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# Exploring The Resilience of Primary Health Care during COVID-19 Health Crisis: A Case Study in Depok City, Indonesia

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## Abstract

**Background:** During COVID-19 pandemic, the primary health care must have its resilience during the health crisis. The first case of COVID-19 in Indonesia was found in Depok City. Therefore the objective of this study is to explore the resilience of primary health care during COVID-19 pandemic as a health crisis situation in Depok City, Indonesia.

**Methods:** This study used a qualitative design by using a case study approach, Focus Group Discussion (FGD) was conducted to10 Heads of Public Health Center in Depok City as the main informant in August 2022. The data were analyzed using content analysis.

**Results:** Public Health Centers in Depok City had a good resilience during COVID-19 pandemic. However, they had a low resilient in financing.

**Conclusions:** COVID-19 pandemic has helped the primary health care to identify the resilience which is crucial to maintain and develop to face other health crisis situation that might be occurred in the future.

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## INTRODUCTION

Indonesia is a disaster-prone country, so it need a well preparation from all component to handle it (Stanton-Geddes & Vun, 2019). One of the components that should be a focus during the natural or non-natural disaster is the health services. The COVID-19 pandemic is considered as a non-natural disaster that cause the health crisis situation globally (Mallah et al., 2021). First, COVID-19 was declared as the public health emergency of international concern, and then it was state as global pandemic followed by World Health Organization (WHO) on March 11, 2020 (WHO, 2020). It reflects the needs of strong health system to handle the situation (Assefa et al., 2021). The primary health services over the world were not ready to handle the crisis when the pandemic occurred in the early of March 2020 (Filip et al., 2022). In the pandemic condition, the healthcare services must be able to respond and adapt to sudden changes of situations (Baris et al., 2022). It implies that healthcare services must have resilience during the health crisis. Resilience is generally defined as the ability to recover easily and quickly from a surprising or unforeseen situation or one that is highly stressful (Seaman et al., 2014). In crisis situations like the COVID-19 pandemic, the resilience of healthcare services becomes crucial in supporting public health resilience. According to Saulnier et al. (2021), health system resilience is the ability of a system to absorb, adapt, or transform to continue performing its essential functions when facing something unexpected or highly stressful during a crisis (Turenne et al., 2019). The awareness that Indonesia needs a strong resilience of health system was discussed since the early pandemic (Firda & Haksama, 2020).

Public Health Centers serve as the frontline healthcare services which directly engage with community. Public Health Center had significant responsibility in responding to the COVID-19 pandemic crisis, not only provided healthcare service for patients but also carried out the data collection and tracing of COVID-19 cases (Aisyah et al., 2022). Healthcare services at Public Health Center need to be prepared and strengthened to meet the high demand for healthcare services in the pandemic era (Arsenault., et.al. 2022). The COVID-19 pandemic crisis underlines the importance of preparedness and planning of healthcare service as demonstrated in the resilience of Public Health Center to continue providing healthcare services in emergencies (Ndayishimiye et al., 2022). The previous research conducted in the early pandemic showed that the number of health workers, medical equipment, and Personal Protective Equipment (PPE) were limited to support the preparedness in facing COVID-19 pandemic in Indonesia (Firmansyah et al., 2020). Furthermore, the analysis of the capacity of the Indonesia Healthcare System in the beginning of pandemic showed that there were challenges on human resources and medical supplies (Mahendradhata et al., 2021). The healthcare services provided by Public Health Center in response to COVID-19 needs to be investigated to determine how the resilience of Public Health Center during COVID-19 pandemic. It will be useful as the evidence-based and lesson-learned since threat to the next pandemic might be happened. Therefore, this research aims to explore the resilience of Public Health Center to COVID-19 through a case study in Depok, Indonesia. The research site was selected because the first case of COVID-19 in Indonesia was identified in Depok.

## METHODS

This study used a qualitative design by using a case study approach. Ten heads of Public Health Center participated in the Focus Group Discussion (FGD) as main informant. Meanwhile, to obtain information about the resilience of Public Health Center as primary healthcare providers, FGD was also conducted with the representatives from the Depok City Health Department. The study was conducted from April to August 2022. The resilience of primary healthcare services was discussed in the FGD which included the topic of financial governance, leadership, and cross-sectoral collaboration; community involvement; healthcare delivery; healthcare workforce; health products and technology; and public health functions. Qualitative data were analyzed using the content analysis method. The data analysis process included data collection, data

review, data reduction, data presentation, and drawing conclusions. The research obtained the ethical approval from the Ethical Committee of Faculty of Health Sciences, Universitas Islam Negeri Syarif Hidayatullah Jakarta (Un.01/F.10/KP.01.1/KE.SP/10.08.008/2022).

