How maternal and neonatal services at the community level during the COVID-19 pandemic in Indonesia?

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ABSTRACT
Background: The COVID-19 pandemic has led to changes in maternal and neonatal care methods. This situation can trigger anxiety and confusion for mothers and families in accessing health services to support their maternal and neonatal health. Accordingly, while midwives have become the main health workers in providing maternal and neonatal health care, the quality of care is still maintained during the many challenges occurring due to COVID-19 in the community.

Objectives: This study aimed to analyze and describe the implementation of maternal and neonatal care in Indonesian communities during the COVID-19 pandemic.

Methods: The study used a cross-sectional design. A sample of 132 midwives was enrolled with snowball sampling technique. Data analysis with frequency and percentage used univariate analysis.

Results: Maternal and neonatal care in the community during the COVID-19 period was done well (53%).

Conclusions: Quality maternal and neonatal care in the community during the COVID-19 period was maintained.

Keywords: Maternal and neonatal care OR Covid-19 OR Community

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BACKGROUND
The Coronavirus Disease 2019 (COVID-19) pandemic continues to be a global concern today. The spread of the novel COVID-19 originating from Wuhan, China was very rapid and massive, infecting over 15 million people in the last six months. Until July 25, 2020, the prevalence of COVID-19 sufferers in some hard-hit areas of the world, based on the World Health Organization (WHO), was reaching 170 cases per 100,000 population with over 264,000 deaths globally. Europe has one of the highest numbers of confirmed cases with 3 million people infected and about 200,000 fatalities. COVID-19 data in Southeast Asia indicated over 222, 231 confirmed cases with 6,374 deaths, while in Indonesia the COVID-19 case numbers have reached an estimated 100,000 positive confirmed patients, with 52,000 recovered, and over 4,500 deaths[1]. This outbreak not only has increasing rates of morbidity and mortality but is also paralyzing the activities of various sectors, including travel, education, and the economy both at the global and domestic levels.

Efforts to prevent the spread of COVID-19 continue to be made to stop or slow the disease transmission in the community. Governments and organizations at the local, national, regional, and global levels have developed guidelines for the health system and the community [3]. Health guidelines and protocols are tailored to the age category, public areas, transportation hubs, health facilities, industry, and tourism for those with special needs and disseminated online to enable people to quickly access the important information. Since March 2020, the Indonesian government has published national health guidelines, one of which covers maternal and neonatal health services[2]. The focus of these guidelines is to prevent the spread of COVID-19 to mothers during pregnancy, childbirth, and post-delivery as well as newborn services during the COVID-19 pandemic period. Recent research stated it is important to clarify official information about when and how pregnant women are to receive pregnancy, childbirth, and birth care if suspected or confirmed with COVID-19 infection in order to prevent confusion in seeking care[3].

Health workers such as midwives need to disseminate accurate information concerning infection control measures and the use of personal protective equipment (PPE) to mothers and families. In addition, it is also very important to provide clarification to mothers about changes in maternal and neonatal care methods during the pandemic period and clear information related to the use of PPE of health workers according to the specific danger levels in order to avoid fears of mothers and families of visiting health care providers[4]. Based on the guidelines for medical service providers from the Ministry of Health, changes in methods for unconfirmed mothers include reducing the number of physical visits to the primary health care centers. Mothers are encouraged to study maternity
care procedures independently at home, while consultations are done only online if there are no complaints, pregnant classes are also done online, and integrated service post (Posyandu) can be replaced by online consultations. Likewise, the postpartum visit to the clinic, which was only done once, then was replaced with a home visit by an official medical service provider. However, meanwhile, scheduled immunization, family planning, emergencies, and even childbirth are still conducted in regular service settings [5]. When large-scale area restrictions were imposed and the number of COVID-19 rates increased, then in response, concerns of mothers and families were raised. During the pandemic, a total of 575 independent midwife practices were closed [6]. Public health programs such as Posyandu in a number of regions throughout Indonesia have been temporarily cancelled, so there are no services at Posyandu for maternal and child health. There is a fear among mothers of immunizing their babies because of the children becoming infected with COVID-19 and some children have even died [7]. In addition to immunization, a decrease in family planning users also occurred during the COVID-19 pandemic [8]. Likewise, while many hospitals or health facilities are imposing regulations not permitting visitors during cesarean labor and delivery, companions are still permitted for support but are limited to only one person with strict regulations. Accurate and accessible information about the risks of COVID-19 has been shown to help reduce the heightened level of anxiety in mothers and their families. This research aimed to analyze and describe the reality during the COVID-19 pandemic of midwives in serving pregnant women, childbirth, and newborns at the community level in Indonesia.

