



## Research Article

# Community perception and experience of health services in the midst of an earthquake and COVID-19 pandemic: A phenomenological study

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## ABSTRACT

Indonesia is located on the Pacific Ring of Fire with various disasters occurring frequently and causing tremendous impacts. Recently, Mamuju Regency in West Sulawesi was hit by an earthquake during the COVID-19 pandemic, making primary health care (PHC) a major community health care provider facing several issues. This study aims to explore the challenges and supporting factors of the recovery of PHC after the earthquake during the COVID-19 pandemic using a descriptive phenomenology grounded in Edmund Husserl's philosophy. The Bamboo PHC (Puskesmas Bambu) was selected as the only PHC in Mamuju which was most affected by the earthquake. A focus group discussion method was conducted by involving 15 participants selected using purposive sampling and divided into three groups (health workers, health cadres, and community members). As a result, the community members acknowledged that the Bamboo PHC services programs in general were favorable before the pandemic, there were several basic and superior health service programs that the community felt were valuable. Yet, the COVID-19 pandemic worsened the situation and the use of healthcare facilities decreased. Coupled with the occurrence of natural disasters in vulnerable areas, it is increasingly causing fatalities. Therefore, disaster preparedness and community empowerment are the key to successful disaster management.



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### INTRODUCTION

Indonesia is in the Pacific Ring of Fire (ROF), one of the most active disaster hotspots. This area stretches along the Pacific ROF geographically. It has high volcanic and seismic activities which put Indonesia at major risk for volcano-related disasters such as earthquakes, tsunamis, and volcanic eruptions (Masum and Ali Akbar, 2019). From 1901-2019, there were more than 150 earthquakes with a magnitude of 8 or more that had been recorded around Indonesia. These types of disasters have frequently occurred and become a threat that affects many Indonesians, causing tremendous effects ranging from damaged facilities to physical and psychological injury and death (Sadly *et al.*, 2019).

West Sulawesi is one of the highest levels of seismicity province (176.80), meaning this area is very vulnerable to earthquakes (Badan Nasional Penanggulangan Bencana, 2020). Mamuju City is the capital city of West Sulawesi Province, with the highest risk of disaster, especially earthquakes. Mamuju Regency was hit by an earthquake three times repeatedly within a near time in January 2021. The first with a magnitude of 6.2 Richter Scale occurred on January 15, 2021, the second with a 3.9 Richter Scale on January 20, 2021, and the third with a magnitude of 5.0 Richter Scale on January 26, 2021 (Badan Nasional Penanggulangan Bencana, 2020). The Mamuju earthquake burden was worsened by the COVID-19 pandemic. Primary health care (PHC), as the main basis of community health service and support, faces multiple problems in delivering health services. The delivery and recovery of PHC can be challenging in the post-disaster area during the COVID-19 pandemic.

The government has taken several measures to anticipate and manage disasters. A previous

study mentioned a relationship between the level of knowledge about disasters and the attitude toward disaster preparedness in the community (Suryadi *et al.*, 2021). However, this effort still felt not optimal considering disaster preparation requires practical simulations involving the local community (Sari, 2017). The central government, through the National Board for Disaster Management (BNPB) 2020 acknowledged that mitigation and preparedness efforts for potential disasters in Indonesia are still less than ideal (Badan Nasional Penanggulangan Bencana, 2020).

Even though the government has provided disaster preparedness guidelines there are still many physical and psychological impacts. This is important to see from the side of one's own experience as an essential consideration in formulating more applicable disaster management guidelines. Therefore, it is necessary to conduct a qualitative study to explore the perceptions and experiences of the community in depth towards health services during the Earthquake and COVID-19 pandemic in Mamuju Regency.

### METHODS

The study was a descriptive phenomenology grounded in Edmund Husserl's philosophy and is also known as Husserlian Phenomenology (Koch, 1995; Johnson, 2000). It focuses on the 'lifeworld' or 'lived experience' (Koch, 1995). Therefore, this study has three main concepts: Intentionality (a description of reality), essence (the awareness and perception of the human world), and bracketing (retaining all preconceived judgments) (Koch, 1995).