## RESULTS AND DISCUSSIONS

Based on the results of the FGD, it was found that there are general practices followed by Public Health Center to build resilience during the COVID-19 crisis. These practices include providing personal protective equipment (APD), changing service procedures, implementing the 3T approach (Testing, Tracing, Treatment), following the 5M guidelines, understanding the Ministry of Health's COVID-19 guidelines, altering the shift schedules of Public Health Center staff, improving the mental health of Public Health Center personnel, enhancing their stamina, implementing community-based interventions, forming PPKM (Community Activity Restriction) teams per sub-district, and providing guidance to neighborhood associations (RT/RW). This was mentioned by one of the informants during the FGD.

> "Perhaps all Public Health Center in Depok, for the first thing we did, because this is an infectious disease, and at that time, our readiness for personal protective equipment (APD) was not fully prepared, both from the Health Department and Public Health Center. So, every Public Health Center tried to ensure that all its personnel wouldn't get exposed, and this was done by using APD. Each Public Health Center used raincoats, and maybe some Public Health Center had APD, but they had to be washed several times. Maybe, initially, it was like that, or maybe almost all Public Health Center in Depok because we were somewhat panicked at that time. And at first, it seemed like everything was transferred to Public Health Center as the frontline." (X1).
>
> "For the resilience of Public Health Center itself during the COVID-19 period, it's to ensure that its personnel continue to endure even with new tasks or cases. Our Public Health Center was small, and patients used to wait inside. Eventually, due to concerns, our staff changed the service procedures, so the waiting room, which used to be indoors, moved outside, and patients were separated from the safe patient areas like that. The second thing is to establish cooperation with the community." (X3).

Additional information was obtained that there is variation in the governance or management of Public Health Center in building resilience during the COVID-19 crisis. Public Health Center conducted the 3T approach, formed COVID-19 alert villages (kampung siaga COVID-19), and involved the community in decision-making for the establishment of PPKM (Community Activity Restriction) and the effectiveness of COVID-19 mitigation measures. This was explained by one of the informants during the FGD as follows.

> "So, at that time, our Public Health Center was small, and patients used to wait inside. Eventually, due to concerns, our staff changed the service procedures, so the waiting room, which used to be indoors, moved outside, and patients were separated from the safe patient areas like that. The second thing is to establish cooperation with the community. At that time, my first experience was in Harapan Jaya, and if I'm in Tanah Baru now, I can see that this Public Health Center is collaborating with community health workers or they have community-based surveillance that assists in tracking confirmed cases or reporting and also helps in monitoring or providing logistics to patients in isolation, it seems the same as other Public Health Center like that." (X2).

Financing or funding for Public Health Center in building resilience during the COVID-19 crisis was also mentioned in the FGD. Public Health Center has allocated community funds to provide PCR services in collaboration with Labkesdas, provide medications to COVID-19 patients, and offer vaccination services. In addition, Public

Health Center has also undergone training in COVID-19 management. This was mentioned in the FGD as follows.

"Now, at that time, the stigma around Covid-19 was still quite strong, you know, so the neighborhood leaders, the RW and RT heads, played a crucial role in addressing this Covid-19 stigma. And then, in our Public Health Center, the RW and RT heads were very helpful in the treatment, providing medication to patients. For example, we had prepared medication for Covid-19 patients in each RW. (Distribution) The RW heads would come to pick up the medication for distribution, so we didn't use checks or anything like that. So, it was really the RW heads who needed to know that there were people in their communities who had been exposed, so they had to help." (X2).

The use of medical products and technology in Public Health Center to build resilience during the COVID-19 crisis also varies. Public Health Center collaborates with various institutions to support the safety, effectiveness, and quality of health products. Additionally, Public Health Center utilizes information systems in handling COVID-19. Furthermore, Public Health Center involves the community in training COVID-19 cadres. Statements from the FGD mention the following

"So we can get patient data reports from hospitals. In Depok city, healthcare facilities have to input data, and now they have to affiliate with the Ministry of Health, so we can see that data. It's easy now. When we don't know if the patient is not coming to the Public Health Center, we can get reports from the NAR, so we know, 'Oh, this patient is being treated by this hospital,' and the data is still the same as ours because it's based on the NIK (National Identification Number) per region." (X1)

Public Health Center also involves the community in building resilience against COVID-19. In the implementation of 3T, Public Health Center engages the community, especially in activities related to case tracking and confirmation, as well as the distribution of medicines for COVID-19 patients. This was mentioned during the Public Health Center FGD.

