

## Health Public Education in Coastal and Urban Community Preparedness in Dealing with Natural Disasters in East Sumba in 2019

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### Abstract

*Disasters are a series of life-threatening and life-threatening events caused by both natural, non-natural and human factors so resulting in human casualties, environmental damage, property losses, and psychological impacts. The purpose of this study is to Know the Overview of Community Knowledge, the socialization of BNPB officers, population preparedness and health promotion carried out for coastal and urban areas in the face of natural disasters. This type of research uses an observational approach with cross sectional design. This research was conducted from September to November 2019. The population of this study were all residents in 6 (six) villages in East Sumba district, which totaled 14672 residents. The sampling technique uses random sampling with a total of 43 respondents per village. The results showed that the description of public knowledge, is in the category of "Very Good" ! Description of BNPB Officer Socialization, Descriptive analysis results show that the socialization variable is of Very Poor value with a total score /  $Yx150 = 405/750 \times 100 = 45.00\%$ . Variable community preparedness with the very important category and value analysis of the score /  $Yx150 = 623/750 \times 100 = 82.07\%$  this it means to show that the preparedness variable is very important for the community's own readiness. Overview of health promotion in the category of "Not done Result analysis of the total score /  $Yx150 = 352/750 \times 100 = 46, 93\%$ . Conclusion is very good knowledge about natural disaster preparedness of coastal and urban communities in east sumba district, socialization by BNPB officers is still minimal, community preparedness is very good and has not gone well with health promotion by health workers about natural disaster preparedness in coastal and urban communities in the region East Sumba.*

*Keywords: Knowledge, socialization, preparedness and health promotion, natural disasters*

### 1.0 INTRODUCTION

Disasters are a series of events that threaten and disrupt life caused by both natural factors, non-natural factors and human factors, resulting in human casualties, environmental damage, property losses, and psychological impacts (Law No. 24, article 1, on disaster management, 2007). Indonesia is a country that has high-risk areas for disasters.

Disasters that occur in Indonesia, the intensity or volume of events can reach more than 1,000 times a year or reach 3 times a day (Sugandi, 2010). When disaster comes, the government and the community have not been able to deal with emergency problems, this situation needs to be addressed, namely efforts to make disaster preparedness both by the community, government and professional groups (Sugandi, 2010).

Based on media reports [Detik News.com](http://Detik News.com) BNPB data sources and the National Meteorology and Geophysics Agency that in 2018: the number of victims of disaster more than the previous year as stated by the Head of BNPB Soetopo, 31 December 2018 as follows the number of deaths increased 984 lives, missing victims rose 1,972 lives, injured victims rose 1,996 percent, victims lost homes and damaged rose 1,341 lives, displaced victims rose to 178 lives and this natural phenomenon is the largest from 2017.

The implementation of disaster preparedness not only involves the domestic government and abroad including NGOs engaged in humanitarian and natural disasters. The goal in disaster preparedness is to ensure that the right systems, procedures and resources are ready in their respective places to provide effective and immediate human and material assistance as quickly as possible to disaster victims so as to facilitate steps in recovery and rehabilitation.

As one of the important components in disaster response response, health workers [nurses] have a very big role. Failure of nurses' roles and responsibilities results in failure in dealing with disaster victims. So in addition to expert nurses in their fields, nurses also need to know how disaster preparedness is applied so as to minimize disaster risks and increase the success of disaster victims. The activity of

disaster preparedness is to form an inseparable part of the national system that is responsible for developing disaster management plans and programs which include: prevention, mitigation, preparedness, response, rehabilitation or reconstruction (Fauziah, 2006).

