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Barriers and facilitators to the provision of maternal health services at community health centers during the COVID-19 pandemic: Experiences of midwives in Indonesia

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ABSTRACT

Objective: To explore the experiences of midwives in Indonesia on the provision of maternal health services during the COVID-19 pandemic.
Design and methods: A qualitative descriptive study using focus group discussions was undertaken. A conventional content analysis was used to analyze the data. Coding categories were generated from the transcripts.
Setting and participants: Twenty-two midwives from five community health centers of three regions in the Province of Jambi, Indonesia were included.
Findings: The interviewees shared similar barriers and facilitators in delivering the services, including the unavailability of adequate protective equipment, the limitation of the number of services, and dealing with the new public health measures related to the COVID-19. Overall, midwives demonstrated a continued commitment to provide maternal health services during the pandemic.
Key conclusions and implications for practice: Significant changes in service delivery have been made to comply with pandemic related restrictions. Despite the unprecedentedly difficult working environment, the midwives continue to provide adequate services to the community by implementing a strict health protocol. Findings from this study contribute to a better understanding of how the quality of the services changed, as well as how new challenges can be addressed and positive changes can be reinforced.

Introduction

The World Health Organization (WHO) declared the novel coronavirus (COVID-19) outbreak as a global pandemic in early 2020 (World Health Organization, 2020). Data from WHO shows that there have been about 450 million confirmed cases, including more than 6 million deaths globally (World Health Organization, 2022). There is growing evidence that the number of people who have actually had the virus is predicted to be much higher due to inadequate testing and asymptomatic cases in some countries (Buitrago et al., 2020). The COVID-19 pandemic has fundamentally changed day-to-day life, and this presents an unprecedented challenge to the public health sector. The pandemic had a significant negative impact on social and economic conditions in the community, primarily affecting those in Low- and Middle-Income Countries (LMICs) (Nicola et al., 2020). In particular, the pandemic has impacted the delivery of maternal health services for women at global level (Rocca and Alonso, 2020). Evidence from Kenya presents that the health system, including maternal health services, is becoming overwhelmed as a result of the COVID-19 pandemic (Ombere, 2021). The study evidenced that pregnant mothers

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from low socioeconomic status were unable to access routine or emergency maternity care (Ombere, 2021). In Pakistan, the impact of the pandemic on maternal health services has widely occurred (Sarwer et al., 2020). During the national wide lock-down, most of the maternal health service delivery was suspended and overlooked which potentially led to an increase in maternal mortality (Sarwer et al., 2020).

Indonesia has become one of the LMICs with the highest rate of COVID-19 spread in the world (World Health Organization, 2022). The country has claimed the highest number of daily active cases and deaths (Nugraha et al., 2020). WHO reported that there have been more than 6 million confirmed cases and almost 200,000 deaths in Indonesia since the pandemic started in early January 2020 (World Health Organization, 2022). This situation has led to disruptions in health and social care system. Although the pandemic is under control, the government of Indonesia is still implementing restrictions in some parts of the country and is striving to provide adequate health services to nearly 280 million people (Khairulbahri, 2021). A high maternal mortality rate remains the leading public health issue in the country, which accounts for 305 per 100,000 live births in 2015 (Statistics Indonesia, 2015). The figure is among the highest mortality ratios in Southeast Asian countries (ASEAN Statistics, 2016). A series of commitments and initiatives pledged to reduce maternal mortality achieving the global MMR target of 70 per 100,000 live births by 2030 (United Nations, 2017). Clearly, the action requires sustained efforts, particularly during the pandemic.

Many efforts have been implemented to improve adequate maternal health service which include provision of skilled delivery attendants, antenatal care, and postnatal care mainly at community health centers. However, the Government currently is facing challenges in implementing the existing maternal mortality reduction programs due to the COVID-19 restrictions. Although the Government recently developed guidelines on how midwives provide maternal health services (Ministry of Health Republic of Indonesia 2020), it is challenging to implement them in some healthcare facilities. The effects of the pandemic on maternal health may result wider consequences. Thus, the provision of adequate services is considered the most relevant intervention to reduce maternal mortality at the primary healthcare level. The Indonesian province of Jambi, for instance, considered to be an area of substantial and high transmission rate of COVID-19. The Indonesian authority has announced that the Province of Jambi and other areas are currently under multi-tiered public activity restrictions level four at which the essential and non-essential sector activities are allowed to operate with a maximum capacity of 50% (Indonesia's COVID-19 Task Force, 2021). The levels of restrictions continue to change periodically according to the daily infection rate of COVID-19 reports. Although the provincial government applies micro-scale restrictions in all regencies, the maternal mortality reduction program remains implemented in response to the high mortality ratio in this province.

Although there were several studies which have examined the maternity care during the pandemic in Indonesia (Hazfiarini et al., 2022 and Ariani, 2022), there is limited information and evidence-based research that is available to examine the provision of maternal health services at the community health centers (CHCs) during the COVID-19 pandemic in the Province of Jambi. Accordingly, understanding the potential barriers and facilitators of maternal health services provision could contribute to designing appropriate strategies and policies for the improvement of maternal health services provision and utilization at the CHC level. Hence, this study aimed to explore the perspectives and experiences of midwives on the provision of maternal health services in the Province of Jambi in times of the COVID-19 pandemic.