"We care for patients, especially those who are in self-isolation, and we coordinate with the community in our area. At that time, there was still a strong stigma surrounding COVID-19, so the community leaders, such as the RW and RT heads, played a crucial role in addressing this stigma. In our Public Health Center, the RW and RT heads were instrumental in providing treatment to patients and distributing medications. For example, we prepared medications for COVID-19 patients in each RW, and the RW heads would come to collect the medications for distribution. We didn't need to go through extensive checks; it was the responsibility of the RW heads to ensure that the exposed individuals in their communities received assistance." (X1)

The accessibility and availability of Community Health Centers in building COVID-19 resilience has also varied. Public Health Center limits patient visits to 50% per day, services such as immunizations and visits by pregnant women to around 10-15 patients per day and visits to the elderly are accelerated to prevent prolonged contact with patients. This was explained in the FGD as follows.

"Alhamdulillah, we've changed the way our staff enters the facility. Previously, they could enter freely, but now we all use the same entrance wearing personal protective equipment (PPE). So, we've also adjusted the flow of staff to avoid mingling with patients. Patients themselves come with the required health protocols, like wearing masks. Initially, there was some resistance, but eventually, they became cautious. Perhaps the community started protecting themselves. In terms of services, for healthy check-ups and antenatal care, we limit the number of patients to 10-15 per day. For elderly patients, we try to expedite the process to minimize prolonged contact. We've also limited the number of patients to reduce contact for the staff. Furthermore, we've boosted the staff's stamina by providing boxed lunches from the health center and giving them milk every day to enhance their immune system. So, we've worked on all aspects, from changing the standard operating procedures (SOPs) to improving the staff's stamina, and we're trying to keep a positive spirit." (X2).

The resilience of a community health center is influenced by the individual resilience of the healthcare workers working within it. This

was mentioned in the FGD at the community health center as follows.

> "Who is not afraid of death when we are not ready to face it? The efforts made at the community health center to strengthen the mental resilience of our colleagues, there was an opportunity back then related to a meeting where we invited speakers to discuss how to strengthen our mental well-being in dealing with the pandemic and its various challenges because we never know what challenges lie ahead. Most importantly, we support each other as a team because the resilience of the community health center fundamentally depends on how the team can synergize and collaborate. If there are weaknesses within, how can we endure as an organizational unit?" (X2).

The issue of health resilience is currently a critical issue in healthcare services. The era of healthcare transformation in Indonesia requires health resilience to achieve the highest possible level of public health. The resilience of primary healthcare services can be viewed from several components, as identified in the results of the FGD, including financial governance, leadership, and cross-sectoral collaboration; community involvement; healthcare delivery; healthcare workforce; health products and technology; and public health functions (Haldane et al., 2021). In general, the resilience of primary healthcare services ultimately leads to access and the quality of healthcare services.

**Financial Governance, Leadership and Cross Sectors**

Resilience depends on the system's ability to function and adapt when needed (Rogers H.L et al., 2021). Good governance is considered a core component of a resilient health system because it aims to drive the behavior, priorities, interactions, participation, accountability, and decisions of system actors. Resilience can enhance the governance capacity to respond to unforeseen risks and lead processes that require systemic responses (Saulnier et al., 2021). Health system governance encompasses effective and participatory leadership with a strong vision and communication, coordination of activities among governments and key stakeholders, an organizational culture that is responsive to crises, effective information systems and flows, and supervision that allows for timely detection of shocks and their impacts (Thomas et al., 2020).

Effective and transparent governance practices describe the rules and processes that govern the operation of a health system as an organization (Wiig, S., et al., 2021). Governance practices conducive to health system resilience in several countries can quickly mobilize relevant actors and stakeholders at the local level, enabling the allocation and reconfiguration of financial resources, staff, and material resources in a timely manner in response to crises. The capacity of the health system can also coordinate an integrated response to crisis events by promptly sharing information and efficiently coordinating actions with actors inside and outside the health sector, such as defense, education, transportation, and media sectors, as well as with local communities and civil society organizations (European Commission, 2020). This is because when shocks occur, coordinated actions are often required, necessitating effective collaboration across sectors at various levels of government and between government and non-government stakeholders because governments do not always have a broad reach into all healthcare services, effective collaboration with non-governmental actors is required in emergency situations. In practice, achieving this often requires strong leadership and centralization of decision-making power to align bureaucratic priorities throughout the government (Thomas et al., 2020).

