

ORIGINAL ARTICLE

Community Coping Mechanisms Affected by Natural DisasterZahara Farhan¹, Sulastini Sulastini², Devi Ratnasari², Gingin Sugih Permana¹¹ Study Programme of Diploma III, Nursing, STIKes Karsa Husada Garut, 44150 Garut, Indonesia² Study Programme of Bachelor, Nursing, STIKes Karsa Husada Garut, Garut, Indonesia**ABSTRACT**

Introduction: The coping mechanism for disaster victims is a dynamic process in solving problems to control everything that threatens and the coping mechanisms used by each individual is different. The impact of natural disasters will cause individuals to experience disturbances in physical, psychological, social, and spiritual aspects. The aim of this study was to analyse the coping mechanisms of the people Warung Cagak Village, Cilawu District, Garut Regency who are affected by natural disasters. **Methods:** This study was deployed with descriptive quantitative research design and was carried out in July 2020 in the Village of Warung Cagak, Cilawu District, Garut Regency. The sample technique used was simple random sampling on 150 heads of families representing people of warung cagak village whom were affected by flash floods and landslides. The instrument used for collecting data was questionnaire. Analysis data using the median value which was then categorized using a frequency distribution. In doing this, the writer used median value which was then categorized by frequency distribution to analyse data. **Results:** The result showed that the vast majority of family heads (91.5%) had adaptive coping mechanisms and a small proportion of it (8.5%) had adaptive coping mechanisms when they were impacted by natural disasters. This is due to people engaging in positive activities such as praying, harboring feelings, and diverting attention to more useful things in order to distract themselves from the problem. **Conclusion:** According to the study's findings, almost all communities have adaptive coping mechanisms when they are impacted by natural disasters.

Keywords: Coping Mechanism, Society, Natural Disaster**Corresponding Author:**

Zahara Farhan, M.Kep

Email: zaharafarhan585@gmail.com

Tel: +62 813-2010-2382

INTRODUCTION

Disaster is a series of events that disrupt and threaten the livelihoods and lives of the surrounding community caused by natural, non-natural, or human factors that cost human lives, environmental damage, loss of property, and psychological impacts (1). Based on data from the National Disaster Management Agency, during 2019 there were 3.814 natural disasters in Indonesia which were dominated by hydrometeorological disasters such as; floods, landslides, forest and land fires which caused more than 6 million people to be affected by disasters that caused 589 deaths, and 3.421 injuries (2). Based on data from the Regional Disaster Management Agency of West Java Province, during January to November 2019 there were 1.740 incidents of natural disasters, consisting of; 478 landslides, 385 forest and land fires, 368 tornadoes, 138 floods, and 14 earthquakes (3). Based on data from regional Disaster Management Agency of Garut Regency, during 2017 there have been 220 natural disaster events consisting

of; 10 floods, 131 fires, 41 landslides, 27 tornadoes, and 11 earthquakes. Cilawu is sub district an area that is often affected by disasters, in 2017 experienced a natural disaster of 1 flood, 1 fire, and 6 landslides (4). The occurrence of natural disasters causes a lot of negative impacts on people's lives. Handling of disaster impacts must be carried out quickly after a disaster occurs to minimize the impact and improve the recovery process for victims of natural disasters (5). Physical impacts of natural disasters include; body fatigue, no appetite, insomnia, fractures, injuries, and increased incidence of infectious and non-communicable diseases such as; malaria, dengue fever, diarrhea, itching, skin infections due to damage to the environmental sanitation system and the lack of clean water supply in refugee camps which can lead to disease transmission (6).

The psychological impact of natural disasters can cause post disaster trauma, depression, and anxiety disorders (7). Individuals affected by disasters will experience loss, stress, and trauma that affect coping mechanisms and behavioral outcomes (8). The psychological impact of disasters is influenced by changes in interactions or physical, psychological, social situations, and material problems, so that solutions are needed to reduce the psychological impact on disaster victims

(9). Communities affected by natural disasters will generally take self-defense efforts (coping mechanisms) to survive in conditions filled with tension and fear (10). The impact of disasters on social aspects is related to separation and loss of social status, position and role in society, damage to social values and damage to social infrastructure (11). The social impact of disasters can result in the disintegration of society, the destruction of family values, conflict, psychological trauma and physical, economic-social powerlessness and the destruction of the social order (6,12).

