

Coping Strategies for the Flood Disaster Practiced by the Pekauman Community in Sidoarjo Regency

Nurul Charisna¹, Hamidah² and Moh. Adib³

¹Postgraduate School, Universitas Airlangga, Surabaya, Indonesia

²Faculty of Psychology, Universitas Airlangga, Surabaya, Indonesia

³Faculty of Social and Political Sciences, Universitas Airlangga, Surabaya, Indonesia

Keywords: Coping, Strategies, Disaster, Flood, Community.

Abstract: The flood that happened in 2016 in Pekauman Village in Sidoarjo Regency, which was caused by the high rainfall intensity, has negatively affected the community since it damaged tens of houses and stopped the community's economic activities. The objective of this study was to analyse behaviours, factors, and benefits of the coping strategies practiced by the local community in Pekauman, Sidoarjo in mitigating the flood disaster. This qualitative phenomenology study is important to find out the capacity of the coping strategies in dealing with and mitigating the disaster. The three respondents were chosen using the purposive sampling technique since they share similar characteristics: head of the family/housewife, aged between 30 – 70 years old, employees/entrepreneurs with high school or bachelor's degree educational background; local residents; and good communication skill as well as their willingness to provide the information related to the topic of the research. The data were collected through observation and in-depth interviews with an open and structured process according to the list of interviewees and analysed based on data selection and presentation. The result showed that 6 out of 8 coping strategies were able to help the local community deal with and mitigate the flood disaster and they were confrontative, problem-solving planning, self-control, diversion, positive assessment, accountability acceptance, and avoidance. By using these coping strategies, the community was able to deal with the stress caused by the disaster and to seek ways to deal with the problems during the flood. The working together coping strategy, which cannot be found in Lazarus and Folkman (1984) theory, is also needed by the community to deal with and mitigate the flood disaster.

1 INTRODUCTION

Floods often occur in Sidoarjo due to its geographical location and the lack of dam construction. Sidoarjo is flanked by two major streams of the Brantas River, namely the Surabaya and Porong, which are the downstream of the Brantas River Basin, and they empty into the Madura Strait. The downstream that splits into two forms the Delta where most of the Sidoarjo region is located in. Moreover, Sidoarjo Regency is influenced by the tides of sea because it is located next to the Madura Strait. It is also topographically low and flat, and this geographical condition causes risks of floods in Sidoarjo Regency.

Behavior occurs because of the process of interaction with the environment. As a result, behavior is closely related to the environment.

Behavior is formed from the environment in which one lives. Due to the frequent occurrence of floods, the community must have knowledge of behaviors, methods, or strategies in dealing with emergencies caused by floods.

The community's strategy in dealing with the floods is referred to as "coping strategies." Specifically, Lazarus & Folkman (1984) defined coping as the cognitive and behavioral efforts made by an individual to manage external and internal demands which occur due to the individual's relationship with the environment that may compromise the individual's boundaries, particularly boundaries which are related to the individual's welfare.

The research took place in Pekauman Village of the district of Sidoarjo. This highly-populated village is in the heart of Sidoarjo. It is the center of

economy which boasts large number of small and medium enterprises and shops. However, this village is located in lowland area, and a vast river flows through the village. Floods occur every year in this area, which causes the community to possess coping strategies in dealing with the floods.

The research questions based on the background of problems explained before are:

- a. How is the knowledge of the local community in Pekauman Village of Sidoarjo Regency in dealing with emergency caused by floods?
- b. How is the behavior of the local community in Pekauman Village of Sidoarjo Regency in dealing with emergency caused by floods?
- c. What are the forms, factors, dynamic processes, and benefits of coping strategies which emerge in the local community in Pekauman Village of Sidoarjo Regency in dealing with emergency caused by floods?

2 LITERATURE VIEW

Disaster definition according to United Nations Development Program (UNDP, 1992) is a serious disruption of the functioning of a society, which causes major losses to the environment, material and human beings, which exceeds the ability of the affected community to cope with only using community resources themselves.

According to (Bakornas PB, 2007), based on the water source, excessive water can be categorized into four categories:

- a. Flooding caused by heavy rain that exceeds the capacity to channel water drainage systems consisting of natural river systems and man-made drainage systems.
- b. Flooding caused by an increase in water level in the river as a result of sea tides and the rise of sea waves due to storms.
- c. Flooding caused by failure of man-made water structures such as dams, dikes, and flood control buildings.
- d. Flooding due to failure of natural dams or blockage of river flow due to collapse / collapse of river cliffs. When blockages / dams cannot withstand water pressure, the dam will be destroyed, stagnant river water flows swiftly as flash floods.
- e. When the flood comes to the community settlement, the attitude of the character of the community in dealing with it does not panic, because they are used to having this problem every year. The only thing they did was to accept

the events and they kept things in a safe place such as electronic items were placed on top of a closet and closed the road access so that road users did not pass through their flooded residential areas, because if road users pass through their settlements the floodwaters will push into their settlements.

