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Correlation between Coping Strategies and Psychological Well-being in Communities Affected by Tidal Flood

Abstract: Communities affected by tidal flooding, need psychological treatment to overcome various problems that arise. The purpose of this study was to analyze: 1) strategic coping of communities affected by tidal flooding, 2) psychological well-being of communities affected by tidal flooding, 3) differences in strategic coping of communities affected by tidal flooding in the three regions, 4) differences in psychological well-being of communities affected by tidal flooding in the three areas, 5) the correlation between strategies coping with psychological well-being in communities affected by tidal flooding. Samples were recruited by purposive sampling of 84 respondents. Data analysis uses Spearman rank correlation and Kruskal Wallis. The results obtained by the average strategic coping of 96.73 with a range of values (79-112). Psychological well-being has an average value 197.39 with a range of values (159-228). Spearman rank results proved to be a relationship between coping strategies with psychological well-being (p value: 0,000; r of 0.620) with the strength of a positive relationship (0.620). Kruskal Wallis test results show differences in respondent coping strategies among the three regions taken as research samples with p value: 0.018 < 0.05. Kruskal Wallis test results showed no differences in psychological well-being of respondents among the three regions taken as research samples with p value: 0.340 > 0.05.

Keywords: coping strategies, psychological well-being, tidal flood

INTRODUCTION

Coastal north coast of Java, Indonesia is one of the areas prone to tidal flooding, because it has a sloping topography, so that at high tide sea water easily enters the land. Marfai et al (2008), Hardoyo et al, (2011), explained that tidal floods include flooding caused by the entry of sea water into the mainland due to high tides. This phenomenon is classified as a natural disaster when it is associated with humans and their activities. The impact of disasters affects various aspects of the system family. Disaster risk from the economic aspect results in families losing livelihoods, damage to property and loss of material that is asset family (Sunarti & Fitriani, 2010). Disaster victims who have economic limitations will be at risk of experiencing psychological disorders, such as stress.

Therefore, the handling of communities affected by tidal floods is not only physical but also psychological with people's understanding and experience of coping strategies to overcome the situation from situations that are pressing or threatening. This is in accordance with Marfai et al (2008), Hardoyo et al, (2011) which states that in

natural disaster management in coastal areas, community response to disasters is very important to understand. Disaster emergency response is a series of activities carried out immediately at the time of a disaster to deal with the bad impacts, which include activities to rescue and evacuate victims, property, fulfillment of basic needs, protection of management of refugees, rescue, and restoration of infrastructure and facilities (BNPB, 2008).

According to Lazarus & Folkman, (1984), Kozier, (2011) explains that coping strategies as a form of cognitive effort or behavior of someone to regulate internal and external demands arising from the relationship of individuals with the environment. These efforts include: reducing, minimizing and holding back. Coping strategies undertaken by flood-prone areas do not just appear, but rather through a long process and experience. Lazarus & Folkman (1984), Siti Maryam (2017) classify coping strategies into two, namely problem focused coping and emotion focused coping.

Apart from these problems, flooding can have a negative effect on people living in disaster-prone areas, thereby reducing their well-being and life satisfaction. Carr

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D, (2004), Lindawati, (2015) states that individuals who have achieved psychological well-being will experience high life satisfaction. This means coping strategies contribute to the achievement of psychological well-being in disaster-prone communities. Tidal floods on the north coast of the island of Java, especially in the City of Pekalongan have been around since the 1980s, but people still survive to remain in the area. Hardoyo et al (2011), explained that the survival of the community to stay alive was triggered by several things, namely the environment that had been formed in togetherness, close to the workplace and the economy which made it impossible to move.

METHOD

Research was carried out on the north coast community of the island of Java, precisely in the city of Pekalongan, which is prone to tidal flooding. The study was conducted for three months, namely in July, August, and September 2019.

The location sample was determined based on the socio ecological differences criteria that each village had. The concept of socio ecology is social interaction between humans who occupy their environment. These socio-ecological differences will differentiate the character of the community, so that it is expected to have its own characteristics of coping strategies in overcoming tidal flooding towards the achievement of psychological well-being.

The area of risk of tidal flooding on the north coast of Pekalongan City, has three different socio-ecological characteristics, namely densely populated residential areas, agricultural areas (rice fields), and pond areas. The three regions, namely: the Panjang Baru village with a densely populated social ecology, the Bandengan village with an agricultural socio ecology (rice field), and the Krapyak Lor village with a pond socio ecology.