Natural disasters can also have an impact on people's spiritual lives. Individuals or communities respond by believing that what is happening is God's will, so they engage in spiritual activities such as prayer or other spiritual activities. There are, however, individuals or communities who oppose the occurrence of natural disasters and blame God for making them despondent and preventing them from engaging in spiritual activities (13).

Coping mechanism is individual's effort or strategy to adapt against changing conditions and respond to situations that endanger their physical, psychological, social, and spiritual well-being. Adaptive coping mechanisms and maladaptive coping mechanisms are two types of coping mechanisms. Adaptive coping mechanisms are efforts that increase and support people's ability to cope with and adapt to trauma that occurs after a disaster, whereas maladaptive coping mechanisms prevent people from coping with and adapting to trauma that occurs after a disaster (14).

Individuals who are affected by a disaster require coping mechanisms as resources to deal with any difficulties that arise. The coping mechanism for disaster victims is a dynamic process of problem solving and controlling everything that can endanger them (15). This research focuses on the physical, psychological, social, and spiritual coping mechanisms of people affected by natural disasters in Warung Cagak Village, Cilawu District, Garut Regency.

MATERIALS AND METHODS

Study Design

This study deploys descriptive quantitative research design. The research was conducted in the village of Warung Cagak, Mangkurakyat Village, Cilawu District, Garut Regency, in July 2020.

Sample and Setting

Based on predetermined inclusion criteria, the sample technique used simple random sampling on 150 heads of families representing the people of Warung Cagak village affected by flash floods and landslides. The following criteria are required for sample inclusion: i) The head of the family must reside in Warung Cagak Village, Mangkurakyat Village, Cilawu District. ii) Heads of disaster-affected families iii) Head of household

over the age of 20. iv) Family heads who are willing to participate in the research. v) The family's head, who can read and write. Exclusion criteria for the research sample include: i) the head of the family who was not present at the time of the study. ii) A head of household who is under the age of 20. iii) Family heads who refuse to participate in the research. iv) Head of household who is illiterate.

Questionnaire

Data was collected using a questionnaire developed independently based on the theory of coping mechanisms from (16), which was further classified into adaptive and maladaptive coping mechanisms. The number of questionnaire items was 35, with a measurement scale based on a Likert scale. The questionnaire was tested for validity, with a validity coefficient value of 0.48, and for reliability, with a reliability coefficient value of 0.76.

Data Analysis

Data was analyzed using the median value, which was then classified using a frequency distribution to further categorize the coping mechanisms on each of the measured variables (physical aspects, psychological aspects, social aspects, and spiritual aspects) into adaptive and maladaptive coping mechanisms.

Ethical Clearance

First, the researcher explained the purpose and objectives of the research to be conducted. If the prospective respondent agreed to become a prospective respondent, the researcher would ask the prospective respondent to sign the format of willingness to become a respondent (informed consent). During the questionnaire filling process, the researcher walked alongside the respondent to anticipate if there were any question items that the respondent did not understand. If a respondent did not understand a question item, the researcher would explain the purpose of the question without directing or providing an answer to the respondent. The researcher would re-check the completeness of the answers after the respondent completed the questionnaire, and when the questionnaire was complete, it was collected and given to the research team. In addition, the respondents were given questionnaires by the researchers. This study was approved by Research Ethics Committee, Aisyiah University Bandung No. 48/KEP. 01/UNISA-BANDUNG/VIII/2020.