Mamuju Regency has the capital city in Mamuju located in West Sulawesi Province at 10 38' 110" – 20 54' 552" South Latitude and 110 54' 47" – 130 5' 35" East Longitude. The Central Mamuju Regency borders this area to



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the north, South Sulawesi Province to the east, Mamasa Regency and Majene Regency to the south and the Makassar Strait to the west. Mamuju Regency has an area of 5,064.19 km<sup>2</sup>, administratively, the government is divided into 11 sub-districts consisting of 88 villages. Almost all sub-districts in Mamuju Regency are crossed by rivers with mountainous topography. The selection of Mamuju Regency as the study target because this area is a disaster recovery area that is most affected by the Earthquake. In the Mamuju sub-district, especially the bamboo village, it is one area that is quite difficult to access other areas by land so it tends to be difficult to access health care facilities. Bambu Village has 8 hamlets and 16 neighborhoods with a total population of 4,449 people based on population data for December 2021, consisting of 2,267 men and 2,182 women. The bamboo primary health center (Puskesmas Bambu) is the only health center in the Mamuju sub-district most affected by the disaster.

The study participants were chosen using purposive sampling. A total of 15 participants were engaged in the three focus group discussions (FGD). The FGD participants were health workers, health cadres, and community members. The inclusion criteria for this study were residents aged 18 years and above, categorized as 1) healthcare personnel; 2) community health cadres consisting of all cadres in the target area of the bamboo health center; 3) community members in the Bambu village, Mamuju Regency. All participants are willing to be informants, and victims (direct witnesses) of the Earthquake, and can communicate well in Bahasa Indonesia.

Data was collected during focus group discussions using a tape recorder, video recorder, and field note. Informed consent was obtained before data collection. The processes lasted for 2 hours and were conducted in a meeting room at Puskesmas Bambu to ensure participants'

confidentiality. During the interviews, investigators asked open-ended questions followed by targeted inquiries to allow for specific responses. Standardized guidance was utilized to facilitate this discussion. The questions asked to the participants included the awareness, challenges, and participation of health services before and during the Pandemic and the impact of earthquakes on people's lives, disaster mitigation, and preparedness.

The transcribed data were analyzed using thematic analysis suggested by Braun and Clarke (2006). Firstly, familiarizing with the data to have a deeper understanding of the content and marking ideas for coding. Secondly, generating initial codes: organizing the data into meaningful groups. Then, Developing and reviewing themes: Analyzing the developed codes and considering how different codes may combine to form themes and sub-themes (themes within main themes). The next step is defining and naming themes: Identifying what each theme's essence is about, reflecting upon the aspects captured within the themes, and writing the report (Braun and Clarke, 2006).

This study has been approved by the Health Research Ethics Committee, Faculty of Medicine, Universitas Airlangga number 352/EC/KEPK/FKUA/2021. In addition, pseudonyms were applied, and only the researchers knew the names of the participants. Participants are willing to be recorded during the interview process. Data was stored in a key-protected drive that only can be accessed by the researchers.

## RESULTS

### Characteristics of the participant

In this study, we took participants from three community groups: the general public, health cadres, and healthcare workers. In the first group, the participants are housewives, and



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their last education is high school, aged 26 - 33 years. In the second group, it was also found that all of them were health cadres with the latest education ranging from elementary to high school, and in this group, the oldest age was 60 years. In the third group, we took healthcare workers from the PHC Bambu consisting of health promotion officers, nutritionists, and midwives aged 24 to 29.

Theme 1: Communities' perceptions of basic health services

The community acknowledged that the PHC Bambu services programs in general were favorable before the pandemic, there were several basic and superior health service programs that the community felt were valuable.

“Before the pandemic everything was good. There was morning exercise for the elderly as well as for pregnant women followed by a health examination by cholesterol, blood, and uric acid check too” (YN, community member).

