried out on two variables which are thought to be related or correlated. Wilcoxon test was performed with a significance level of 95% ( $\alpha \leq 0.05$ ). The statistical test used in this study is the *Dependent T Test*.

## RESULTS

The research results show that The frequency of respondents based on the gender of the respondents was mostly female / female as many as 38 (63%) respondents while male respondents were 22 respondents (27%). Most of the respondents are women, this is because some of them are housewives who always do work in their household. Based on the age of respondents in Perigi village, the largest proportion was the Adult group as many as 42 respondents (70%) and the elderly group as many as 18 respondents (30%). The results of the study show that age also affects a person's knowledge, such as the opinion according to Latipun (2006) that several internal factors can affect a person's knowledge, including: traits, personality, innate talents, intelligence and age. At a certain age, a person experiences a development and maturation process. The age factor is in line with individual experiences. The older a person is. Then the more experience the individual has. Based on the occupation of respondents in Perigi village, the majority of respondents were housewives, 38 respondents (63%) and 22 respondents (27%) worked as laborers.

This shows that the majority of respondents' jobs are housewives, because they do all the work at home. According to Wikipedia, a housewife is a woman who works to run or manage her family's home, is responsible for educating her children, cooking and serving food, buying daily family necessities, cleaning and maintaining the house, preparing and sewing clothes for the family and so on. Meanwhile, Merriam Webster dictionary defines a housewife as a married woman who is responsible for her household

**Table 1. Distribution of Respondents by Gender**

No	Gender	n	%
1	Male	22	37
2	Female	38	63
	Total	60	100

Source: 2020 Primary Data

**Table 2. Distribution of Respondents by Age Range.**

No	Age Range	n	%
1	Adults: 26 - 45	42	70
2	Elderly: 46 - 65 years	18	30
3	Seniors $\geq$ 66	-	-
	Total	60	100

Source: 2020 primary data

**Table 3. Distribution of responses based on type of work**

No	type of work	n	%
1	TNI / POLRI / PNS	-	-
2	Workers (Sand / Stone Craftsman)	22	37
3	Housewives	38	63
	Total	60	100

Source: 2020 Primary Data

**Table 4. Distribution of Respondents Based on Knowledge Before Counseling**

No	Knowledge	n	%
1	Good	3	5
2	Enough	34	57
3	Less	23	38
	Total	60	100

Source: 2020 Primary Data

**Table 5. Distribution of Respondents Based on Knowledge After Counseling.**

No	Knowledge	n	%
1	Good	10	17
2	Enough	45	75
3	Less	5	8
	Total	60	100

Source: 2020 primary data

**Table 6. Effect of Flood Disaster Preparedness Counseling on Community Knowledge in Perigi Village, Pulau Pinang District, Lahat Regency.**

Variable Knowledge Level	Knowledge				
	N	Mean	SD	SE	P
Before counseling	60	2.33	0.57	0.07	0.000
After counseling	60	1.93	0.52	0.07	

Source: Primary data 2020

## DISCUSSION

The results of the study of the level of knowledge before being provided with information on flood disaster preparedness were: 3 respondents had good knowledge, 34 respondents had sufficient knowledge and 23 respondents had less knowledge. This shows that most respondents do not understand correctly about flood disaster preparedness. Notoatmojo (2007) states that knowledge or cognitive is a very important domain in shaping a person's actions or behavior. Knowledge will be more lasting than behavior that is not based on knowledge.

The results of the research on the level of knowledge after being provided with information on flood disaster preparedness were: 10 respondents had good knowledge, 45 respondents had sufficient knowledge and 5 respondents had less knowledge. This shows that respondents who have been given education on flood disaster preparedness understand well and are expected to be able to implement it in the event of a flood disaster. Notoatmojo (2012) said that understanding is the ability to correctly clarify a known object and can interpret the material correctly. Acceptance of new behavior or adoption of behavior that is based on knowledge of awareness and positive attitudes, then the behavior will be lasting.

The results of data analysis on the level of knowledge showed that at the pretest the majority of respondents had a moderate level of knowledge of 56%, less by 38% and good 6%. Meanwhile, at the time of the post-test, it was found that the level of knowledge was moderate at 75%, both 16% and less than 9%. Thus the hypothesis which states that there is an effect of education about flood disaster preparedness on the level of public knowledge in Perigi village is acceptable (statistical test results obtained p-value 0.000,  $p < 0.005$ ).

This is in line with similar research conducted by Muhammad Irfan Jaya et al (2013) on the influence of counseling on flood disaster preparedness on the knowledge and attitudes of family heads in Romang Tangaya Village, Tamangapa Village, Manggala District, Makassar City, which states that there is an influence of counseling on flood disaster preparedness on the level of knowledge of the head of the household with a significance value of  $p < 0.005$  ( $p = 0.000$ ).