RESULTS

According to table I, when affected by floods and landslides, the vast majority of warung cagak village's head of the family (88.7%) had adaptive coping mechanisms and (11.3%) had maladaptive coping mechanisms in the physical aspect with median value 10.5. The vast majority (85.3%) had adaptive coping mechanisms and (14.7%) had maladaptive coping mechanisms in the psychological aspect with median

Table 1: Frequency Distribution of Coping Mechanisms

Coping Mechanisms Aspects	Median	Frequency	%
Physical Aspect			
Adaptive	10.5	133	88.7
Maladaptive		17	11.3
Psychological Aspect			
Adaptive	15	128	85.3
Maladaptive		22	14.7
Social Aspect			
Adaptive	15	139	92.6
Maladaptive		11	7.4
Spiritual Aspect			
Adaptive	15	132	88.0
Maladaptive		18	12.0

value 15. The vast majority (92.6%) had adaptive coping mechanisms and (7.4%) had maladaptive coping mechanisms in the social aspect with median value 15. The vast majority (88.0%) had adaptive coping mechanisms and (12.0%) had maladaptive coping mechanisms in the spiritual aspect with median value 15.

DISCUSSION

When floods and landslides hit Warung Cagak village, Cilawu District, Garut Regency, the vast majority of communities developed adaptive coping mechanisms in the physical, psychological, social, and spiritual realms. A good understanding of the community on a stressor can influence them in trying to defend themselves in problem solving. One of the efforts made by the community to maintain the physical aspect when they are affected by disasters is to maintain good food and drink consumption, environmental cleanliness from the risk of disease emergence, and clean and healthy living behaviors. In doing so, they keep their physical health in check so that they can do their daily work as a source of strength and not focus on stressors.

The existence of individual efforts to maintain their physical health is a very important force to carry out their daily work in order to avoid the focus of their problems (10). According to the research results, the fulfillment of physical needs, particularly food, drink, and medicine, was obtained from the large amount of assistance provided by the volunteers it was sufficient to assist them in meeting their basic needs so that they could continue to do their daily work. One way to meet basic human needs during a disaster is to provide assistance from other parties in order to survive in natural disaster conditions. In addition to meeting basic needs, disaster-affected communities require health services to maintain their health, particularly in refugee camps, which are

prone to disease due to unsanitary conditions (6).

The result of community coping mechanisms on psychological aspects showed that people had a good understanding and were not focused on the stressors they faced. People might experience emotional changes such as depression, anger, sadness, loss, and grief, but this did not cause them to dissolve in deep sadness. They considered the disaster to be a test and a trial that had to be accepted with sincerity and patience. People still had high hopes that they would be able to overcome all adversity and continued to live. Efforts made by the community to reduce stressors by counseling volunteers, carrying out their daily tasks, and being directly involved in disaster management. Efforts made by the community to overcome emotional changes in adjusting to the impact of stressful conditions can be accomplished through behavioral regulation as an active way of seeking problem solving to eliminate stressful conditions or situations (15).

Community involvement and counseling from volunteers in dealing with all disaster-related problems will reduce sadness and strengthen the mentality of the victims, as well as relieve the trauma of the events that have just happened to them, as well as relieve boredom in refugee camps (6).

The findings of a study on community coping mechanisms for social aspects showed that the warung cagak community's strong social and family ties were an important source of strength in dealing with the problems caused by floods and landslides. Every member of society strengthened and assisted one another in terms of basic needs, thoughts, time, and energy. The people of warung cagak had strong social ties, as evidenced by the many social assistances provided by the surrounding village communities, with many residents assisting in evacuating disaster victims, providing basic materials, and providing refugee places.

The presence of social support from other communities will make disaster victims feel cared for, alleviate suffering, and acknowledge the disaster's existence. Social support can assist those who are having difficulty socializing as a result of family separation, alienation, and neglect, necessitating the tracing and reunification of families or separated family members. Counseling services, social guidance, advocacy, and activity facilitation are extremely beneficial in restoring their self-esteem and social function so that they can return to a normal life in society (6).