Coping strategies according to (Folkman, 1984) are cognitive and behavioral forms of business carried out by a person to regulate internal and external demands arising from an individual's relationship with the environment which is considered to interfere with the limits of the individual. The intended coupling is composed of specific thoughts and behaviors that are used by individuals to regulate the demands and pressures arising from the individual's relationship with the environment, especially those related to welfare. Coping is an individual response to overcome a problem, the response is in accordance with what is felt and thought to control, tolerate and reduce the negative effects of the situation at hand (Baron & Byrne in Rasmun, 2004).

3 RESEARCH METHODS

This research used qualitative research design and phenomenological approach. The researcher chose 3 informants who are relevant to the research problems with the following criteria:

- a. Native people of Pekauman Village of the Sidoarjo Regency.
- b. Victims of floods in Pekauman Village of Sidoarjo Regency.
- c. Head of household / housewife aged between 30 to 70 years old.
- d. Employees / businesspeople.
- e. High school graduates or graduates of bachelor degree.
- f. Able to communicate well.

Data were collected through interviews, observations, and documents. Data were analyzed through some stages, namely data selection and data presentation. The credibility of the research results was achieved using triangulation method. Finally, the conclusion was drawn, and the data were verified.

4 RESEARCH AND DISCUSSION

a. 1st Informant

Main Threat:

(Siltation occurred in the river located within the settlement of Pekauman Village. Almost all areas in the village are vulnerable to floods, starting from RW 1 (citizens association) Pandean area, RW 2 Pekauman area, and RW 3 Ndaleman area. However, the worst damage in RW 1 Pandean area occurred in RT 1 (neighborhood association), and the worst damages in RW 2 Pekauman area happened in RT 4 and RT 6.

Disadvantages:

(The economic activities stopped; people did not dare to go outside or used their vehicles because they were worry the vehicles would break down; people did not conduct business because the locations were flooded),

Plans to solve problems in order to avoid stress:

(Avoid rushing to take action; divert the problems by chatting with families; learn that disaster is a test to train patience.

b. 2nd Informant

Main Threat:

(Shallow river and no river dredging. Areas vulnerable to flooding are the areas of Pekauman, Pandean, Jetis, Lemah Putro, and all other areas near the river).

Disadvantages:

(Nothing, since the floods did not reach the house of the second informant due to the fact that the house had been renovated/elevated).

Plans to solve problems in order to avoid stress:

(Securing electricity in order to prevent short circuit, lifting goods for safekeeping, continuing other activities)

c. 3st Informant

Main Threat:

(The river, the areas of Kauman, Pandean, Jetis, and Lemah Putro).

Disadvantages:

(No financial aid from the local government).

Plans to solve problems in order to avoid stress :

(Accepting the problems by singing, studying the Holy Book, and remain grateful).

4.1 Knowledge of the Local Community in Pekauman Village of Sidoarjo Regency in Dealing with Emergency Caused by Floods

Local people know that river will overflow and the excess water will flow into the settlement. The factor of the floods is the lack of normalization of the river, so the vast river near the settlement is getting shallower. People also do not throw garbage into the river anymore because they realize that the river is getting shallower due to the accumulation of garbage at the bottom of the river. People of upper middle class renovate their house to elevate the buildings where as the people of lower class choose to make wooden barrier to close the door. Moreover, the people in the community also annually hold community service to prevent the increase of floods every year.

4.2 Behavior of the Local Community in Pekauman Village of Sidoarjo Regency in Dealing with Emergency Caused by Floods

Actively securing the electronic goods, food, and clothes by storing them on the second floor when he sees puddles of water in front of his house; asking help from family to ensure that there is no loss due to the floods; passively sitting at the living room since the house has been renovated and elevated so that no water will come into the house; walking outside to overcome stress by chatting with the neighbours.

4.3 Forms of Coping Strategies of the Local Community in Pekauman Village of Sidoarjo Regency in Dealing with Emergency Caused by Floods

The form of coping strategies is mostly similar across various informants because the floods cover the entire areas of settlement. The forms of coping strategy that do not emerge in the 2nd informant are the strategy of seeking social support and the strategy of self-control, while in the case of the 3rd informant, the form of coping strategies that does not emerge is the strategy of seeking social support.