The earthquake in the region of Sumba according to the BMKG [Meteorology and Geophysics Agency] East Sumba Regency in 2017 more than 100 times a year with vibration intensity less than 5 Richter Scale and a depth of 10 km in the Sumba seabed, specifically in the Eastern Region of Pulasu Sumba more than 50 times a year in earthquakes and 50 times in the west. In 2018 110 times with intensity reaching from 6.3 SR on 2 October 2018 while other events reached 5 SR and depth of 10 km in the Sumba seabed, events in the Eastern Region were 73 times and the western region 37 times a year, until March in 2019 according to BMKG East Sumba Regency has reached 231 times with a vibration intensity of less than 5 on the Richter Scale. Seeing the occurrence of quakes from vibrations of less than 5 SR to more than 5 SR gives an important signal for the community and officials in the relevant agencies to always be with the community in preparedness. The agencies in question are officers in the BMKG area in the Sumba region and health workers in the Sumba area both in urban and coastal areas.

## 2.0 METHODOLOGY

This type of research uses an observational approach with a cross sectional design. This research was conducted from September to November 2019. The population of this study were all residents in 6 (six) villages in East Sumba district, which totaled 14672 residents. The sampling technique uses random sampling with a total of 43 respondents per village.

Calculation of the sample as the following table:

Table 1 Distribution of Total Sample Research in East Sumba September- November 2019 Month

/ District Village	Population	Presentati on	samplesJlh
VillageNggongi	2.875	1%	28.75
Weijelu Village	2.302	1%	23.02
Village Lailunggi	2,202	1%	22.02
Rambangaru Village	2,206	1%	22.06
Kamalaputi Kel	2,653	1%	26.53
Kel Hambala	2,434	1%	24.34
<b>Total Population</b>	<b>14,672</b>	<b>1%</b>	<b>146.72</b>

## 3.0 RESULTS

This research was conducted in East Sumba Regency which was divided into 4 large groups namely eastern group namely Weijelu village, northern area of Rambangaru village, southern area of village Nggongi and the village of Leilunggi 20kk and the central area of the city is Waingapu.

Table 2 Earthquake Statistics in Indonesia in 2016-2019

No	Year	Average Earthquake	Presentation
2016			
1	Earthquake Strength <5 SR	5400 times	96.81
2	Earthquake Strength> 5 SR	178 times	3,191
Total		5578 times	100.00
2017			
1	Earthquake Strength <5 SR	5,974 times	86.22
2	Earthquake Strength> 5 SR	955 times	13.78
Total		6929 times	100.00
2018			

1	Earthquake Strength <5 SR	times	5,67894.63
2	Earthquake Strength > 5 SR	322 times	5.37
Total		6000 times	100.00
2019			
1	Earthquake Strength <5 SR	4,232 times	97.18
2	Earthquake Strength > 5 SR	2,331 times	2.83
Total		4463 times	100.00

Source, *BMKG Waingapu 2019*

Based on these data the number of earthquakes with the most frequency occurred in 2017.

No	Education Level	Number of	Presentations
1	SD	50 people	33.33%
2	SMP	46 people	30.67%
3	SMA	32 people	21.33 %
4	Bachelor / S1	22 people	14.33%
Total		150 people	100.0%

Table 3 Distribution of Education Level of Respondents in East Sumba in September–November 2019

The table above explains the highest frequency of elementary school graduates 33.33%.

Table 4 Distribution of Respondent Occupations in East Sumba in September–November 2019

No	Occupation	Number of	Presentations
1	Farmer	37	24.67
2	Fishermen	68	45.33
3	Civil Servants	26	17.33
4	others	19	12.67
The number is		150	100.00

The table above explains the most frequency is fishermen 45.33%. This is because some people have a place to live around the beach.

Table 5 Distribution of Respondent Variables on Preparedness in facing Natural Disasters in East Sumba September–November 2019

No	Type of Variable	Score					Total	
		5	4	3	2	1		
1	Knowledge	Y	66	44	26	10	4	150
		X	330	176	78	20	4	608
2	Staff Socialization	Y	13	28	30	59	20	150
		X	65	112	90	118	20	405
3	Preparedness	Y	67	46	32	3	2	150
		X	335	184	96	6	2	623
4	Public Health Promotion	Y	5	16	33	68	28	150
		X	25	64	99	136	28	352

Likert skala table analysis can be done in several sequences to obtain results in accordance with the standard operational definitions, namely the categories of positive and negative statements.

