

## The Covid-19 Outbreak Disaster Mitigation Strategy

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**Abstract:** *When a new outbreak with a potential pandemic arises, non-pharmaceutical interventions, such as outbreak mitigation strategies, are the most effective interventions to help slow down virus transmission at the community level. COVID-19 virus outbreak mitigation is a series of actions that people and communities can take to help slow the spread of viral infections. Mitigation is very important before vaccines or drugs are widely available. This review of literature aims to discuss the COVID-19 virus outbreak disaster mitigation strategy. This research method is a literature study. The Coronavirus pandemic not only threatens physical health, but also the mental health of every individual. Not only fear, but psychological effects can also have a serious impact. Prevention and mitigation measures are the keys to implementation in health and community services. to optimize the Puskesmas as the frontline for regional disaster mitigation, including the COVID-19 outbreak, the understanding of the Puskesmas concept of resilience needs to be optimally applied so that the role of the Puskesmas as disaster mitigation can work well.*

**Keywords:** *Strategy, Outbreak, Disaster Mitigation, COVID-19.*

### INTRODUCTION

An epidemic or disease outbreak is one of the biggest causes of population death. Causes of outbreaks of epidemics that cause death can be caused by natural factors, human factors, or disease factors. Natural factors can be in the form of volcanic eruptions, floods, and droughts, while human factors are related to daily activities such as the disposal of household waste and how to exploit natural resources (Putra, 2021). The emergence of an epidemic can give a bad picture of the health condition of the population. Various factors that affect the condition of the community include poor nutrition, lack of clean water, environmental cleanliness, and health services (Fernandes *et al.*, 2020). An epidemic or disease outbreak is one of the biggest causes of population death. Causes of outbreaks of epidemics that cause death can be caused by natural factors, human factors, or disease factors. Natural factors can be in the form of volcanic eruptions, floods, and droughts, while human factors are related to daily activities such as the disposal of household waste and how to exploit natural resources. The emergence of an epidemic can give a bad picture of the health condition of the population. Various factors that affect the condition of the community include poor nutrition, lack of clean water, environmental cleanliness, and health services (Djafri, 2015).

The determination of the COVID-19 virus case by the World Health Organization (WHO) is currently one of the disease outbreaks that hit modern society around the world, starting on December 31, 2019, the WHO China Country Office reported a case of pneumonia of unknown etiology in Wuhan City, Hubei Province,

China. On January 7, 2020, China identified pneumonia of unknown etiology as a new type of coronavirus (novel coronavirus) (Huang *et al.*, 2020). In early 2020 NCP began to become a global pandemic and became a health problem in several countries outside China. Based on the WHO, cluster cases of pneumonia with unclear etiology in Wuhan City have become a worldwide health problem (Contini, 2020).

The number of positive patients infected with the COVID-19 worldwide has reached 2.24 million people. The United States is the country with the largest number of infected patients in the world, approaching 700 thousand people. The COVID-19 pandemic has infected at least 185 countries and killed 153,822 people (WHO, 2020). The spread of this epidemic continued to grow until it was finally discovered that the cause of this pneumonia cluster was the Novel Coronavirus. This pandemic continues to grow until there are reports of new deaths and cases outside China (Nishiura *et al.*, 2020). On January 30, 2020, WHO declared COVID-19 a Public Health Emergency of International Concern (PHEIC). On February 12, 2020, WHO officially designated this novel coronavirus disease in humans as COVID-19. COVID-19 is caused by SARS-COV2, which belongs to the same large family of coronaviruses that caused SARS in 2003, only with a different type of virus. Symptoms are similar to SARS, but the death rate for SARS (9.6%) is higher than for COVID-19 (currently less than 5%), although the number of cases of COVID-19 is much higher than that of SARS. COVID-19 also has a wider and faster spread to several countries than SARS (Chen *et al.*, 2020). Meanwhile in Indonesia, until mid-April 2020 the number of patients with positive cases reached 5,923. Based on data from the Ministry of Health, the most recovered patients are still in DKI Jakarta, which is the epicenter of COVID-19 in Indonesia (KEMENKES, 2020).

Data on the pattern of the 10 largest diseases in West Sumatra in 2019 showed that respiratory infections with 39,267 sufferers or 5.90% ranked fifth after other acute infectious diseases, with the largest percentage found in children (KEMENKES, 2019). Based on a report from the Health Office of West Sumatra Provincial at the beginning of May 2020, as many as 203 West Sumatran residents who were positive for the coronavirus spread across cities and regencies in West Sumatra.