“Free [health examination] because it is dedicated to PROLANIS (chronic disease management program) for elderly.” (All participants).

“Before the pandemic everything was complete, there was a labor delivery room too” (ZF, community member).

On the other hand, people griped that the PHC' services are too long which makes them reluctant to visit. One of the reasons is that service providers are considered too slow in their work.

“Yes, because of the many patients who come, we used to queue for hours... There were various services before the Pandemic.... The problem is the queue is too long... (JH, community member).

“Since there is only one doctor, if the doctor has vaccination duty, well, he doesn't come in. Every day he (came). But sometimes if there is medical intervention outside [PHC], there are too many. The doctor is also busy.” (ZF, community member)

“The emergency room is open, but the doctor doesn't exist, there's only a nurse. If there's a patient on the phone, he [the doctor] doesn't come. He gave a prescription as well as suggested medical intervention just by phone. I mean, just call and talk about patients' complaints and then he said the drug. if it can't be treated then they refer” (YN, community member)

Theme 2: Community participation in accessing health services decreases during the pandemic

The declining community participation is caused by three conditions. First, there are restrictions on PHC activities during the pandemic. Second, local people are afraid to visit the PHC. Third, the spread of hoaxes about vaccines. PHC's activities are prioritized for emergency services, and restrictions are carried out according to the local health office to minimize the potential for COVID-19 transmission.

“[during pandemic] not crowded, all services are closed, only open for an emergency condition” (YN, community member)

“During the pandemic, there is no exercise [PROLANIS Program] and it's been 2 years... local people are afraid” (ZF, community member)

“Local health offices also restrict field activities, at first, we can still do door-to-door [service], but after the pandemic activities such as “Posyandu” have stopped for several months” (CC, healthcare worker).

People are afraid to access the PHC since they are afraid of being considered COVID-19 patients. In addition, the necessity of self-





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quarantine for those who are confirmed makes people increasingly reluctant to access health services.

“Well maybe because they are afraid to come. Some people reported that if they went to the PHC, they were said to be positive for COVID-19” (JH, community member).

“Because in principle, they think that if they go to the PHC, they will be considered to have COVID-19. Even if you just got flu or fever, don’t go to the PHC, said the community” (BL, healthcare worker)

Theme 3: Damages due to the earthquake and its impact on health services.

Despite the damage to infrastructure due to the earthquake, the PHC service continues to run with limitations.

“The situation is chaotic but we continue to provide services. But many facilities are damaged” (BL, healthcare worker).

“We health cadres also continue to walk around the refugee camps. Service [PHC] is uncertain, we focus on meeting the needs of the community” (DA, health cadres).

“To date, the building is still damaged, we serve in tents” (AY, healthcare worker).

“Of course! There are many [baby labor], some patients even give birth in a tent, others even have at the ground floor” (AK, health cadres).

Damage to infrastructure due to the Earthquake caused patients to feel uncomfortable getting health services. This causes the quality of service to be considered not optimal.

“Especially, since it’s hot on the side of the road. In addition, while raining during the service, it is muddy, and lots of mosquitoes. Get fixed as soon as possible so the health service is not in the tent anymore” (ZF, community member).

Theme 4: The absence of supporting facilities for health services and the limited necessities of life after the earthquake

The community and health workers feel that emergency tents are the most needed supporting facilities for services. Some of the necessities of life are also deemed needed, especially the supply of clean water.

“At that time, the help of the tent was what we needed the most... because we didn’t have a place for service” (AY, healthcare worker)

“There is no emergency tent, some patients are sleeping on the ground... No water and gas cylinders, no soap either” (MT, health cadres)

“Most of the water here comes from the mountains, so because of the earthquake, the mountain water became cloudy. So, it is difficult for people to get clean water” (ED, healthcare worker).

Theme 5: The importance of disaster management preparedness in risk areas

Disaster management is an essential thing, especially in disaster-prone areas as an effort to overcome the impacts.

