

# Disaster Education Based on Psychological First-Aid for Students: Increasing Capacity Dealing With Disaster

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Indonesia has a high potential for disaster based on geographical location, one of which is Sajen village located at Mojokerto Regency in East Java. Sajen village has high-hazard suffered disasters, such as landslides, flash floods, and high winds. Disasters that have occurred cause the impact of casualties, damage to settlements, the source of life of the population, psychological problems, and social (high-risk). The tough (tangguh) village disaster program based on psychological first-aid applied to 100 students to improve disaster capacity through disaster education as an effort to reduce risk. So far, no disaster education program has been implemented based on psychological first-aid for students. This paper will describe the action research implementation of disaster education for students covering physical health training that is knowledge of potential disaster, self-preservation, and survival from disaster. Psychological health is the ability of psychological recovery during or after disasters. Behavioral health ability can empower themselves and communities economically, socially, and culturally, or other areas of life and healthy behavior during and after the disaster. Outcomes of disaster education programs include increased knowledge and psychological first-aid capabilities, handbooks of disaster education based on psychological first-aid, psychological first-aid, and sustainable disaster education programs. The results of the implementation of disaster education related to physical health, psychological health, and behavioral health are discussed further.

*Keywords:* disaster education, psychological first aid, the tough (tangguh) village disaster program

## Introduction

### Disaster Risk of Sajen Village

Indonesia is geographically located in the circle ring of fire and meeting the three main plates of the earth, so it is prone to experience the eruption of volcanoes and earthquakes. In addition, Indonesia is a geographical and hydrological geographic position between the Asian and Australian continents. It lies between the Indian and Pacific oceans characterized by turbulent weather and climate change impacting high-rainfall and tropical storms that are prone to flooding. Under these conditions, it is natural that Indonesia becomes a country with high disaster vulnerability from component hazards review for geological and hydro meteorological. Natural disasters that often occur in Indonesia are erupting volcanoes, tsunamis, earthquakes, landslides, and floods. Usually, the peak of hydro meteorological disaster occurred in December to February when Indonesia entered the peak of the rainy season indicated by the number of landslides and floods that occurred.

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Based on the disaster analysis of Mojokerto Regional Disaster Management Agency (BPBD), Sajen village located at Pacet Subdistrict, Mojokerto City, East Java Province in Indonesia, has a high potential of experiencing hydrometeorology disaster because of its geographical location adjacent to Welirang Mountain and based on geographical, geological, and historical disaster ever happened in Sajen village, such as landslide, erosion, flood, and high winds. Besides, due to natural factors, the disaster that occurred also caused the destruction of forest area.

Some of the historical disaster that has occurred in the area of Sajen village is presented as following. Floods occurred in 2002 (December), 2004 (December), and 2007, damaging the rice fields and human settlements. On February 3, 2012, Kali Kromong dikes in Sajen village damaged, causing damage to tourist areas and some people died. The most severe damage from flood-affected areas is Sajen village. The data also shows that Sajen village has floods and landslides every year. Thus, Sajen village has a high-hazard condition.

Landslides, floods, and high winds result in casualties or damage to dwellings, livestock, paddy fields, plantation areas, and natural or non-natural resources that are the source of life for the population. Natural disasters also cause disruption of the economic, psychological, and social life of individuals and communities. Improvements in the impact of natural disasters, whether physical, economic, spiritual, and psychological require time, cost, and resources are not small.

Based on the analysis of risk components, this is in addition to high-hazard as well as high-vulnerability. Desa Sajen is not ready to face landslide disaster, because the structural and non-structural mitigation is still weak. This is also the case in areas with high natural disaster threats still lacking in the application of early warning systems, disaster risk awareness, and poor management of disasters due to lack of resources. Referring to the information provided by BPBD in Kabupaten Mojokerto, when handling the disaster occurring in Sajen village, village government and villagers tend to be passive. Disaster risk reduction and disaster management awaits from BPBD or volunteers on duty. The location of the village of Sajen and BPBD located in the city of Mojokerto far enough taken within about 45 minutes using the land route if the road conditions smoothly. With such conditions, the handling of disasters from the BPBD or parties outside the village of Sajen takes time so that the quick reaction of disaster management cannot be realized.

### **The Role of Psychology**

The district government and BPBD have done their best to map the potential of disaster in Mojokerto and handling in case of disaster. The main purpose of mapping is not to prevent the occurrence of disasters but to minimize the impact of disasters. However, the mapping and handling of the disaster is not enough if the community does not have concerns about the potential for disaster and disaster management. BPBD in Mojokerto once planned the Sejen village as a resilient village based on disaster risk, but until now, not yet realized.

The focus on disaster is disaster mitigation, i.e., efforts to prevent or reduce the risk of disaster (Department for International Development [DFID], 2011). Disaster cannot be prevented, because it is part of the dynamics of earth life undergoing the process of rotation. Disasters will always have an impact, death, physical damage, or psychological impact, but through disaster mitigation, these impacts seek to be minimized.