Social support is a coping resource that one does not own but can obtain from the community. When an individual or society is in a tense situation, the individual desperately needs the help of others. Individuals' physical and psychological well-being can benefit from social support. Social support can take the

form of information or advice, physical or non-physical assistance, or verbal or nonverbal actions provided by family, relatives, friends, the government, volunteers, and other communities and social networks. This enables individuals to receive high social support as additional assistance, which has a positive impact on overcoming crisis conditions and difficulties following natural disasters (10).

The result of community coping mechanisms on spiritual aspects showed that the strong spiritual beliefs of the warung cagak community caused them to surrender and accepted disaster events as God's will. Religious leaders had a very positive influence on the community because they always provided explanations and reinforcement for them to remember God by praying five times a day, dhikr, praying, and carrying out recitation activities. This calmed people, allowed them to accept God's will, and gave them the confidence to overcome adversity.

There were several reactions from individual and community. Those who believed that what was happening was the will of God so that they would carry out their spiritual activities by praying, or doing other worship activities to get closer to God. However, some individuals or communities who displayed different responses, namely by regretting the natural disasters that occurred or even blaming the power of God which made them despair and not carried out worship activities (13).

Overall, the research findings showed that when communities were affected by floods and landslides, their coping mechanisms adapted in all aspects. The presence of a good understanding and mindset of the community, high motivation to overcome adversity, strong social support, and strong faith in God became the main capital for the community in facing all the risks faced when affected by natural disasters such as floods and landslides.

This study excluded cultural coping mechanisms from its analysis of the impact of natural disasters on the cultural system or traditional customs inherent in the life of the warung cagak community. Aside from that, this research was still illustrating the coping mechanisms in each aspect, with no knowledge of the most dominant factors that affect the community's coping mechanisms when disasters struck.

The results of this study can be used by the Regional Disaster Management organisation to develop problem-solving programs, particularly in disaster-affected areas, in order to reduce the complexity of disaster-related impacts.

CONCLUSION

Individuals affected by a disaster require coping mechanisms as the necessary resources to deal with

and deal with any difficulties that arise. The coping mechanism for disaster victims is a dynamic process of problem solving and controlling everything that can threaten them, with each individual's coping behavior being unique. When affected by floods and landslides in Warung Cagak Village, Cilawu District, Garut Regency in 2020, almost all of the community's coping mechanisms in all aspects have been adaptive. Local governments are expected to develop problem-solving programs, particularly in disaster-affected areas, in order to reduce the complexity of disaster-related impacts.

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REFERENCES

1. Kementerian Hukum dan Hak Asasi Manusia. Penanggulangan Bencana [Internet]. Republik Indonesia; 2007 p. Pasal 1 ayat 2. Available from: https://bnpb.go.id/ppid/file/UU_24_2007.pdf
2. Badan Nasional Penanggulangan Bencana. Kejadian Bencana Tahun 2019 [Internet]. Badan Nasional Penanggulangan Bencana. 2019. Available from: <https://bnpb.go.id/infografis/kejadian-bencana-tahun-2019>
3. Huyogo S. Deretan Bencana Alam di Jabar Sepanjang Januari-November 2019 [Internet]. 2019. Available from: <https://www.liputan6.com/regional/read/4125804/deretan-bencana-alam-di-jabar-sepanjang-januari-november-2019>
4. Badan Pusat Statistik Kabupaten Garut. Jumlah Bencana Alam Menurut Jenis Bencana di Kabupaten Garut Tahun 2017 [Internet]. 2018. Available from: <https://garutkab.bps.go.id/statictable/2018/04/12/313/jumlah-bencana-alam-menurut-jenis-bencana-di-kabupaten-garut-tahun-2017.html>
5. Utomo MH, Minza WM. Perilaku Menolong Relawan Spontan Bencana Alam. *J Psychol* [Internet]. 2016 [cited 2021 Jul 14];2(1):48–59. Available from: <https://jurnal.ugm.ac.id/gamajop/article/view/31871>.
6. Rusmiyati C, Hikmawati E. Penanganan Dampak Sosial Psikologis Korban Bencana Merapi (Sosial Impact of Psychological Treatment Merapi Disaster Victims). *J Informasi*, [Internet]. 2012;17(02):97–110. Available from: <http://ejournal.kemensos.go.id/index.php/Sosioinforma/article/viewFile/96/64>
7. Bisson, Jonathan, I, and Lewis C. Systematic Review of Psychological First Aid [Internet]. Cardiff; 2009.