Matura (2011) conducted a similar study, concerning the effect of health education on changes in the level of public knowledge in Banyuwangi village which stated that there was an effect of health education on changes in the level of public knowledge with a significance value of  $p < 0.005$  ( $p = 0.03$ ).

## CONCLUSION

From the results of the research, the effect of education on flood disaster preparedness on public knowledge in Perigi Village, Pulau Pinang District, Lahat Regency can be drawn a conclusion: Community knowledge about flood disaster preparedness before being given intervention in the form of less knowledge extension 23 people or 38% and good knowledge of 3 people or 5%, after being given counseling, the knowledge is less than 5 people or 8% and good knowledge becomes 10 people or 18%. There is a level of difference before and after education is given and there is an effect of flood preparedness education on public knowledge.

## REFERENCES

- Arikunto, Suharsimin, 2002, *Research Procedures (An Approach and Practice)* Jakarta: Rineka Cipta.
- Bakornas .PB. 2014. *Introduction of Disaster Characteristics and Mitigation Efforts at Indonesia* Jakarta. National Disaster Management Authority.
- BNPB. 2012. *Potential Disaster Threats* : [http / bnpb.go.id](http://bnpb.go.id). Retrieved 10 July 2020.
- BNPB. 2014. *Community Participation in Disaster Management*.
- Christen.LM (2001).*Experimental Methodology*. Boston: Allyn and Bacon
- Dien, Riedel Jiemly. 2015. *The Effect of Health Education on Earthquake Disaster Preparedness for students of SMP Kristen Kakaskasen, Tomohon City*. Journal of Nursing Vol 3no 2 (2015) E-Journal of Nursing.
- Disaster*. Jakarta: National Disaster Management Agency (BNPB) Volume 1 Noor 1, October 2010
- Djafarr IMMantu FN & Patellogi II (2013). *The Influence of Counseling on*
- Firmansyah.I. 2014. *Relationship between Knowledge and Preparedness Behavior in Facing Flood and Landslide Disasters in adolescents aged 15-18 years at Al-Hasan Kemiri High School, Panti District, Jember Regency*. [http // journal.unair.ac.id](http://journal.unair.ac.id)
- Flood Disaster Preparedness on the Knowledge and Attitudes of the Head of the Family in Romang Tangaya Village, Tamangapa Village, Manggala District, Makassar City*. Journal of Personality and Social Psychology.
- Herdwiyanti (2012). *Differences in Disaster Preparedness in terms of the Level of Self-Efficacy in Elementary School-aged Children in the Mount Kelud Disaster Impact Areas*.
- Indonesian Disaster Education Consortium (2011). *Disaster Preparedness School Framework*.
- Jacklin Rifka Sasikome, 2015: *The Effect of Flood Disaster Counseling on the Preparedness of Soegiyo Pranoto Manado Catholic Middle School Students Flood*, Nursing Study



- Program, Faculty of Medicine, Sam Ratulagi University,  
Law of the Republic of Indonesia number 24 of 2007: concerning *Disaster Management*  
LIPI-UNESCO / ISDR (2006). *Assessment of Community Preparedness in anticipation of Earthquake and Tsunami Disasters*.
- Mawardi, E & Sulaeman, A. 2011, *Community Participation in Reduction Flood Risk*  
Surakarta: Center for Research and Development of Water Resources.
- Ministry of Health of the Republic of Indonesia (2010): *Guidelines for Disaster Management in the Health Sector*.
- Ministry of Health of the Republic of Indonesia, *Summary of Study of the Integrated Disaster Management System in Indonesia*.
- National Disaster Management Agency (2010), *Journal of the Dialogue for Disaster Management*
- Notoadmojo. 2012. *Health Promotion: Theory and Application*. Jakarta Rineka Cipta.
- Pangesti.ADH (2012). *Description of Knowledge Level and Application of Disaster Preparedness for Students of the Faculty of Nursing, University of Indonesia in 2012*.
- Sabri. (2014). *The Effect of Integrating Disaster Material into the Curriculum on Earthquake and Tsunami Disaster Preparedness in Elementary and Middle School students in Banda Aceh*
- Suwardianto, H. (2018). Level Of Perception Emergency Skills In Youth Red Cross. *Journal Of Nursing Practice*, 2(1), 17-24.
- Suwardianto, H., & Rimawati, R. (2018, September). Explicit Instruction Model (EIM): Daily Training Emergencies Preparedness (DTEP) Toward Skills of Participants the Youth Red Cross. In *The 2nd Joint International Conferences* (Vol. 2, No. 2, pp. 403-410).
- Suwardianto, H., & Selvia, D. (2015). Buku ajar keperawatan kegawatdaruratan (perspektif, konsep, prinsip, dan penatalaksanaan kegawatdaruratan). Surabaya: PT. REVKA PETRA MEDIA.