The role of psychology in mitigation encompasses both structural and non-structural forms (P. Gantt & R. Gantt, 2012). In structural mitigation, the role of disaster psychology appears to support policy or regulation that has been made regarding the vulnerability of disasters. For example, helping people to socialize their living

on possible threats in disaster-prone areas. In non-structural mitigation, the role of disaster psychology is seen through programs that are conducted to awareness of the community's ability to face disaster and increase resilience of disaster-prone or unhealthy people (Yuwanto et al., 2014). In the disaster phase, the role of disaster psychology focuses on psychological first-aid. The first attempt at psychological handling of disaster victims covers three things: physical health (restore safety), psychological health (facilitate function), and behavioral health (empower action) (Minnesota Department of Health, 2013).

Structural and non-structural disaster mitigation should be undertaken, because disaster mitigation focuses on four matters: (a) mapping of disaster-prone areas; (b) socialization of disaster-prone areas for the community; (c) preparation or provision of information, programs, and training for communities in the face of disasters (disaster education); and (d) preparation of facilities and infrastructure in dealing with disasters especially in disaster-prone areas. Through two forms of structural and non-structural mitigation, the risk of disaster can be reduced.

Based on the results of mapping conditions in the Sajen village, Sajen village has a high-risk due to hazards and high-vulnerability. High-hazard occurs in landslide disaster, flash floods, whirlwinds, and eruptions of Mount Welirang. High-hazard should be followed by a decrease in vulnerability by fostering the responsibilities and capacities of village government and Sajen villagers in reducing disaster risks and dealing with natural disasters. Disaster management needs to be prepared as early as possible to face potential disasters to reduce the risk of natural disasters. Therefore, to reduce the risk of disaster in Sajen village, it is necessary to establish a village assistance program that is the formation of tough village (Desa Tangguh Bencana in Indonesia). This tough village program is also in line with the BPBD in Mojokerto and Mojokerto Regency Government Program.

The formation of tough village leads to structural and non-structural mitigation, which includes disaster preparedness schools and disaster prepared families. Structural includes mapping of disaster-prone areas, village spatial arrangement, safe settlement, sign building, and evacuation route in every house, assembly point, making of signs and evacuation of villages, and refuge location. This program directly handled by Mojokerto Regency Government and BPBD in Mojokerto. Programs that have not been handled are non-structural programs.

Non-structural includes disaster education to family, teachers, students, and village government officials based on psychological first-aid, which includes physical health, psychological health, and behavioral health. This study illustrates the application of disaster education based on psychological first-aid to students in Sajen village to increase capacity in facing disaster, which is part of the tough village. The formation of a tough village is applied to families, teachers and students, but this article only describes its application to students.

### **Method**

The implementation of disaster education based on psychological first-aid was conducted on 100 elementary school students in Sajen villages. This program was divided into three stages: socialization, lecturing, and simulation. Each stage held in different day. Thus, the disaster education program is an action research with program evaluation quantitatively and qualitatively.

### **Result and Discussion**

Disaster education based on psychological first-aid includes physical health training that is knowledge of

potential disaster, self-preservation, and survival from disaster (Australian Psychological Society & Australian Red Cross, 2011). Psychological health is the ability of psychological recovery during or post disaster. Behavioral health ability can empower themselves and communities economically, socially, and culturally or other areas of life and healthy behavior during and after the disaster. Here are the details of the disaster education program being implemented.

### **Physical Health**

Restore safety or physical health consists of two things—safeguard and sustain. The restore safety program covers: (a) the introduction of hazards in Sajen village; (b) knowledge and installation of disaster risk warning signs, gathering points, and evacuation routes; (c) knowledge and simulation of ways to deal with disasters that can occur in Sajen village; (d) knowledge and simulation of evacuation and medical rescue in disaster condition; (e) knowledge about barrack management; and (f) knowledge of emergency bags.

### **Psychological Health**

Ability given to students related to psychological health is to make psychologically comfortable in a state of disaster through gratitude activity and relax the senses and muscles.

### **Behavioral Health**

There are two concepts in behavioral health. The first is the ability to return to the initial condition before experiencing a disaster in the form of alternative livelihood. The second is to behave healthily during and after disaster associated with the behavioral health capabilities that are taught to students is the ability to maintain health, such as always washing hands, eating nutritious food, and using masks in disaster conditions.

These disaster education programs have not been implemented in disaster education in Indonesia. Based on the evaluation of disaster education programs that have been implemented, disaster education materials are tucked into subjects, such as environmental education and geography. The form of disaster education that has been implemented also focuses more on physical health. Not all students in Sajen village have received any education from physical health, psychological health, and behavioral health. Thus, the disaster-based education program, the psychological first-aid that has been implemented is the first experience for them and for the school.

The disaster education program based on the psychological first-aid that has been applied is expected to be beneficial for life in the future. Disaster education can be given from an early age, so it is one of the provisions of life skills for students. Disaster education programs for students based on psychological first-aid should be done sustainably. Thus, the commitment of the school is to implement it regularly as education for survival life.