“People should have received counseling before the Earthquake. The local people knew there was a mountain for a place to refuge, but there were also those who were traumatized so they didn’t know where to run” (DA, health cadres).

“Yes, maybe it needs training, so they know how to deal with disasters, such as treating wounds which only limited healthcare workers here can do. So, at least we know what to do as first aid before help/volunteers come” (AY, healthcare worker).

“Well, we need a lot of socialization and disaster training, trauma healing doesn’t exist either” (DW, healthcare worker).



## DISCUSSION

The community service activities that we carry out are included in rare cases because they are carried out in double-burden areas (successive disasters) where the COVID-19 pandemic is coupled with an earthquake that makes the burden of suffering for the community even heavier.

People who live in rural areas are less likely to utilize health facilities and services (Wulandari *et al.*, 2022). Moreover, inequity of healthcare utilization is seen in poor and remote populations which benefit less from healthcare services due to limited access to PHC (Wenang *et al.*, 2021). Furthermore, a prior study in West Sulawesi also revealed that the community complained of long registration time and limited healthcare workers (Muafiroh, Suroto and Ekawati, 2017; Akbar, Ulfah and Maretta, 2020). In line with our findings, one of our participants stated that they struggle with long queues: “Yes, because of the many patients who come, we used to queue for hours... The problem is the queue is too long...”. To provide adequate health services for all, the Indonesian government has made various innovations and improvements in health services. As mandated in the Sustainable Development Goals (SDGs), the government through the national health insurance seeks to meet the target of living a healthy and prosperous life associated with Universal Health Coverage (UHC).

COVID-19 pandemic has tremendously impacted the national healthcare system and further revealed the limited capacity to provide essential health services (Mahendradhata *et al.*, 2021). According to our result, one of the community members reported that there was no PROLANIS Program during the pandemic and it's been 2 years...”. PROLANIS, one of

the government programs conducted in PHC to prevent chronic disease, is also affected. Before the pandemic, this program's coverage trends, participants, and utilization rate increased (Khoe *et al.*, 2020). Subsequently, the implementation of PROLANIS is not optimal in the COVID-19 pandemic in terms of low participation, hindered process, and worse target outcomes (Atmaja, 2022).

Moreover, community participation, satisfaction, and loyalty are crucial determinants for improving PHC services (Setyawan *et al.*, 2022). However, healthcare service is disrupted, especially at the community level through PHC. Primary health service closures as much as 76%, over 41% of home visits have been suspended, and immunization service has been interrupted in more than 65% of PHC (Mahendradhata *et al.*, 2021). Following our findings, this phenomenon has also been observed in Mamuju Regency and brings negative impact to health service in the community as stated by one of the participants, “Local health offices also restrict field activities, at first, we can still do door to door [service], but after pandemic activities such as POSYANDU [community-based mother-child health services] have stopped for several months”.

The COVID-19 pandemic creates a dilemma for the community. They need assistance from health workers and health facilities, on the other hand, there is fear of seeking treatment from health service providers when the COVID-19 pandemic is increasingly widespread (Dinas Kesehatan Provinsi Sulawesi Barat, 2021). Other natural disasters in some risk areas have worsened the uncondusive health services during the pandemic. This condition is captured in our result that some health workers realized many facilities are damaged, and this is in line with previous study, It took hundreds of casualties and death, leaving the surviving citizens with physical injury and psychological



trauma (Idhom, 2021). This disaster's loss reached hundreds of billions of Rupiah and caused tremendous damage to many public infrastructures such as health facilities, bridges, offices, and citizen houses (Idhom, 2021).

Healthcare management in disasters is one of the main parts of disaster management. Health in disasters is influenced by the performance of various sectors and has an interrelated impact on various aspects of disaster management. Health service providers and workers are prone to have big burdens since they also handle victims and damage (Pourhosseini, Ardalan and Mehrolhassani, 2015). A lack of planning before a disaster can leave people without basic life supplies. Through better preparation for disaster management, communities can mitigate the threat of poverty, hunger, and disease. Disasters, lack of health service, and limited clean water can lead to increased sickness, lack of immunity, and a higher risk of infection which negatively impacts the community's health (Nia and Kulatunga, 2017).