Methods

Qualitative approach and paradigm

This qualitative study intends to understand the experiences of the participants by means of in-depth dialoguing and construction of sense-making of multiple subjective realities of the Indonesian midwives with attention paid to the values they represent and possible empowerment coming from the experience of collective sense-making (Silverman, 2010 and Denzin, 2000). This study adopts a constructivist paradigm that aims at constructing participants' understanding and knowledge of the phenomenon. This is done by asking and recording and interpreting the participants' perspectives (Bhattacharya, 2017 and Pilarska, 2021) enabling the researcher to develop a greater understanding Focus group discussions based on a semi-structured questionnaire were used as a data collection tool. The approach provides a better opportunity for the researcher and participants to actively interact with each other (Kitzinger, 2005). Focus group discussion is frequently used to gain an in-depth understanding of particular social phenomena (Ochieng et al., 2018), and the data obtained from the interactions between the researcher and the researched can be used for social problem solving of the target group (Alex and Evan, 2007).

This study is reported according to the Standards for Reporting Qualitative Research (SRQR) (Bridget et al., 2014). The study is part of a larger research project for which the Institutional Review Board for Health Research at the Faculty of Medicine and Health Sciences Universitas Jambi, Indonesia granted ethical approval prior to study commencement. In addition, the letter of approval was obtained from the Department of Health in each regency allowing the authors to conduct the research in the CHCs. All participants read a statement explaining the purpose of the study and provided their informed written consent to participate in the study.

Study context and settings

In Indonesia, the provision of maternal health services is primarily provided by the community health center and other networks at the community level, including village health posts (Mahendradhata et al., 2017). The services are mainly supported by the midwives who are responsible for providing antenatal care, delivery, and postpartum care (Mahendradhata et al., 2017). Since this study addresses a new phenomenon of maternal health services provided during the COVID-19 pandemic, the study basis is not underpinned by a theoretical framework, rather we present views and experiences generated from the participants.

This study was conducted in five CHCs (See Fig. 1) which were categorized as the emergency obstetric and neonatal community health centers (PONED) (Ministry of Health Republic of Indonesia, 2021) in three municipalities (Municipality of Sungai Penuh, Municipality of Jambi and Merangin Regency) in the Province of Jambi, Indonesia. The regencies were selected purposively based on specific criteria: (1) representing western, central and eastern regions; (2) the number of COVID-19 cases and its mortality rate is amongst the highest compared to other eight regencies in the Province of Jambi (Indonesia's COVID-19 Task Force, 2021).

Study participants, sampling and recruitment

Participants were selected based on the following inclusion criteria; registered midwives who are assigned to the maternal health services unit at the CHCs, the midwives who have at least two consecutive years of maternal health services, and their participation as the study participants has been appointed by the midwife coordinators. A purposive sampling method was used to select midwives who were able to participate in the research.

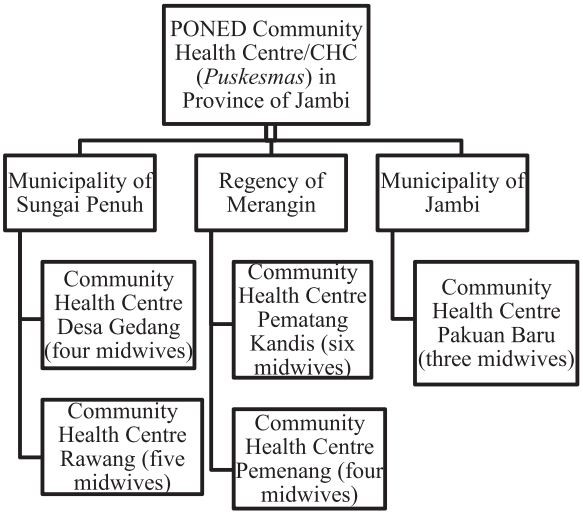

Fig. 1. Sampling frame.

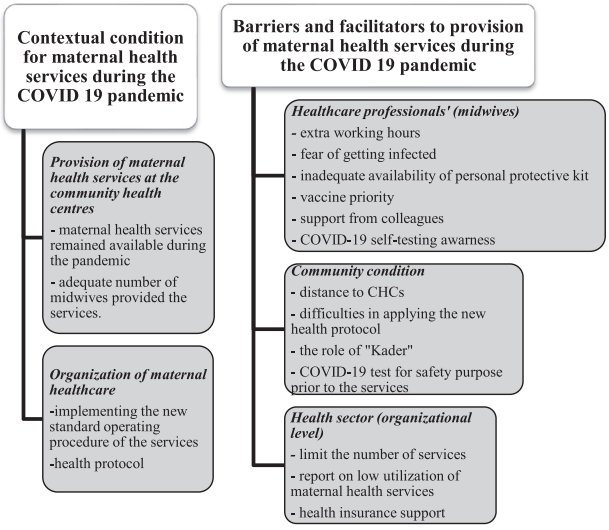

Fig. 2. Themes and sub-themes of midwives' perspectives in providing maternal health services during the COVID-19 pandemic.

Data collection and management

A semi-structured questioning plot was developed to guide the discussions and encouraged the participants to express their opinions by exploring deeply into personal and detailed information (DeJonckheere and Vaughn, 2019). The questioning route was pretested in a CHC apart from targeted CHC. The study aimed to gain feedback from the midwives based on focus group discussion guidance questions. Piloting for FGDs is an essential aspect and useful in this qualitative study since it identifies the flaws and limitations within the FGD activities (Malmqvist et al., 2019). Hence, the result of pilot study allowed for modifications and improvement of the main FGDs.

In total, five focus group discussions (consisting of three to six midwives each) were conducted in five CHCs. All focus FGDs were conducted between February and May 2021 by the first author and helped by research assistants who had received training in FGD techniques. The FGD were audio-recorded and conducted at the maternal and child section of the CHCs. The first author steered the discussions and took notes during the FGDs to capture interesting moments from the participants. The first author designated one assistant to be a note-taker at each FGD while another assistant controlled the audio recording function throughout the discussions. Each discussion had a different time allocation depending on the working activities of the participants on the appointed days. Generally, the discussions lasted from 60 to 90 min.