This research design uses quantitative descriptive methods which aims to find out the coping strategies used by the community in dealing with annual tidal floods. Coping strategies used by the community are further correlated with the level of psychological well-being.

The population in this study is the community in areas affected by tidal flooding on the north coast of the city of Pekalongan. **The location sample** is determined based on the socio ecological differences criteria that each village has. The concept of socio-ecology is social interaction between humans who occupy the environment. These socio-ecological differences will differentiate the character of the community, so that it is expected to have its own characteristics of coping strategies in overcoming tidal flooding towards the achievement of psychological well-being.

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The research sample was obtained by purposive sampling technique with the following criteria: 1) residing in a tidal flood area, 2) being a nuclear family, 3) willing to be a respondent. It aims to get certain respondents who can provide information according to their objectives, the concept of coping strategies and psychological well-being. A sample of 28 respondents in each location, with a total of 84 respondents.

The research instrument uses the Ways of Coping Checklist made by Lazarus and Folkman (1984), which has been translated into Indonesian and has been tested for Validity and Reliability by Dahlan (2005), as well as the Psychological Well-being Scale developed by Ryff (1989).

The collected data were analyzed using the Spearman Rank correlation test to determine the relationship between coping strategies with Psychological Well-Being. To find out the differences in coping strategies and Psychological Well-Being among the three village in the study area using the Kruskal Wallis test

RESULTS

Strategic Coping

Table 1. shows that strategic coping respondents average 96.73 with strategy the lowest coping79 and the highest value 112.

Table 1. Distribution of Strategic Coping Values of Respondents

Variable	N	Mean	Median	Min	Max
Strategic Coping	84	96.73	97	79	112

Psychological Well-being

Table 2. shows that psychological well-being respondents on average 197.39 with the lowest value and the highest value 228.

Table 2. Distribution of Psychological Well-being Values Respondents

Variable	N	Mean	Median	Min	Max
Psychological Well-being	84	197,39	197	159	228

Strategic Relationships Coping with Psychological Well-being

Table 3. shows that the results of the strategic coping normality test are obtained sig: 0,000 <0.05 so the research data is said to be abnormally distributed. The

Table 3. Normality Test Results

Normality Test	Shapiro-Wilk		
	Statistic	df	Sig.
Strategic coping	0,764	30	0,000
Strategic coping (transformation)	0,764	30	0,000
Psychological Well-being	0,892	30	0,005

researcher transformed the results of research the strategy coping, then conducted a normality test and obtained sig: 0,000 <0.05 so that the data were not normally distributed. Researchers conducted the Kolmogorov-Smirnov normality test results of research psychological well-being obtained sig: 0.267 > 0.05, so the data were not normally distributed. The results showed that one of the results of the study was not normally distributed so that researchers in the bivariate analysis used Spearman rank correlation.

Table 4. shows that the Spearman rank correlation test between coping strategies with psychological well-being obtained ρ value of 0,000 <0.05, which means there is a relationship between coping strategies and psychological well-being. This correlation has a positive direction, meaning that the better the strategic coping, the better the psychological well-being. The strength of the relationship between coping strategies with psychological well-being is moderate ($r = 0.620$).

Table 4. Correlation of Strategies Coping With Psychological Well-Being

Variables	Psychological Well-Being	
	ρ value	r
Strategic coping	0,000	0,620

Differences in Strategic Coping by Region

Table 5 shows that the test results Kruskal Wallis obtained ρ value: 0.018 <0.05 so that there were differences in respondent coping strategies among the three villages taken as the study sample.

Table 5. Differences in Strategic Coping by Village

Village	Strategic Coping		
	Mean rank	Mean	ρ value
Bandengan	34.18	95.18	0.018
Panjang Baru	40.89	196.18	
Krapyak Lor	52.43	95.71	

Psychological Well-Being Differences Based on the Area, it was

Kruskal Wallis test used to determine the differences in Psychological Well-Being in three villages affected by tidal floods in North Pekalongan. Results of this research is as follows:

Table 6. shows that the results of the Kruskal Wallis test were obtained ρ value: 0.340 > 0.05 so that there were no differences in Psychological Well-Being respondents among the three regions taken as research samples.