Indonesia's progress in disaster management needs to be continuously improved. These efforts require various adjustments to the legal framework that has been implemented in disaster management institutions and governance as a whole. As this research was conducted, various articles have been discussed, and amendments to improve Law No.24 Year 2007 about Disaster management, Period National Disaster Management Plan 2020-2024 (referred to as RENAS PB) which successful implementation depends on the depth of the planning environment assumptions, mainstreaming efforts on the part of the parties involved, as well as a rigorous monitoring and evaluation process (Badan Nasional Penanggulangan Bencana, 2014).

Adequate disaster management preparedness can minimize damage and accelerate the

recovery of public facilities (Patterson, Weil and Patel, 2010). Japan serves as a leading example of a disaster risk mitigation strategy, with a well-organized disaster prevention administration system in place since the 1960s. This was established through the creation of the Disaster Countermeasures Basic ACT and continues to evolve. Key measures to mitigate the impacts of natural disasters include disaster response planning, which outlines procedures for responding to various types of disasters and includes evacuation plans and deployment of rescue and recovery teams; public education to raise awareness about disaster risk reduction and encourage individuals to reduce their risk; and a strong commitment to disaster risk reduction research, including the development of new technologies and techniques to improve preparedness and response. This approach was demonstrated in the case of Japan during the Chuetsu earthquake in March 2007, where despite heavy flooding and a typhoon, most citizens remained unharmed, and it took only one month for the streets and trains to become fully operational (Suindramedhi, 2015).

In Indonesia, disaster response is coordinated by government agencies and non-government organizations. The National Disaster Management Agency (BNPB) is the key to handling disasters in collaboration with the Indonesian Military (TNI), and the National Police (POLRI). However, most disaster response efforts are reactive rather than proactive, initiated only after a disaster occurs instead of being prepared in advance to reduce its impact. Despite efforts by the government, there is still inadequate capacity building and improvement of the disaster framework for preparedness and mitigation. Some of the problems faced include a lack of preparedness, limited capacity of disaster response agencies, a cultural attitude of fatalism which means that people believe that disasters are inevitable and



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there is nothing they can do to prevent them, and inadequate infrastructure particularly in rural areas (Ayuningtyas *et al.*, 2021).

Several efforts have been made by the Indonesian government to anticipate and deal with disasters, one of them through the “Tanggap Tangkas Tangguh” pocket-sized book as a medium for public education. Although it is easily accessed on the internet freely, this solution is hardly implemented because not all people know its existence and will seek disaster mitigation information. This is supported by Central Connecticut State University in the US, that Indonesia ranked 60th out of 61 countries in terms of reading interest (The Jakarta Post, 2016). It concludes that public awareness and involvement as an important element cannot merely be a passive recipient. The actual movement towards preparedness at the local level is lacking. There is an urgency for a new strategy involving public interference as the center of strategy. Some participants realized that they needed disaster management training to know how to deal with disasters as well as trauma healing.

Although our study is the first to report the impact of natural disasters during the pandemic on healthcare services, this study was not without limitations. The ability of the community to speak using the national language is limited and not all participants actively expressed their opinions during the FGD. This made the discussion seem prolonged and made data coding more difficult. Second, the place for FGD used makeshift space and was quite limited which made the participants less concentrated due to lots of crowds and unexpected distractions in the middle of the discussion process.

## CONCLUSION

The COVID-19 pandemic worsened the situation in the community and the utilization of healthcare facilities decreased. Coupled with the occurrence of natural disasters in vulnerable areas, it is increasingly causing fatalities, both material and non-material. Local stakeholder needs to maintain the sustainability of PHC programs through community participation. Moreover, the readiness of healthcare facilities should be ensured to face future unexpected disasters as well as ensure the sustainability of essential resources during and after disasters. Therefore, the need for disaster management is very important, and community empowerment is the key to successful disaster preparedness.

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