## 4.0 DISCUSSION

### 4.1 Overview of Respondent's Knowledge

Explain that the description of public knowledge, the results of descriptive analysis shows the variable knowledge total score /  $Y \times 150 = 608 / 750 \times 100 = 81.07\%$  which being in the category of "Very Good" means that the current improvement in information technology can increase public knowledge in dealing with natural disasters in coastal and urban areas in East Sumba Regency.

Natural disasters are natural phenomena that occur suddenly and sometimes people do not have time to prepare themselves properly. Research results based on Likert scale analysis get a score of 81.07% which is in the category of "Very Good" community knowledge about natural disasters in coastal areas and urban areas in the district of Sumba, this is caused because the standard of knowledge is the result of the senses which consist of the most dominant hearing and vision which is supported by the development of the era of information and technology.

The information obtained by the public is most likely the advance of information technology through both social media and electronic media can be monitored in remote areas of East Sumba. In contrast to the results of this study conducted by Fajria Pawestriana, 2016 showed that low knowledge was 26.30%, moderate was 48.08% and high knowledge was 25.00% in the community knowledge of disaster mitigation [earthquake and volcano] in Banyumas this indicated that knowledge was being still dominates the Banyumas community about volcanic disaster mitigation.

Natural disasters are always followed by giving preliminary warnings even though only a few seconds or minutes through the sensory hearing and vision, but the warning is very unfriendly because it goes quickly and must make each of us responsive in making decisions to save ourselves. This research has shown that community knowledge in East Sumba that is very good in managing information on natural disasters must be maintained and further enhanced and coupled in preparing where and when disasters will occur. The matter of self-preparation was conducted a study on natural disaster management by Nandian Marieta, 2014 which said that disaster management can be interpreted as efforts to plan, organize, supervise, implement and direct all resources in the event of a disaster (disaster) in an area. Therefore, people in the coastal and urban areas of East Sumba really need to increase their knowledge and awareness in facing natural disasters when and where they will occur and befall the community.

### 4.2 Officer Socialization

Overview of BNPB Officer Socialization, Descriptive analysis results show the socialization variable with a value of "Very Less" with a total score /  $Y \times 150 = 405 / 750 \times 100 = 45.00\%$  ones this means that BNPB Regency Level officials are still very minimal to conduct regular outreach about natural disaster management. The results of the study using a Likert scale descriptive analysis obtained very poor socialization results. Conducted on 150 respondents in 4 regions of East Sumba Regency such as Weijelu, Nggongi, Lailunggi, Rambangaru, urban hambala and kamalaputih. The value obtained was <50.00% meaning that the socialization of Natural Disasters was not carried out by National Disaster Management Agency of East Sumba Regency did not run in the coastal and urban areas of East Sumba Regency.

The 2017 Indonesian Dictionary says that socialization is an effort to socialize something so that it becomes known and understood and lived by the community itself and can be used to act or process. Research by Muslimin, 2018 in addition to introducing an understanding of natural disasters, it is also very necessary to form a Village Disaster Management Forum, Disaster Resilient Volunteers and Dissemination Pathway for gathering points and evacuating natural disasters. Understanding disaster socialization to the community should not be considered something unnecessary or deemed normal / trivial or underestimated by those authorized to do it so as to impress the public authorities the authorities have never conducted a socialization on natural disasters. Socialization can be a culture or self-adhesive to something that is considered important but is ignored.

East Sumba Regency in accordance with a history of decades ago Natural Disasters had occurred, namely an earthquake with a magnitude of > 7 SR and caused considerable human casualties. Thus, the awareness that is inherent in the community needs to be given with the concept that is the socialization and awareness of natural disasters.