Based on the evaluation of the benefit of the implementation of disaster education program, school in Sajen village is willing to implement continuous disaster education for every student. This is inseparable from the purpose of disaster education based on psychological first-aid (Doherty, 2001; Yuwanto et al., 2014; Yuwanto, 2015):

1. Students learn about disaster conditions. Given the lessons learned from these experiences, it is hoped that they will have better skills in dealing with disasters or other crisis conditions;
2. Students learn the availability of services and support needed;
3. Students learn safety, network, and safety concerns;
4. Students are aware of the physical, mental, social, and occupational conditions and prepare themselves for the future.

Disaster education programs are summarized in Figure 1.

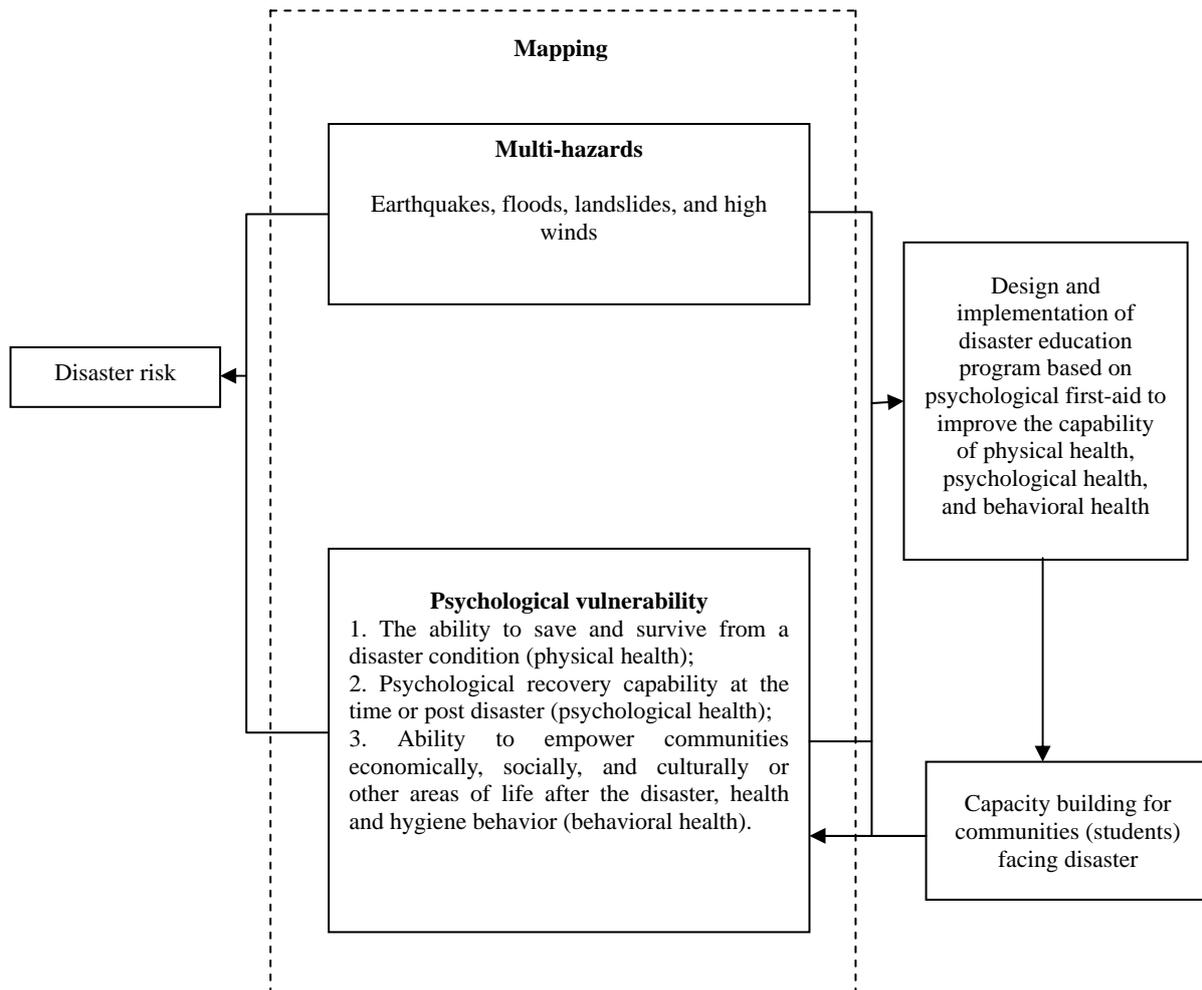


Figure 1. Disaster education program based on psychological first-aid.

## Conclusions

Disaster education program based on psychological first-aid also equip the students' independence to face disaster and change the paradigm of psychological first-aid as a form of disaster management as the ability to face disaster (Michel, 2007).

Furthermore, this program should be continued to make the students more experiences through simulation learning. Government, BPBD, and family can support this program as a part of subject matter in school for safety school zone. This program can dissemination for others school especially school with high risk disaster. Things that should be developed in the disaster education program for students include:

1. The implemented program has not been based on the standard module, so that in the future there is need of standard module;
2. The program that has been implemented still focuses on the students' psychological first-aid training, has not been evaluated comprehensively on the students ability.

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