Prior to conducting FGDs, the participants were provided with informed consent sheets that contain information related to the study, benefits and harms, and confidentiality. The researcher provided time for the participants to read and understand the information and then decided if they agreed to involve in the study. A warm and permissive environment was created to welcome the participants in the discussions. The seating arrangement was not arranged in any specific way in order to make the situation look comfortable and less formal. At first the researchers introduced the research team and provided a brief overview of the topic to be discussed. The participants were encouraged to share their experiences and different point of view on the topic. Participants were also assured that there were no correct or incorrect opinions. All focus group discussions were conducted in Bahasa Indonesia.

Data analysis

The transcripts of five focus group discussions were written in Bahasa Indonesia. The first author translated the documents into English, whereas a third party translated the English text back to Bahasa Indonesia and compared the texts to verify the accuracy of the English translation. We used a conventional content analysis (Hsieh and Shannon, 2005) to analyze the transcripts. The qualitative content analysis finds the manifest and latent meaning of the text data that the results can be generalized and represented the ideas generated by the participants (Graneheim, and Lundman, 2004). In this type of qualitative analysis, coding categories are generated from the text data, and the analysis begins with a supporting theory or relevant existing research findings as guidance for initial codes analysis (Hsieh and Shannon, 2005).

Data analysis started with reading all text data from the transcripts repeatedly to obtain a sense of the comprehensive information by the first author. The first author led data analysis using atlas.ti version 9 the Maastricht University license (Atlas, 2020), a qualitative data management software to manage coded data and structure the data the way the authors need. The first author conducted a line-by-line coding of the FGD transcripts. Identified codes and categories were discussed with the research team members. Diverging codes were re-evaluated and discussed by all the authors. The consensus was reached to yield final categorizations and themes.

Findings

The maternal health service restrictions instituted by the municipality Department of Health to manage the spread of COVID-19 created a number of facilitators and barriers for the midwives in the CHC's. The two main themes were constructed based on the qualitative analysis of the data, including the condition of maternal health services at the CHC during the pandemic as well as barriers and facilitators related to the healthcare provider, community level conditions, and organizational health sector level (see Fig. 2).

Twenty-two midwives agreed to participate in this study by signing the informed consent forms (Table 1). All participants represented the five PONED CHCs in the Province of Jambi. Participants' ages ranged from the late 20 s to 50 s, and fifteen participants had worked as registered midwives for more than five years in the CHCs. Fourteen midwives had a diploma in midwifery (Diploma 3) and they are still doing a bachelor's degree program (Diploma 4) as part of a development and career program.

Table 1
Characteristics of participants.

Participant ID	CHCs	Age range (years)	Highest education level	Working period at the CHCs (years)	Employee status
Midwife 1	Desa Gedang	21–30	Diploma 4 in Midwifery*	More than 5	Government
Midwife 2	Desa Gedang	31–50	Diploma 3 in Midwifery**	More than 5	Government
Midwife 3	Desa Gedang	31–50	Diploma 3 in Midwifery	More than 5	Government
Midwife 4	Desa Gedang	31–50	Diploma 4 in Midwifery	More than 5	Government
Midwife 5	Rawang	31–50	Diploma 4 in Midwifery	More than 5	Government
Midwife 6	Rawang	31–50	Diploma 4 in Midwifery	More than 5	Government
Midwife 7	Rawang	21–30	Diploma 3 in Midwifery	1–5	Contract
Midwife 8	Rawang	21–30	Diploma 3 in Midwifery	More than 5	Contract
Midwife 9	Rawang	21–30	Diploma 3 in Midwifery	1–5	Contract
Midwife 10	Pematang Kandis	More than 50	Diploma 3 in Midwifery	More than 5	Government
Midwife 11	Pematang Kandis	31–50	Diploma 3 in Midwifery	More than 5	Government
Midwife 12	Pematang Kandis	31–50	Diploma 3 in Midwifery	More than 5	Government
Midwife 13	Pematang Kandis	31–50	Diploma 3 in Midwifery	More than 5	Government
Midwife 14	Pematang Kandis	21–30	Diploma 3 in Midwifery	1–5	Government
Midwife 15	Pematang Kandis	21–30	Diploma 3 in Midwifery	1–5	Contract
Midwife 16	Pamenang	More than 50	Bachelor in Public Health	More than 5	Government
Midwife 17	Pamenang	More than 50	Diploma 3 in Midwifery	More than 5	Government
Midwife 18	Pamenang	21–30	Diploma 4 in Midwifery	1–5	Contract
Midwife 19	Pamenang	21–30	Diploma 3 in Midwifery	1–5	Government
Midwife 20	Pakuan Baru	31–50	Diploma 4 in Midwifery	More than 5	Government
Midwife 21	Pakuan Baru	More than 50	Diploma 4 in Midwifery	More than 5	Government
Midwife 22	Pakuan Baru	21–30	Diploma 3 in Midwifery	1–5	Contract

* *Diploma 4 Equivalent to a bachelor's degree.*
** *Diploma 3* Equivalent to an associate's degree.