**METHODS**

**Study Design**

This research used a cross-sectional method, which is used to study the cause and effects that occur in the object of research measured or collected simultaneously [9].

**Sample**

A sample of 132 midwives was enrolled in the study with the snowball sampling technique. Snowball sampling is a data source sampling technique which is used when a first number of participants are not able to provide complete data, then the subjects are asked to helpfind other people who could be used as data sources [10].

**Data Collecting**

The research was conducted between April 25th until May 10th, 2020. The data collection method used primary data obtained from online questionnaires through a Google survey form. The researchers developed a maternal and neonatal service questionnaire in the community consisting of 33 statement items with yes or no options for answering.

**Data Analysis**

This research used univariate analysis to describe the frequency distribution of all of the study variables. Analysis of data from survey responses included frequency and percentage.

**Results**

**Respondent Characteristics**

<table>
<thead>
<tr>
<th>Variable</th>
<th>F</th>
<th>P (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Late teens</td>
<td>10</td>
<td>7.6</td>
</tr>
<tr>
<td>Early adulthood</td>
<td>57</td>
<td>43.2</td>
</tr>
<tr>
<td>Late adulthood</td>
<td>43</td>
<td>32.6</td>
</tr>
<tr>
<td>Early Elderly</td>
<td>22</td>
<td>16.7</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>119</td>
<td>90.2</td>
</tr>
<tr>
<td>Bachelor</td>
<td>10</td>
<td>7.6</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td><strong>Workplace</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Health Centers (Puskesmas)</td>
<td>92</td>
<td>69.7</td>
</tr>
<tr>
<td>Village Midwives</td>
<td>40</td>
<td>30.3</td>
</tr>
<tr>
<td><strong>Work Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract</td>
<td>7</td>
<td>5.3</td>
</tr>
<tr>
<td>Honorary</td>
<td>19</td>
<td>14.4</td>
</tr>
<tr>
<td>Private</td>
<td>13</td>
<td>9.8</td>
</tr>
<tr>
<td>Civil Servant</td>
<td>93</td>
<td>70.5</td>
</tr>
<tr>
<td><strong>COVID-19 Task Force Officer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71</td>
<td>53.8</td>
</tr>
<tr>
<td>No</td>
<td>61</td>
<td>46.2</td>
</tr>
</tbody>
</table>

The results showed that the majority of respondents were in early adulthood (43.2%), had midwifery D3 education (90.2%), worked in public health centers (Puskesmas) (69.7%) with the length of work ranging from 11-20 years (34.8%), are civil servants (70.5%), and the majority are not clustered in the acceleration of handling COVID-19 (53.8%).

**Maternal and Neonatal Services in the Community During the COVID-19 Pandemic Period**

Maternal and neonatal services in this study were divided into three services including antenatal (ANC) services, delivery services, and childbirth and neonatal services. Each service is described in the following graphs.
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Figure 1. ANC services during the COVID-19 pandemic

Based on Figure 1 show that 51% of respondents are reducing ANC visits. The majority of midwives (86%) are still screening the pregnancy risk when first visit ANC, and 52% continuing ANC services while still applying the 10T Standard, conducting a complete physical examination (65%), and a complete anamnesis (86%). During ANC, 57% of respondents used complete personal protective equipment and 97% washed their hands before and after the examination. Most respondents also advised pregnant women to wear masks during the visit (98%) and allowed pregnant women to be accompanied by their husband or family (17%). Only 2% of respondents continue to hold classes for pregnant women. Respondents also conducted a referral system if they encountered an ANC emergency case (82%) and 6% experienced problems when making a referral.

Delivery services

Figure 2. Delivery services during the Covid-19 pandemic

The results showed that 57% of midwives are continuing to provide childbirth services during the COVID-19 pandemic. Respondents who did COVID-19 status screening on maternal mothers were 92%, assisted in childbirth using complete personal protective equipment (85%), and midwives who initiated early breastfeeding regardless of COVID-19 status was 33% and midwives who allow husband/family to accompany childbirth was as much as 39%.