Table 6. Differences in Psychological Well-Being by Region

Region	Psychological Well-Being		
	Mean rank	Mean	ρ value
Bandengan	39.20	195.39	0.340
Panjang Baru	40.32	99.29	
Krapyak Lor	47.98	200.61	

DISCUSSION

Strategic Coping

A flood disaster is not a temporary disaster but it is ongoing due to natural damage, so that sea water is not dammed up to land, especially at high tide. The environment of the house becomes slum submerged by tidal water which cannot flow outside the home environment or dry out. Most of the houses have been submerged by tidal floods and some have even moved to safer locations. Part of the housing environment in the North Pekalongan region has been able to sea because the land is not visible. People who still survive must face slum, smelly, environmental conditions, water enters the house so that to carry out daily activities inside the house must use boots. The community also has a physical impact on the disease caused by flooding in the house. People experience skin diseases, upper respiratory tract infection and diarrhea.

Communities affected by tidal flooding with coping strategies can have an impact on psychological conditions such as experiencing stress that can interfere in living everyday life. This is in accordance with Rasmun (2009) which states that coping is a process that is passed by individuals in resolving stressful situations. The coping is an individual's response to situations that threaten him both physically and psychologically which can naturally be realized or not realized where the individual actually has used coping strategies to deal with stress.

Communities that have coping strategies in dealing with tidal flood disasters can be caused by the community being able to accept their condition and get support from their families after getting tidal flood disasters. The family is a source of good coping mechanisms for individuals to adjust to the disaster experienced. This is in accordance

with Stuart (2016) which states that the source of coping is a protective factor for individuals who have a relationship between individuals, families, groups and communities, coping sources.

Psychological Well-being

Communities affected by tidal floods are required to be able to adapt and pass through the bad experiences of the phenomenon of tidal floods in order to be able to continue living in areas submerged by tidal floods. The community needs to adjust to the current conditions faced in carrying out daily activities. People who have less psychological well-being will face difficulties in living in locations affected by tidal flood disasters, but instead people who have good Psychological Well-Being will be able to deal with the phenomenon of tidal floods. This is in accordance with Ryff (1989) which states that individuals who have high psychological well-being are individuals who feel satisfied with their lives, positive emotional conditions, able to go through bad experiences that can produce negative emotional conditions, have positive relationships with people others, being able to determine their own destiny without depending on others, controlling the conditions of the surrounding environment, having a clear purpose in life, and developing themselves (Ryff, 1989).

Relationship of Strategies Coping With Psychological Well-being

Someone who has a coping strategy and uses coping strategies to overcome the problems they face can improve their psychological well-being in living their lives as victims of tidal floods. The results of this study are in accordance with Haworth & Veal (2004) which states that strategies coping has the desired effect to improve coping and psychological well-being, although the strategies used sometimes only temporarily overcome comfort and mood enhancement do not neutralize the effects of the stress that is faced.

Differences in Strategic Coping by Region

Strategic coping by communities in each different region. Wilayah Panjang Baru has the highest strategic coping. This can be caused by the Panjang Baru region which has fairly comprehensive education facilities from early childhood education (PAUD) to universities. Knowledge about how to deal with the problem of tidal floods can help the community in dealing with stress arising from tidal natural disasters that have been experienced continuously for years. Information obtained from the media, government, non-governmental organizations or other people who are also affected by tidal flooding can form a knowledge that makes it easier for the community to determine the coping strategies used in overcoming the problem at hand. This is in accordance with Rasmun (2009) which states that one source of coping is knowledge. Knowledge and intelligence, is a source of coping that allows one to identify a variety of different ways to deal with stress.

Psychological Well-Being Differences by Region

this Research To determine the differences in psychological well-being in three regions, namely Bandengan, Panjang Baru and Krapyak Lor. The results of this study indicate that there is no difference in psychological well-being between the three regions. This is not in accordance with the opinion of Ryff (2006) which states that individuals who have low mastery of the environment, will experience difficulties in managing daily life, feel unable to change or improve the quality of the surrounding environment, and unable to take advantage of opportunities and opportunities themselves in the surrounding environment.

COMPETING INTERESTS

There were no conflicts of interest between researchers

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ETHICAL

Approval and sign informed consent. This study was approved by the Research and Community Service Center of the Poltekkes Kemenkes Semarang

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