Contextual condition for maternal health services during the COVID-19 pandemic

The COVID-19 pandemic has affected the provision of maternal services in the CHCs. Almost all public facilities were closed except for essential healthcare facilities which continue to provide services under different circumstances. One midwife said:

> *"In the first wave of the COVID-19 in 2020, we were all very surprised. At that time, the Government immediately ordered to close of all access to public services that potentially transmitted the virus. This did not include the healthcare facilities, the community health centers remained open to provide essential healthcare services to the community, including maternal health services."* (Midwife 11)

In addition, the municipality department of health instructed new guidelines to manage maternal health services during the COVID-19 pandemic. This impacted the way the midwives worked and how they treated the women. Some midwives reported that they must be able to conduct a brief review on the new procedure and soon applied to the services as explained here:

> *"This pandemic is a new thing to us, isn't it? The way we deliver the services to the clients is also different from the normal condition before the pandemic. The municipality department of health has released the new maternal health service delivery guideline, and we must understand the protocol so that we can directly apply it to the clients at the community health centers."* (Midwife 5)

> *"In this community health center, the number of clients who utilized the maternal health services during the pandemic was similar to the condition before the pandemic. The main difference was how we treated the clients according to the new guideline from the Government. There is the new procedure that midwives should be taken into consideration."* (Midwife 2)

Services became limited and the number of antenatal 'check ups' decreased. Although the CHCs continued to provide maternal health services during the first three months of the pandemic, the services were limited to the essential services. As a consequence, there was a reduction in the frequency of visits to the CHCs. For example:

> *"We used to conduct monthly check-up for the clients, and the number of monthly visits were very high. During the pandemic, we were not able to provide a normal service for the clients due to restriction policy from the municipal health department. It is undeniable that the number of visit also decreased, particularly at the beginning of the pandemic."* (Midwife 16)

Apart from services limitations, midwives and women were also required to meet strict health and safety guidelines. As one midwife said:

> *"We followed the new health protocol, wearing masks, keeping safe distance, reducing service time in order to ensure our health and safety. The clients also, we have provided posters in front of the room on detailed protocols should be applied. They have to wash their hand, wearing mask."* (Midwife 1)

Facilitators to provision of maternal health services during the COVID-19 pandemic

The enabling factors of maternal health service provision during the COVID-19 pandemic emerged throughout the discussions with the midwives. The health workers received priority access to the COVID-19 vaccines. One of the midwives thus said:

> *"We were pleased to receive the privileged that we were prioritized by the Government to get fully COVID-19 vaccinated. Although the effectiveness of the vaccines is still questioned, we do believe that the vaccine can still offer protection against the further effect of the virus infection."* (Midwife 1)

The midwives took regular antigen tests provided by the CHCs. The test aimed at revealing if a midwife was infected with a virus. The purpose of this policy was to support the effective maternal health services provided by midwives. This was well expressed by one of the midwives:

> *"The COVID-10 task force at the CHC level conducted weekly antigen tests to all health workers, including us in the maternal health section. The guideline provides a clear order to get regular tests.*

We considered this an important step since we met people every day, so we were in the high-risk group. So, we were used to the nasal swab procedure" (Midwife 20)

Some community health centers did not provide regular tests for the midwives. The midwives conducted a rapid antigen test and had initiatives to do self-isolation if they performed any COVID-19 symptoms. One midwife said:

"At the beginning of the pandemic, all of us were equipped with complete protective kits, including hazmat suits. The suit was not comfortable to wear, therefore, we did not use this protective suit. If we felt unwell, we simply informed other colleagues that we did self-isolation at home without having tested. Other healthy midwives will handle our duties while we were in the quarantine." (Midwife 18)

The community health workers who are chosen by and from within the community, called "*Kader*", played an important role in encouraging women to access and utilize the maternal health services at the CHCs during the COVID-19 pandemic. This group collaboratively worked with the midwives to encourage and motivate mothers in improving their maternal health status. One of the midwives explained:

"Maternal health service is one of the essential services provided by the midwives at the CHCs. The health providers put the service as a priority to avoid delay in service provision. Therefore, we were always standby to provide adequate services to the clients, including during the pandemic. We also appreciated the role of Kader in the community for their substantial contribution to encourage mothers utilizing the maternal health services at the CHCs." (Midwife 13)

The national health insurance of Indonesia helped people with middle-lower income to access the healthcare service in the primary healthcare setting, including the CHCs. During the COVID-19 pandemic, the maternal health services were available at all times and required immediate action for all clients, including those who live outside of CHC coverage areas. All services were covered by national health insurance without any lengthy administrative procedures, as described by this midwife:

"Well, the national health insurance did not allow us to accept clients who are not in the CHC coverage area. However, the policy changed during the pandemic. We provided maternal health services for all clients mainly those who needed immediate treatment or referral to the hospital." (Midwife 9)

Although the COVID-19 pandemic has affected the provision of maternal health services in the community health center settings, the availability of sufficient midwives is one of the strengths and opportunities in providing adequate services to the clients. One midwife explained:

"We are very pleased that our community health center is supported by a sufficient number of midwives. Therefore, whatever the conditions are, we are still able to provide adequate maternal health services. We have fifty-seven midwives as both a government employee and a contract-based employee. The CHC covers four working areas, and this is a large coverage. This is not a problem for us since we can reach all clients both in urban and rural areas." (Midwife 14)

The midwives expressed their appreciation to the clients for their awareness and for keeping up with the health protocols prior to utilizing maternal health services. This included approval to carry out a COVID-19 test before delivery at the CHCs. The positive attitude of the clients indicated support to prevent the COVID-19 transmission. This midwife explained:

"Including delivery service for the clients, we also asked for their approval to conduct an antigen test or other COVID-19 tests prior to receiving the services at the CHCs. The midwives felt safe knowing that their clients were also safe. Apart from that, we asked the clients whether they had been vaccinated or not. However, we sometimes ignored this requirement considering the medical condition of the clients." (Midwife 1)

Barriers to provision of maternal health services during the COVID-19 pandemic

The midwives felt unsafe working in the CHCs since they are at a high risk of getting infected by the clients or other colleagues. One midwife explained:

"Although the coordinator had arranged the work shift to reduce the transmission, we sometimes had extra hours to do another task at the CHCs apart from our main responsibility as a midwife. We reported the condition of maternal health services on the daily basis to the head of CHC, and the report will be forwarded to the municipality health department. We were fearful of getting infected by others. We never know who brought the virus and transmitted it to us." (Midwife 5)

Moreover, the fears, worries and anxieties were the overwhelming parts of midwives' daily activities during the pandemic. These conditions deteriorated with other colleagues testing positive for COVID-19. The system at the CHCs became disrupted and was not able to provide the maternal health services to the clients adequately, as evidenced here:

"We were worried about the COVID-19 self-testing. Once we had the results of the tests, it sometimes led to self-anxiety. If the testing came with positive results, the CHC will be closed for three days to stop the transmission. This also obviously affected the provision of essential maternal health services. The clients were not able to access the services." (Midwife 7)

The midwives were expecting that they would be supplied with proper self-protective kits. The use of medical face masks, for instance, increased over the first three months of the pandemic. However, the health workers experienced a shortage of the mask supply to protect themselves when on duty, as explained here:

"We were in an unstable situation at the beginning of the pandemic. The health workers were supposed to be equipped with standard personal protective equipment. However, it was challenging to have at least a medical face mask due to its supply shortage. The non-medical community also used this type of mask, we should get the priority instead." (Midwife 16)

Although the healthcare providers continued to provide essential services for the clients, the services must be delivered according to a strict health protocol. Since the protocol is relatively new, the midwives had to educate clients about it during their visit to the maternal health sections of the CHCs. For example:

"The maternal health services users must follow all instructions stated in the new health protocol. We explained many times to the clients in person during the service delivery, and also we put posters containing information about the COVID-19 health protocol on every single side of the CHCs. However, they sometimes skipped the steps as they wanted to receive the service from the midwives as quick as possible." (Midwife 17)

Lack of equipment and supplies impacted on the midwives' safety. Although, clients often ignored the new health protocol by not wearing the faces masks consistently they also were not able to fulfill the other aspect of the protocol to wash their hands as

there was no handwashing equipment or supplies. One midwife explained:

> *"Although the clients must always be reminded, they were aware of the importance of wearing face masks during their visit to the CHCs. They sometimes forgot to put the mask on, once they read the protocol, they quickly put it back. However, we found out that the clients did not wash their hands as a part of the protocol. This was acceptable and understandable since the CHCs did not provide adequate equipment to support this protocol. At least, they were wearing face masks, and it was more than just enough for us."* (Midwife 2)

Distance to the community health centers was considered a factor associated with the low utilization of maternal health services during the pandemic especially the delivery service. One midwife reported:

> *"For the delivery purposes, the clients decided to utilize the nearest private maternal health facilities. They consider the distance of the residential area to the CHCs. It sometimes took 1 h to get to the CHCs, whereas they could access the private clinics close by."* (Midwife 10)

During the pandemic, some clients preferred to visit the tertiary maternal health clinics, where they received the services from the gynecologist, over to the CHCs. Most of the clients used their private health insurance to access the services. One of the midwives shared a thought:

> *"In general, the people living in the area of this CHC are classified as middle-high-income communities. Although it is mandatory to visit a CHC during the first trimester of pregnancy, the people sometimes ignored this recommendation, including during the COVID-19 pandemic. The main reason was that they were able to afford to receive an advanced maternal service from a doctor who specializes in women's health."* (Midwife 16)

Before the COVID-19 pandemic, the midwives often visited the community to deliver maternal health services. This visit accommodated those who were not able to travel to the CHCs due to long distances. The midwives suspended the program during the pandemic and advised the clients to contact the CHCs in order to receive maternal health services. One midwife said:

> *"Once every one month, we visited households to provide basic maternal health services for the clients. We eventually reduced the frequency of visits due to the COVID-19 restrictions. This decision was made in order to minimize virus transmission. The solution was that we invited the clients to come to the CHCs to receive the services, however, they preferred not to come since they were worried about the virus, and also lived far away."* (Midwife 6)

In addition, a new maternal health service delivery guideline regulates the phases of both providing and receiving maternal health services. The main component of the new regulation was to limit the maternal health services, including reducing the number of clients visiting the CHCs as one of the midwives explained:

> *"Normally, we had 15–20 visits to the maternal health section every day. This figure might vary from one day to another day. In general, we had a very high number of visits. The COVID-19 pandemic had changed everything, including the number of clients utilizing the maternal health services at the CHC. We followed the recommendation from the new guideline that the services must be limited to not more than 10 visits. We sometimes had 5 visits every day during the pandemic."* (Midwife 21)

Concerning the monthly report of maternal health status to the municipal health department, the midwives explained that there was a downward trend in many aspects, including the number of antenatal care visits, delivery at the CHCs and the postnatal care visits. Although the services remained open under the condition to follow strictly the health protocols, the clients opted for not to utilize the CHC services feeling that they would have taken a big risk for themselves as explained here:

> *"The number of clients visiting the maternal health section at the CHC during the pandemic was lower than this before the pandemic. Particularly at the beginning of the pandemic, people were afraid of the rapid transmission. Thus, they preferred to stay at home. We reported the condition to the health department. Once we experienced zero visit to the maternal health section for about a week. This condition was understandable as people kept themselves safe."* (Midwife 7)

All the participants recommended that the barriers should be properly addressed by the relevant agencies across sectors, including municipal health departments, community leaders, and community health centers. The supporting factors are essentially improved to respond to the potential barriers in the provision of adequate maternal health services during the pandemic.