#### 4.3 Community Preparedness and

Variable community preparedness with the very important category and value analysis of the score /  $Y \times 150 = 623/750 \times 100 = 82.07\%$  this meaning that it shows that the preparedness variable is very important that the community's own readiness by learning information is always on standby anytime and anywhere. The results of the study used a Likert scale descriptive analysis obtained the results of a picture of Medium Community Preparedness with a value of 65.20%. Conducted on 150 respondents in 4 regions of East Sumba Regency, such as Weijelu, Nggongi, Lailunggi, Rambangaru, urban hambala and kamalaputih. Indonesian Dictionary defines Preparedness is a state of being ready to act or ready to use. Nurlailah Umar, 2013 conducted research on preparedness to deal with flood disasters, thus interpreting that Preparedness in dealing with floods helped the community in forming and planning what actions need to be taken when flooding.

Nandian Marieta, 2014 in the research on knowledge and management of natural disasters also said that as a result of the unpreparedness of the community against natural disasters will occur either by natural, non-natural or human will cause the following impacts: Victims died, Victims of injuries, property damage and property, damage to land, animals and plants, loss of production, loss of livelihood / livelihood, loss of public services, damage to infrastructure and infrastructure, economic losses, social and psychosocial impacts.

#### 4.4 Public Health Promotion

Overview of health promotion in the category of "not fulfilled" The results of analysis of the total score /  $Y \times 150 = 352/750 \times 100 = 46,93\%$  means that the variable health promotion which is conducted by health workers do not walk both coastal and urban communities in the East Sumba region.

The results of the study using a Likert scale descriptive analysis obtained a description of the community health promotion never with a value of 40.20%. Conducted on 150 respondents in 4 regions of East Sumba Regency such as Weijelu, Nggongi, Lailunggi, Rambangaru, urban hambala and kamalaputih. The value obtained was 40.20%, meaning that coastal and urban community health promotion was not carried out at all.

The Indonesian Dictionary defines Promotion as the transfer of levels, when combined with the word health into health promotion, this implies that health promotion is an effort to improve the ability of the community through self-learning by and for the community to help themselves, and develop resource-based activities the community is in accordance with the local socio-culture and is supported by public health policies (Ministry of Health, 2011).

Meanwhile in the concept of understanding about natural disasters the presence of health promotion seems to be carried out after natural disasters in an area or place and according to researchers, the application of health promotion by health workers up to now has not been matched to the community in terms of self-awareness of natural disasters.

Why is that because of the Ministry of Health's understanding, 2011 that empowers people to be able to help themselves when there is an event / problem. While the research results of 40.20% of the community have never been touched by what is called the Ministry of Health, 2011 about empowering the community to help themselves, so researchers are prejudiced that until now the public has not been exposed to information about their health preparedness in the event of a natural disaster.

Heni Trisnowati, 2017 in her research on health promotion in disaster in Jogja, 2017th said that health promotion in a state of disaster is very beneficial in maintaining and improving the health of survivors in refugee camps. Involvement of refugees in health promotion activities is needed to ensure the sustainability of the program.

#### CONCLUSION

Overview Knowledge Society 'Very Good' means increasing current information technology can improve public knowledge in facing natural disasters in coastal areas and urban areas in East Sumba

Overview Dissemination Officer BNPB are in the category of "Very Less" means officers Management Agency disaster District level should socialize regularly about disaster management in coastal areas and urban areas in East Sumba

Overview community preparedness in the category of "Very Important " means the readiness of the community itself to learn the information is always alert whenever and wherever

Overview community preparedness are in the category "Not implemented" means that coastal and urban communities really expect officers to promote health in the face of natural disasters anytime and anywhere.

#### SUGGESTIONS

Health Officers Need to conduct education and health promotion to all coastal areas and urban areas about preparedness and alertness to natural disasters

BNPB Officers Need to conduct counseling and distribution of brochures that contain the readiness of the community in dealing with natural disasters, especially in Sumba, both coastal and urban communities.

Further Researchers Statistical analysis of the variables considered to be very relevant to the community's vigilance in dealing with natural disasters anytime and anywhere.

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