The governance domain includes an assessment of the level of political commitment and leadership in primary healthcare as the main means to achieve Universal Health Coverage (UHC) through strong policies and legislation. It also assesses how a country's governance and policy framework reflects and promotes the components of primary health care (WHO, 2022). Effective leadership in governance must demonstrate that the healthcare system plays a crucial role and is capable of effectively preventing, detecting, or addressing public

health threats, with the greatest beneficiaries being the entire population (Thomas et al., 2020). Organizational leaders, managers, healthcare professionals, and supervisors are encouraged to have a systems thinking approach. Systems thinking challenges organizational leaders and healthcare professionals to seek the root causes of problems, barriers, and constraints that may hinder sustainable solutions. By doing this, leaders shift their focus from blame to desired outcomes and can provide community-based solutions (Marcum, 2022).

The response to the COVID-19 cases provides a clear illustration of the importance of evidence-based governance and leadership that is willing to learn and adjust direction for the success of a healthcare system that safeguards health and well-being (Haldane et al., 2021). Additionally, the response to COVID-19 cases has required governance expertise across levels, sectors, and domains, relying on the system's ability to provide healthcare services to vulnerable population groups. This has required financing for COVID-19 testing, treatment, and vaccination, with some or all of the costs covered by public funds. It also relies on healthcare infrastructure, workforce, and supplies to provide much-needed capacity enhancements in the healthcare system (Bishai, D., et al., 2024). Moreover, fiscal support measures, including aid packages aimed at helping businesses survive, protecting jobs, or providing financial assistance to low-income households and the unemployed, have been implemented by many countries (Haldane et al., 2021). Therefore, healthcare financing is crucial to drive equitable access to high-quality integrated services and minimize financial hardships (WHO, 2022).

**Community Involvement**

Deep engagement with local communities is critical to health system resilience as a way to inform service delivery, decision making and governance, and to meet community needs before, during and after a crisis. (Barker, KM., et al., 2020). Community engagement strategies, such as building partnerships with local leaders and working with community members to adapt the content of messages and campaigns are critical during a public health emergency. Various public health interventions implemented in response to COVID-19, such as mask wearing and social distancing, rely on shared values and a sense of social responsibility within communities to break the chain of virus transmission. Several countries are reviewing the involvement of community networks of health workers (CHWs) to encourage active community participation in the COVID-19 response. Long-standing community health worker programs and initiatives to build community resilience serve as reliable platforms for contextualizing actions to meet local needs (WHO, 2021). Their roles and involvement range from creating awareness through door-to-door visits, supporting contact tracing efforts, maintaining essential health services, providing necessary treatment to patients without COVID-19, supervision or monitoring compliance with quarantine measures, and assessing mental well-being. They are also key to identifying and referring patients who face barriers to accessing healthcare. For example, Thailand mobilized more than 1 million community health workers (CHW) to spread and amplify messages widely in society. Singapore mobilizes volunteers to educate the elderly and help distribute daily necessities. Liberia further empowered community leaders by providing orientation on the epidemiology of COVID-19 to support efforts to contain the disease (Haldane et al., 2021).

**Health Service Delivery**

Health systems globally have implemented three general approaches to rapidly upgrade health system infrastructure, namely by building new care facilities, transforming public places, and reconfiguring existing medical facilities to provide services for COVID-19 patients. In some countries, primary health care providers are rapidly adopting and leveraging digital technology or telehealth services to provide acute and ongoing care, as well as triaging and referring people with COVID-19 symptoms to follow-up services. (A Eriksen. 2023) Additionally, some countries are complementing digital technologies with proactive deployment of existing and new public health resources. Community-based approaches developed

with in-depth knowledge of local contexts are critical in pandemic response and health system resilience, especially considering the disproportionate impact of the pandemic on vulnerable groups. Other health systems rely on home care for patients with mild to moderate COVID-19, with facilities available if patients cannot safely self-isolate in their home (Haldane et al., 2021).