Discussion

From the perspective of midwives, this study provides insights and understanding of the barriers and facilitators to maternal health services at community health centers. Despite the uncertainty in delivering the services, the midwives are required to maintain the quality of maternal health services according to the standards determined by the government. The new standard of service delivery was based on the most recent COVID-19 pandemic situation. This covers ANC, delivery, and postpartum care protocols (Ministry of Health Republic of Indonesia 2020). As the first entry point to the health care system, the CHCs continue to provide all essential maternal health services at any time.

The changes brought about by the government were very concrete and targeted to have the least possible face-to-face ANC visits, whereas the health protocols to be strictly applied by the clients visiting the CHC for delivery purposes (Ministry of Health Republic of Indonesia 2020). The new guideline aims to protect all midwives from the risk of COVID-19 transmission while carrying out their duties. In addition, the changes have an effect on the services' users being well-protected, and the risk of COVID-19 spreading can be reduced. However, the adjustments created barriers to the provision of maternal health services.

Over the pandemic period, the number of clients visiting CHCs declined. The midwives in this study described that women prefer to visit private clinics close to their residences due to the visit restriction to the CHCs. The long distance to the CHCs is considered the main reason, and this is followed by the health and safety reasons for visiting the CHCs during the pandemic. This condition led to changes in the patient's interest in receiving maternal health services from the CHCs. The changes in service delivery were associated with the client's visit (Hazfiarini et al., 2022; Vargas et all 2022; Atmuri et al., 2022). Similarly, Haiti experienced the antenatal care and delivery visit reduction at the maternal healthcare facilities due to the strict regulations of the COVID-19 (Aranda et al., 2022). A study at the healthcare facilities in Ethiopia depicts that the number of visits decline during the implementation of the COVID-19 measures, especially a decreased in all elements of essential maternal health services (Abdela et al., 2020). The decline in utilization of maternal health services at the CHCs is concerning since women should be able to access maternal health services without delay. At the same time, there is growing concern that the pandemic will disrupt the delivery of maternal health services, particularly in resource-limited areas. Although strict health protocols affected the limitation of the maternal health services, the health

of midwives and service users remained the main priority during the pandemic.

Another barrier to provide maternal health services during the pandemic was the fear of being infected with the COVID-19. The midwives were worried about the lack of personal protective equipment provision for them. This obviously affects the quality of maternal health services provision during the pandemic. This finding is consistent with other studies indicating that maternal healthcare providers are concerned with becoming infected with the disease and are under-equipped with protective tools (Pallangyo et al., 2020; Bradfield et al., 2021). The shortage of personal protective equipment was caused by the panic buying that occurred in the community. Inadequate knowledge of the COVID-19 preventive actions led to this condition at the beginning of the pandemic. As a consequence, the community stocked all types of personal equipment, including medical face masks, which are mainly used by the health workers.

In addition to the numerous barriers, several facilitating factors ensure the quality of maternal health service delivery during the pandemic, including prioritization of COVID-19 vaccination to protect the midwives from potential local transmission while they deal with their duties. Mandatory vaccination is one of the key strategies (Maneze et al., 2023) that aims to protect the midwives from potential local transmission while they deal with their duties. This finding further contrasts with a qualitative study from Ethiopia that found healthcare workers were hesitant to get COVID-19 vaccine. A variety of factors contributed to vaccine hesitancy, including vaccine efficacy and unknown vaccine side effects (Shiferie et al., 2021). Another study in Cyprus shows that most healthcare workers at the frontline of the COVID-19, such as nurses and midwives, are qualified as vaccine hesitant as they reported unwillingness to receive the vaccine (Fakonti et al., 2021).

Some midwives highlighted that health insurance support is one of the essential strategies for maintaining maternal health service utilization. Simplifying the flow of service utilization supported by health insurance aims to encourage women to have quick and easy access to maternal health services at the CHCs. An increase in health insurance use contributes to progress towards improving maternal health status (Haven et al., 2018), including during the COVID-19 pandemic. Furthermore, the positive community awareness towards strict health protocols supports the creation of standardized implementation of maternal health services at the CHC. This effective behavior should be frequently advocated to the public to mitigate the infection of COVID-19. Healthcare workers at the primary healthcare level should promote the new regulation of maternal health services utilization to the general public on a regular basis in order to reduce the potential risk of COVID-19 infection.

Strengths and limitations

This is the first study on this topic that focused on contributing to a better understanding of the adequate provision of maternal health services at the community health center level during the COVID-19 pandemic. This study used a focus group discussion technique to gain valuable information from midwives who have experienced various conditions in the provision of services during this uncertain time.

Due to government measures during data collection, this study covered mainly five community health centers in three regions; thus, the experiences may not represent all midwives in the Province of Jambi. However, the selected research sites are representative of three regions: the western, center and eastern parts of the Province of Jambi. Although the relatively small number of participants may be consider a limitation to the study, the findings extracted from the discussions were rich and strong to inform accordingly the research question. It may also be noted that the due to the pandemic restrictions, a limited number of midwives had the experience needed to address the requirements of the current study. Further qualitative research using a larger research site should be conducted to obtain comprehensive and contextual information from all types of community health centers supported by various data collection methods.

Conclusion

Although the COVID-19 pandemic has resulted in a significant change in the provision of maternal health services at the community health center level, the midwives continue to provide services to the community under strict health protocols. The identified barriers and facilitators to maternal health service provision include fear of getting infected, inadequate availability of personal protective kits, extra working hours, applying the strict new health protocols, and limitation of services.

Potential barriers to the provision of adequate maternal health services during the COVID-19 pandemic need to be further addressed by policymakers. Strategies to reduce critical challenges in maternal health service provision are urgently required. The quality of services might be strengthened by human resources, provision of essential protective personal equipment, and developing a new comprehensive policy to improve the standard-based of maternal health services. The community's involvement by adhering to the COVID-19 preventive program and control measures will also benefit midwives dealing with the challenges of the pandemic.