- Available from: <https://www.researchgate.net/publication/265069490>
8. Fullerton CS, Reissman DB, Gray C, Flynn BW, Ursano RJ. Earthquake response and psychosocial health outcomes: Applying lessons from integrating systems of care and recovery to Haiti [Internet]. Vol. 4, Disaster Medicine and Public Health Preparedness. Cambridge - Great Britain: Cambridge University Press; 2010. p. 15–7. Available from: <https://www.cambridge.org/core/journals/disaster-medicine-and-public-health-preparedness/article/earthquake-response-and-psychosocial-health-outcomes-applying-lessons-from-integrating-systems-of-care-and-recovery-to-haiti>.
 9. Hayatul Khairul Rahmat. Traumatic Counseling Services as an Effort to Improve Resilience of Natural Disaster Victims [Internet]. Yogyakarta: Department of Islamic Guidance and Counseling of State Islamic University of Sunan Kalijaga; 2018. Available from: <http://conference.uin-suka.ac.id/index.php/icigc/article/view/246>
 10. Kumaat, Asnayanti, Lucky, dan Wowiling F. Hubungan Mekanisme Koping dengan Kejadian Stres Pasca Bencana Alam pada Masyarakat Kelurahan Tubo Kota Ternate. e-Jurnal Keperawatan (eKP) [Internet]. 2013;1(1). Available from: <https://ejournal.unsrat.ac.id/index.php/jkp/article/view/2164>.
 11. Mundakir S. Dampak Psikososial Akibat Bencana Lumpur Lapindo (Psychosocial Impact of Lapindo Mud Disaster). J Ners [Internet]. 2011;6(1):42–9. Available from: <https://www.e-journal.unair.ac.id/JNERS/article/view/3964>.
 12. Irzalinda, Vivi , dan Sofia A. Pengaruh Koping Strategi terhadap Resilience Keluarga Rawan Bencana. J Obs J Pendidik Anak Usia Dini [Internet]. 2019 Nov;4(1):201–10. Available from: <http://repository.lppm.unila.ac.id/id/eprint/17638>.
 13. Milstein G. Disasters, psychological traumas, and religions: Resiliencies examined [Internet]. Vol. 11, Psychological Trauma : Theory, Research, Practice and Policy. Educational Publishing Foundation of the American Psychological Association; 2019. p. 559–62. Available from: www.apa.org/pubs/journals/tra.
 14. Yunere F, Sari YP, Tusadiah H. Hubungan Mekanisme Koping Dengan Resiko Terjadinya Depresi Pada Korban Pasca Bencana Kebakaran Toko Di Pasar Atas Kota Bukittinggi Tahun 2018. J Kesehat PERINTIS (Perintis's Heal Journal) [Internet]. 2018;5(1):80–6. Available from: <https://jurnal.upertis.ac.id/index.php/JKP/article/view/99/90>
 15. Nafi'ah K. Strategi Coping Stres yang Dilakukan Masyarakat Desa Jati Wetan Kecamatan Jati KAabupaten Kudus dalam Menghadapi Bencana Banjir (Analisis Bimbingan Konseling Islam) [Internet]. Tesis. Walisongo Institutional Repository. Semarang; 2014. Available from: <http://eprints.walisongo.ac.id/id/eprint/3438>
 16. Cooper LC and QJC. The Handbook of Stress and Health [Internet]. I. The Handbook of Stress and Health. TheAtrium, SouthernGate, Chichester, West Sussex, United Kingdom: John Wiley & Sons Ltd; 2017. 1–720 p. Available from: <http://ndl.ethernet.edu.et/bitstream/123456789/60531/1/146.pdf#page=369>