Common signs and symptoms of coronavirus infection include symptoms of acute respiratory distress such as fever, cough, and shortness of breath. In severe cases, it can cause pneumonia, acute respiratory syndrome, kidney failure, and even death. Given the seriousness of the impact caused by extraordinary events and outbreaks due to infectious diseases, it is necessary to take protective measures for the community. When a new outbreak with pandemic potential emerges, nonpharmaceutical interventions, such as outbreak mitigation strategies are the most effective interventions to help slow the transmission of the virus at the community level. Mitigation of the COVID-19 virus outbreak is a series of actions that people and communities can take to help slow the spread of viral infections. Mitigation is very important before a vaccine or drug becomes widely available.

Based on the available evidence, COVID-19 is transmitted through close contact and droplets, not through airborne transmission. The people most at risk of infection are those who are in close contact with COVID-19 patients or who care for COVID-19 patients. Prevention and mitigation measures are the keys to implementation in health and community services (Huang *et al.* 2020). Based on the data above, the researcher is interested in writing a health article about the effect of the COVID-19 Virus Outbreak Mitigation Strategy.

## METHODS

This type of research is library research, which is a series of studies related to library data collection methods, or research whose research objects are explored through various library information (books, encyclopedias, scientific journals, newspapers, magazines, and documents). Literature review or literature research is research that examines or critically reviews the knowledge, ideas, or findings contained in the academic-oriented literature, and formulates its theoretical and methodological contributions to certain

topics (Sugiyono, 2014; Marni & Yanti, 2019; Marni *et al*, 2020<sup>a</sup>; Marni *et al*; 2020<sup>b</sup>; Marni *et al*; 2020<sup>c</sup>; Marni, 2020; Marni *et al*, 2021; Marni & Marlis, 2021; Marni & Pratiwi, 2021). The focus of library research is to find various theories, problems, principles, or ideas that are used to analyze and solve formulated research questions. The nature of this research is descriptive analysis, namely regular decomposition of the data that has been obtained, then given an understanding and explanation so that it can be understood well by the reader.

## RESULTS AND DISCUSSION

Based on the results of a review of 9 literature that researchers analyzed from various sources of information, such as scientific research journals published in various mass media that contain information about the COVID-19 virus disaster mitigation, the results are shown in the following Tabel 1 below.

Tabel 1. Summary of literature on disaster outbreak mitigation

No	Title	Types of research	Population and sample	Results
1	An overview of the preparedness of Puskesmas nurses in disaster management at the Puskesmas, Kasihan, I Bantul, Yogyakarta	Qualitative	Kasihani Health Center, Bantul Yogyakarta	<b>Most of the roles are not carried out properly, due to the lack of preparation from the institutions in disaster preparation. Even though all participants have been provided with emergency handling training, the absence of disaster planning in the family will be a limiting factor for nurses' readiness to respond to disasters.</b>
2	Epidemiology, Evolution, and Cross-Disciplinary Perspectives	Descriptive	COVID-19	COVID-19 was found to also infect animals and not only in humans
3	Importation and human-to-human transmission of a novel coronavirus in Vietnam	Analytic	COVID-19 transmission	The emergence and spread of a new coronavirus (2019-nCoV) from Wuhan, China, has become a global health concern
4	Clinical features of	Analytic	COVID-19	The findings are consistent with person-to-person transmission of this

No	Title	Types of research	Population and sample	Results
	patients infected with 2019 novel coronavirus in Wuhan, China.		patient	novel coronavirus in hospital and family settings, and reports from infected travelers in other geographic areas..
5	The Design of a Health Center Preparedness Assessment Instrument in Handling	Research and Development	Ciamis District	This research has produced priority indicators to support the preparedness of Puskesmas in disaster management. Of the 6 aspects of the assessment, the health mapping aspect has the highest weight and the community empowerment aspect has the lowest priority.
6	Nurses' Efforts in the Mount Kelud Disaster Mitigation Phase Based on the ICN Framework	Descriptive	Nurse for Disaster-Prone Area II, Mount Kelud	Nurses' efforts are both aimed at nurses' efforts in risk reduction and disease prevention, while nurses' efforts are sufficient for health promotion and make fewer efforts on policy development and planning. This is influenced because most nurses have participated in disaster emergency response. Recommendations for nurses to increase capacity in disaster management.
7	Study of knowledge, attitude, anxiety & perceived mental healthcare need in InDian & Munadi population during COVID-19	Analytic survey	662 sample	The level of anxiety identified in this study was high. More than 80% of people are preoccupied with COVID-19 thoughts and 72% report the need to use gloves, and sanitizers. In this study, sleep difficulties, paranoia about contracting a COVID-19 infection, and social media-related problems were reported in 12.5%, 37.8%, and 36.4%, respectively.