Ethical approval

This study obtained ethical approval from the Institutional Review Board for Health Research at the Faculty of Medicine and Health Sciences Universitas Jambi, Indonesia (Ref.no 795/UN21.8/PT.01.04/2021). All participants provided informed written consent to participate in this study.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Authors' contributions

HW, MN, FA and AY set up the survey and collected the data. KZ, VK and PS reviewed and commented on the data collection instrument and the study methodology. HW contributed to data analysis and writing up the first draft. KZ, VK and PS reviewed and edited all drafts. All authors approved the final version and agreed with its publication.

Credit author statement

Herwansyah conducted the Focus Group Discussions (FGDs) and collected the data. Professor Katarzyna Czabanowska, Professor Peter Schröder-Bäck and Dr. Stavroula Kalaitzi acted as Supervisors mainly to review and comment on the data collection instrument and the study methodology. Herwansyah contributed to data analysis and writing up the first draft. Professor Katarzyna Czabanowska, Professor Peter Schröder-Bäck and Dr. Stavroula Kalaitzi reviewed and edited all drafts. All authors approved the final version and agreed with its publication.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2023.103713.

References

Abdela, S.G., Berhanu, A.B., Ferede, L.M., van Griensven, J., 2020. Essential healthcare services in the face of COVID-19 prevention: experiences from a referral hospital in Ethiopia. Am. J. Trop. Med. Hyg. 103 (3), 1198–1200. doi:10.4269/ajtmh.20-0464.

Alex, B., Evan, W., 2007. Competing paradigms and health research. In: Saks, M., Allsop, J. (Eds.), Researching Health: Qualitative, Quantitative and Mixed Methods. SAGE, pp. 16–31.

Aranda, Z., Binde, T., Tashman, K., Tadikonda, A., Mawindo, B., Maweu, D., Boley, E.J., Mphande, I., Dumbuya, I., Montaño, M., Clisbee, M., Mvula, M.G., Ndayizigiye, M., Casella Jean-Baptiste, M., Varney, P.F., Anyango, S., Grépin, K.A., Law, M.R., Mugunga, J.C., Fulcher, I.R., 2022. Disruptions in maternal health service use during the COVID-19 pandemic in 2020: experiences from 37 health facilities in low-income and middle-income countries. BMJ Glob. Health 7 (1), e007247. doi:10.1136/bmjgh-2021-007247.

Ariani, N., 2022. Antenatal care services utilization during COVID-19 s wave attack in Pasuruan, Indonesia. J. Med. Life 15 (1), 7–14. doi:10.25122/jml-2021-0238.

ASEAN Statistics, 2016. ASEAN Statistical Yearbook 2015. The ASEAN Secretariat, Jakarta, Indonesia.

ATLAS.ti 9.1.7.0 for windows. 2020.

Atmuri, K., Sarkar, M., Obudu, E., Kumar, A., 2022. Perspectives of pregnant women during the COVID-19 pandemic: a qualitative study. Women Birth 35 (3), 280–288. doi:10.1016/j.wombi.2021.03.008.

Bradfield, Z., Wynter, K., Hauck, Y., Vasilevski, V., Kuliukas, L., Wilson, A.N., Szabo, R.A., Homer, C.S.E., Sweet, L., 2021. Experiences of receiving and providing maternity care during the COVID-19 pandemic in Australia: a five-cohort cross-sectional comparison. PLoS One 16 (3), e0248488. doi:10.1371/journal.pone.0248488.

Bhattacharya, K, 2017. Fundamentals of Qualitative research: a Practical Guide. Routledge.

Bridget, C., Ilene, B.H., Thomas, J.B., Darcy, A.R., David, A.C., 2014. Standards for reporting qualitative research: a synthesis of recommendations. Acad. Med. 89 (9), 1245–1251. doi:10.1097/acm.0000000000000388.

Buitrago-Garcia, D., Egli-Gany, D., Counotte, M.J., Hossmann, S., Imeri, H., Ipekci, A.M., Salanti, G., Low, N., 2020. Occurrence and transmission potential of asymptomatic and presymptomatic SARS-CoV-2 infections: a living systematic review and meta-analysis. PLoS Med. 17 (9), e1003346. doi:10.1371/journal.pmed.1003346.

DeJonckheere, M., Vaughn, L.M., 2019. Semi structured interviewing in primary care research: a balance of relationship and rigor. Fam. Med. Commun. Health 7 (2), e000057. doi:10.1136/fmch-2018-000057.

Denzin, N.K., Lincoln, Y.S., 2000. Handbook of Qualitative Research, 2 ed. Sage, Thousand Oaks, Calif ed.

Fakonti, G., Kyprianidou, M., Toumbis, G., Giannakou, K., 2021. Attitudes and acceptance of COVID-19 vaccination among nurses and midwives in Cyprus: a cross-sectional survey. Front. Public Health 9, 656138. doi:10.3389/fpubh.2021.656138.

Graneheim, U.H., Lundman, B., 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. Nurse Educ. Today 24 (2), 105–112. doi:10.1016/j.nedt.2003.10.001.

Haven, N., Dobson, A.E., Yusuf, K., Kellermann, S., Mutahunga, B., Stewart, A.G., et al., 2018. Community-based health insurance increased health care utilization and reduced mortality in children under-5, around Bwindi Community Hospital, Uganda between 2015 and 2017. Front. Public Health 6.

Hazfiarini, A., Zahroh, R.I., Akter, S., Homer, C.S.E., Bohren, M.A., 2022. Indonesian midwives' perspectives on changes in the provision of maternity care during the COVID-19 pandemic: a qualitative study. Midwifery 108, 103291. doi:10.1016/j.midw.2022.103291.