**Health Workforce**

The competence of healthcare workers must be sufficiently high to maintain the day-to-day functioning of the healthcare system and continue to provide quality care, even when resources may be scarce (Fridell et al., 2020). Resilient healthcare systems manage crises by having an adequate, trained, and willing workforce. (Burau, V., et al., 2022). However, during the COVID-19 pandemic, the disease spread rapidly among healthcare workers as they were most exposed to the virus and bore the brunt of the pandemic's impact. Challenges faced by healthcare workers during COVID-19 include low staffing levels (especially nurses) and uneven geographic distribution, a shortage of personal protective equipment (PPE), limited testing capacity, inadequate training, discrimination and social attacks, as well as poor mental health (Haldane et al., 2021).

In some countries like Japan, Mozambique, Singapore, and South Korea, healthcare professionals were supported by measures such as shift arrangements to avoid extended work hours without breaks, leave from duties for mental and physical recovery, accommodations near their workplace to protect themselves and their families, and childcare support. Moreover, most countries reported providing some form of financial support to their healthcare workers, such as monetary incentives, bonuses, insurance, tax allowances, overtime pay, meal allowances, classifying their infections as work-related diseases or injuries, and attributing causes of death as work-related. Psychological support, such as counseling or trauma support, was also provided to healthcare workers to maintain their well-being and morale. This is because healthcare workers and their families are highly vulnerable to psychological interventions. Additionally, some countries launched social media campaigns encouraging the public to show pride, admiration, and gratitude to healthcare workers to boost solidarity (Haldane et al., 2021).

**Health Products and Technology**

Access to medical products is crucial for the healthcare system to function effectively. The domain of pharmaceuticals and other health products measures the availability and affordability of appropriate, safe, effective, and high-quality medicines and health products (WHO, 2022). In the case of COVID-19, the prevention, diagnosis, and quality treatment of the disease require the sustainable development, production, and distribution of medical products and technologies on a large scale. Many healthcare facilities worldwide face stock uncertainties and reports of counterfeit essential medicines, highlighting the need for secure supply chains. Responding to increased demand due to community-wide transmission, countries have enacted laws to prevent hoarding and exploitative pricing, as well as policies prohibiting the export of medical supplies, while loosening licensing requirements and import tariffs. The use of platforms that help monitor logistics networks is an integral part of ensuring a steady and rapid flow of medical products and technologies, promoting transparency, and ensuring better supply chain management (Haldane et al., 2021).

**Public Health Functions**

Public health interventions carried out within communities are performed through testing, contact tracing, quarantine or self-isolation, and monitoring, which are essential functions to break the chain of COVID-19 transmission. (Squires, N., et al., 2023). Proactive testing must be accompanied by comprehensive contact tracing and community partnerships. Contact tracing is done to follow up on individuals who may have been exposed to COVID-19 by identifying individuals downstream who have had contact with COVID-19 patients, or finding the source of infection upstream. Once cases and contacts are identified, self-isolation and quarantine measures are crucial to prevent further

transmission and identify new cases. Given the high transmissibility of COVID-19, surveillance needs to be conducted comprehensively across geographical areas to provide an accurate picture of the disease burden and epidemiology to prevent and mitigate transmission in communities. The implementation of an active surveillance approach has expanded surveillance coverage from healthcare services to the community, such as through primary healthcare services, thereby strengthening epidemiological surveillance among vulnerable populations (Haldane et al., 2021). Surveillance systems must be able to detect, verify, and track incidents or shocks and their impacts in a timely manner (real-time). In addition, healthcare workers need to ensure that surveillance data can reach all relevant stakeholders and can be quickly transformed into useful information for decision-making (European Commission, 2020).

## CONCLUSION

The COVID-19 pandemic has posed challenges to both the healthcare system and the communities it serves. The impact of the significant shock caused by this pandemic has revealed both strengths and weaknesses in the healthcare system and calls for an enhancement of healthcare system resilience. This research has identified that Public Health Center in Depok City demonstrates good resilience during the COVID-19 crisis, with the lowest resilience component being in the financing variable. The resilience of individual healthcare workers plays an important role to support the resilience of Public Health Center in Depok City. In terms of public health function, Public Health Center in Depok City have successfully show their resilience through managing the health service for patient, the implementation of surveillance, and do community-based intervention. It is recommended that Public Health Center should have a good documentation and well-prepared to face the other health crisis that might be occurred in the future. The further research can explore more on the issue of finance or other factor in improving the resilience of primary health care.

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