No	Title	Types of research	Population and sample	Results
	pandemic			
8	Coronavirus Anxiety Scale: A brief mental health screener for COVID-19 related anxiety. Death studies,	Analytic survey	775 sample	Mental health concerns of people affected by the coronavirus pandemic have not been addressed
9	Stress And Coping In The Time Of COVID-19: Pathways To Resilience And Recovery	Literatur review	People in the midst of the COVID-19 pandemic	The Coronavirus Disease 2019 (COVID-19) has disrupted almost every aspect of daily life, giving birth to forced isolation and social distancing, economic hardship, fear of contracting a potentially deadly disease, and feelings of helplessness and hopelessness.  response to mass crises or disasters, including chronic anxiety and post-traumatic stress

The COVID-19 pandemic threatens not only physical health but also the mental health of every individual. Not only fear, but the psychological effects caused can also have a serious impact (Pgab *et al.*, 2020). This of course can cause fear and panic. Moreover, the recommendation to stay at home and the social distancing policy, which is now called physical distancing, have more or less created an emotional distance between family, friends, co-workers, friends, or community members in places of worship who can support each other. Polizzi (2020) explains that COVID-19 has disrupted almost every aspect of daily life, giving birth to forced isolation and social distancing, economic hardship, fear of contracting a potentially deadly disease, and feelings of helplessness and hopelessness.

Moreover, so far the handling of the mental health of the community and sufferers has not been handled properly, as explained in Lee (2020). This is also confirmed by Roy (2020) where 80% of people are currently preoccupied with anxiety due to thinking about COVID-19. On the other hand, Anam (2018) explained that nurses' efforts in risk reduction and disease prevention were still not optimal, while nurses' efforts were sufficient in health promotion and made less effort on policy development and planning. This is influenced because most nurses have participated in disaster emergency response. Recommendations for nurses to increase capacity in disaster management.

Judging from the problem, it illustrates that disaster mitigation carried out by health workers is still not optimal, especially now that the COVID-19 outbreak has not only infected some areas, but this outbreak has



become a pandemic due to high community mobility, such as from infected travelers in the outbreak area and spread to other areas from its journey (Putra, 2021). According to Dian & Munadi (2017), prevention and mitigation measures are the key to implementation in health and community services. The most effective preventive measures in the community include 1) Performing hand hygiene using hand sanitizer if hands are not visibly dirty or washing hands with soap if hands are visibly dirty; 2) Avoid touching eyes, nose, and mouth; 3) Practice coughing or sneezing etiquette by covering your nose and mouth with the inside of your upper arm or a tissue, then throw the tissue in the trash; 4) Wear a medical mask if you have respiratory symptoms and perform hand hygiene after disposing of the mask; and 5) Maintain a distance (at least 1 m) from people who experience respiratory symptoms.

Infection Prevention and Control Strategy (PPI) Relating to Health Services. Implement standard precautions for all patients Standard precautions should always be applied in all health care facilities to provide safe health care for all patients and reduce the risk of further infection. Standard precautions include 1) hand and respiratory hygiene. Health workers must apply the “5 moments of hand hygiene”, namely: before touching a patient, before performing any hygiene or aseptic procedure, after risking body fluid exposure, after touching a patient, and after coming into contact with the patient's environment, including contaminated surfaces or items. Hand hygiene includes washing hands with soap and water or using an alcohol-based hand rub, washing hands with soap and water when visibly soiled and hand hygiene is also required when using and especially when removing PPE; b) use of PPE according to risk, rational and consistent use of Personal Protective Equipment (PPE), hand hygiene will help reduce the spread of infection. In routine patient care, the use of PPE should be guided by risk assessment/anticipated contact with blood, body fluids, secretions, and injured skin. The PPE used refers to the Infection Control Technical Guidelines by contact, droplet, and airborne precautions. Types of PPE related to COVID-19 based on location, officer, and type of activity are in the appendix. How to use and remove PPE, both gown/dress or coverall, is in the appendix. COVID-19 is a respiratory disease that is different from the Ebola virus disease which is transmitted through body fluids. This difference can be taken into consideration when choosing the use of a gown or coverall; 3) prevention of injuries from sharp objects and needles; 4) Safe waste management Medical waste management by routine procedures; 5) Environmental cleaning and sterilization of linen and patient care equipment. Cleaning environmental surfaces with water and detergent and using a commonly used disinfectant (such as 0.5% hypochlorite or 70% ethanol) is an effective and adequate procedure.

Meanwhile, to optimize the Puskesmas as the front line of regional disaster mitigation, including the COVID-19 outbreak, understanding the concept of Puskesmas resilience needs to be applied optimally so that the role of Puskesmas as disaster mitigation can run as it should. expected during pre-disaster, during a disaster, and post-disaster.

## CONCLUSIONS

The COVID-19 pandemic threatens not only physical health but also the mental health of every individual. Not only fear, the psychological effects caused can have a serious impact. Prevention and mitigation measures are the keys to implementation in health and community services. To optimize the Puskesmas as the front line in mitigating regional disasters, including the COVID-19 outbreak, the understanding of the concept of resilience in the Puskesmas needs to be applied optimally so that the role of the Puskesmas as disaster mitigation can run well.

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