Hsieh, H.-F., Shannon, S.E., 2005. Three approaches to qualitative content analysis. Qual. Health Res. 15 (9), 1277–1288.

Indonesia's COVID-19 Task Force., 2021. Implementation of community activities restrictions. Available from: https://corona.jambiprov.go.id/. Accessed 14 March 2022.

Khairulbahri, M., 2021. Lessons learned from three Southeast Asian countries during the COVID-19 pandemic. J. Policy Model. 43 (6), 1354–1364. doi:10.1016/j.jpolmod.2021.09.002.

Kitzinger, J., 2005. Focus group research: using group dynamics to explore perceptions, experiences and understandings. In: Holloway, I. (Ed.), Qualitative Research in Health Care. Open University Press, Maidenhead, pp. 56–70.

Mahendradhata, Y., Trisnantoro, L., Listyadewi, S., Soewondo, P., Marthias, T., et al., 2017. The Republic of Indonesia health system review. Health Syst. Transit. 7 (1), WHO Regional Office for South-East Asia. https://apps.who.int/iris/handle/10665/254716.

Malmqvist, J., Hellberg, K., Möllås, G., Rose, R., Shevlin, M., 2019. Conducting the pilot study: a neglected part of the research process? Methodological findings supporting the importance of piloting in qualitative research studies. Int. J. Qual. Method. 18, 1609406919878341. doi:10.1177/1609406919878341.

Maneze, D., Salamonson, Y., Grollman, M., Montayre, J., Ramjan, L., 2023. Mandatory COVID-19 vaccination for healthcare workers: a discussion paper. Int. J. Nurs. Stud. 138, 104389.

Ministry of Health Republic of Indonesia, 2021. Basic Data For Community Health Centre Province of Jambi. Jakarta, Indonesia.

Ministry of Health Republic of Indonesia., 2020. Guidelines For Pregnant women, maternity, Postpartum and New-Borns in the Era of the COVID-19 Pandemic. Jakarta, Indonesia.

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., Agha, R., 2020. The socio-economic implications of the coronavirus pandemic (COVID-19): a review. Int. J. Surg. (London, England) 78, 185–193. doi:10.1016/j.ijsu.2020.04.018.

Nugraha, B., Wahyuni, L.K., Laswati, H., Kusumastuti, P., Tulaar, A.B., Gutenbrunner, C., 2020. COVID-19 pandemic in Indonesia: situation and challenges of rehabilitation medicine in Indonesia. Acta Med. Indones 52 (3), 299–305.

Ochieng, N.T., Wilson, K., Derrick, C.J., Mukherjee, N., 2018. The use of focus group discussion methodology: insights from two decades of application in conservation. Methods Ecol. Evol. 9, 20–32. doi:10.1111/2041-210X.12860.

Ombere, S.O., 2021. Access to maternal health services during the COVID-19 pandemic: experiences of indigent mothers and health care providers in Kilifi County, Kenya [Original Research]. Front. Sociol. 6. doi:10.3389/fsoc.2021.613042.

Pallangyo, E., Nakate, M.G., Maina, R., Fleming, V., 2020. The impact of covid-19 on midwives' practice in Kenya, Uganda and Tanzania: a reflective account. Midwifery 89, 102775. doi:10.1016/j.midw.2020.102775.

Pilarska, J., 2021. 6 The constructivist paradigm and phenomenological qualitative research design. In: Pabel, Anja, Pryce, Josephine, Anderson, Allison (Eds.), Research Paradigm Considerations For Emerging Scholars. Channel View Publications, Bristol, Blue Ridge Summit, pp. 64–83. doi:10.21832/97818 edited by.

Rocca-Ihenacho, L., Alonso, C., 2020. Where do women birth during a pandemic? Changing perspectives on Safe Motherhood during the COVID-19 pandemic. J. Glob. Health Sci. 2 (1). doi:10.35500/jghs.2020.2.e4.

Sarwer, A., Javed, B., Soto, E.B., Mashwani, Z.U., 2020. Impact of the COVID-19 pandemic on maternal health services in Pakistan. Int. J. Health. Plann. Manage. 35 (6), 1306–1310. doi:10.1002/hpm.3048.

Shiferie, F., Sada, O., Fenta, T., Kaba, M., Fentie, A.M., 2021. Exploring reasons for COVID-19 vaccine hesitancy among healthcare providers in Ethiopia. Pan Afr. Med. J. 40, 213. doi:10.11604/pamj.2021.40.213.30699.

Silverman, D., 2010. Doing Qualitative research: a Practical Handbook. Sage, Los Angeles, CA.

Statistics Indonesia., 2015. Maternal Mortality Ratio in Indonesia. Available from: https://www.bps.go.id/indikator/indikator/view_data/0000/data/1349/sdgs_3/1. Accessed 10 March 2022.

United Nations., 2017. Sustainable Development Goals (SDGs): goal 3: ensure healthy lives and promote well-being for all at all ages. Available from: https://unstats.un.org/sdgs/report/2017/goal-03/. Accessed 10 March 2022.

Vargas Rubilar, J., Richaud, M.C., Lemos, V.N., Balabanian, C., 2022. Parenting and Children's Behavior During the COVID-19 Pandemic: mother's Perspective. Front. Psychol. 13, 801614. doi:10.3389/fpsyg.2022.801614.

World Health Organization WHO., 2020. WHO Director-General's opening remarks at the media briefing on COVID-19-11 March 2020. Geneva, Switzerland.

World Health Organization., 2022. WHO Coronavirus (COVID-19) Dashboard. Available from: https://covid19.who.int/. Accessed 8 March 2022.