The forms of coping strategies of 1st informant which emerge in Problem-Focused Coping are being confrontational, seeking social support, and planning problem-solving solutions whereas the forms of

coping strategies which emerge in Emotional-Focused Coping are self-control, diversion, positive judgment, acceptance of responsibility, and avoidance.

4.4 Factors that Influence Coping Strategies of the Local Community in Pekauman Village of Sidoarjo Regency in Dealing with Emergency Caused by Floods

4.4.1 Physical Health

Physical health is an important thing because to cope with stress, individuals are required to exert considerable amount of energy. For instances, when the floods hit and continue for days, the people of Pekauman Village are expected to exert considerable amount of energy in implementing coping strategies in phases before, during, and after the floods.

In the phase before the floods, they renovate their houses and elevate the front part of their house. In the phase during the floods, they move their valuables, staple food, and clothes to a higher place. In the phase after the floods, they clean their houses which are full of mud and garbage due to the floods.

Therefore, it can be concluded that physical health is very much needed as the factor of coping strategy within the community in Pekauman Village of Sidoarjo Regency in dealing with floods.

4.4.2 Positive Belief/Outlook

The belief in fate which might cause the individuals to feel helpless will degrade the people's ability in implementing coping strategies. The people of Pekauman Village see this issue as a problem that they are accustomed to facing, and they become resigned to the flooding problem.

4.4.3 Problem-Solving Skills

This includes the ability to seek information, analyze situations, identify problems with the aim of generating alternative actions, then consider those alternatives with respect to the targeted outcomes. The way the community solves the problem is by seeking information to the relevant agencies to cope with the floods so that the water does not enter their house.

4.4.4 Social Skills

These skills include the ability to communicate and behave in ways appropriate to the social values prevailing in society, as well as when they relieve stress they do not care about the flood, what they do is that chatting with their neighbours.

4.4.5 Social Support

This includes support for the fulfilment of the information and emotional needs within the individuals, which can be provided by the parents, other family members, relatives, friends, and the surrounding community. For example, the people of Pekauman Village exchange information to overcome the problems that they face. For instance, in order to prevent the wave of floods from entering the house, they block the road with wooden chairs so that vehicles do not pass through the road.

4.4.6 Material

Factors that affect coping strategies are resources in the form of money, goods or services that can usually be purchased. The people of Pekauman also need materials in the process of forming coping strategies, particularly when they are trapped in the houses that are flooded or due to inaccessible road. As what has been experienced by the 2nd informant, when the floods hit, he/she prefers to order and purchase fast food online.

4.5 Processes and Dynamics that Form Coping Strategies of the Local Community in Pekauman Village of Sidoarjo Regency in Dealing with Emergency Caused by Floods

Flood is not considered as a stressor because it often hits the area every year, so the people are used to such conditions. Second, past experiences in similar situations make the people more confident in overcoming their own problems and the environment. For example, when floods come, they have already prepared coping strategies to deal with the floods by securing valuables to a higher place, managing their mindset to think positively, and learning from the problem that they face.

4.6 Benefits of Coping Strategies Formed by the Local Community in Pekauman Village of Sidoarjo Regency in Dealing with Emergency Caused by Floods

The people are much better prepared in dealing with the flood and are able to cope with the problems and pressure that they face. For example, floods that continue for days do not make them feel stressed but make them more patient instead.

5 CONCLUSION

- a. All three informants exhibit active behaviors in dealing with emergency caused by the floods. For example, they secure valuable items, electricity to prevent short circuit, refrigerator and television to prevent contact with water.
- b. If viewed from economic and educational point of view, there are various degrees of behaviors. From the economic perspective, the 2nd informant had renovated and elevated his house before the floods hit as a form of strategy. Meanwhile, from the perspective of higher education (in this case, bachelor degree), the 1st and 2nd informants requested the local government to provide water pumps to move the water into the water storage tanks as their strategy.
- c. The people of Pekauman Village implement almost all forms of coping strategies. In Problem-Focused Coping, the strategies are being confrontational, seeking social support, and planning problem-solving solutions whereas in Emotional-Focused Coping, the strategies are self-control, diversion, positive judgment, acceptance of responsibility, and avoidance.
- d. Factors that influence coping strategies are physical health, positive belief/outlook, problem-solving skills, social skills, social support, and materials.
- e. The processes and dynamics which form coping strategies are (1) the floods are not considered as stressor because floods often hit the area every year; (2) past experiences in similar situations make the people more confident in overcoming their own problems and the environment.
- f. The benefit of coping strategies formed by the people of Pekauman Village is that the people can overcome the stress and find the solutions to

overcome the problems in dealing with emergency caused by the floods.

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