Postpartum and neonatal services
Postpartum and newborn services continue to be conducted by respondents during the COVID-19 pandemic. As many as 25% of respondents visited postpartum women and screened COVID-19 status for postpartum women (90%), and 73% midwives counseled new mothers and 87% advised members family to do physical distancing with infants and puerperal women. As many as 80% of midwives ask mothers to keep breastfeeding their babies. Posyandu for toddlers continues to be done with as many as 4% and midwives who provide contraceptive services without looking at COVID-19 status was 21%. her ultrasound scan, the community midwife will attend or meet her to do the scan and consult, perform an examination and record basic observations including blood tests, domestic violence, and perinatal mental health screening. Pregnant women are asked to maintain the schedule for those who have made face-to-face appointments themselves with community midwives at the residence of pregnant women and pregnant women are required to use personal protective equipment when meeting with community midwives[12].

The study results show that 86% midwives are still do the screening of pregnancy risk during covid-19 pandemic. This is in line with the recommendation that care for women and pregnant individuals at risk including obstetrical risks, fetal risks, medical comorbidities or psychosocial issues should create an individualized care plan to determine the schedule of visits. Not all contacts have to be in-person and virtual care can be considered. Ensuring appropriate blood pressure screening (either home monitoring or in-person visits) can be individualized[13].

Reducing the number of visits at the clinic would reduce contact with hospital personnel and minimize virus transmission. Even with the application of the COVID-19 screening method before the clinic visit, when conducting ANC examinations, the mother is required to use personal protective equipment and then can be accompanied by her husband [3,14]. Pregnant women are not allowed to attend face-to-face meetings directly. Pregnant women have stopped most of the face-to-face consultations and replaced them with online and telephone consultations as an effort to conduct screening. Meanwhile, clinic face-to-face appointment and home visits continue at the

| Conduct regular Integrated Service Post (Posyandu)  |
| Encourage physical distancing of each family member |
| Keep doing counseling for postpartum women in accordance with the problem |
| Use complete personal protective equipment during a postpartum visit |
| Checking COVID-19 exposure in postpartum women |
| Keep on the puerperal visit during the COVID-19 pandemic |
| Using personal protective equipment during contraceptive services |
| Serving contraception regardless of COVID-19 status |
| Screening COVID-19 status to postpartum women |
| Encourage the postpartum women to breastfeed babies |

![Figure 3. Postpartum and newborn services during the Covid-19 pandemic](image)

Overall services of mothers and infants in the community during the COVID-19 pandemic are presented in Figure 4.

![Figure 4. Frequency distribution of maternal and neonatal services in the community during the COVID-19 pandemic (n = 132)](image)

Maternal and neonatal services by midwives during the COVID-19 pandemic period were categorized as good (53%), sufficient (45.5%) and lacking (1.5%).

**DISCUSSION**

The study results show that 40% midwives are still giving the ANC services by face to face meetings. The mode of ANC services delivery should be modified, and innovative ways of care provision are recommended with due consideration of individualized care plans[11]. The women who live in the local areas can do ANC services by telephone and restrict visits with community midwives, and community midwives can provide screening to pregnant women. When a woman visits the hospital for
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hospital and also pregnant women who undergo hospital examination face-to-face are required to use complete personal protective equipment along with their husband/store reduce the transmission of COVID-19 when examining with the 10T standard. The change in maternity care during a pandemic should be done, as is in the UK by changing the antenatal visit technique through virtual methods[15][16], but in Indonesia, it cannot be implemented due to lack of facilities.

This dilemma leads to the modified implementation of the ANC by reducing visits during the COVID-19 pandemic. The study results show that health workers in childbearing services are still able to assist in childbirth by using personal protective equipment. The importance of the use of complete personal protective equipment for midwives/health workers who provide delivery assistance is very important to break the chain of transmission of COVID-19. This is in line with the protocols in Labor and Delivery units that conduct simulations of the COVID-19 pandemic, including donning personal protective equipment (PPE)[17].

The study results indicate some midwives are initiating early breastfeeding regardless of the status of Covid-19. This can happen because the midwife does not check COVID 19 status before the mother is giving birth. The majority of midwives only screen for early signs of COVID-19 such as fever and respiratory symptoms. The options regarding breastfeeding are justifiable since the infection by Covid-19 is still very new and little known. However, puerperal women and their families must be very well informed to make a conscious choice based on the most current information available in the literature[18].

The study results showed that many midwives are allowing husband/family to accompany childbirth. This is possible because of the habits of Indonesian people who if they give birth are always accompanied either by their mother or mother-in-law or accompanied by a traditional doula, who is a skilled birth attendant. Implementing a labor and delivery unit visitor policy necessitates balancing risks and benefits in the face of uncertain and evolving information. Ideally, such policy making balances the benefits and risks to the patient, the visitor, the community, the health care team, and perhaps above all, to the infant, in an evidence-based, non-reactionary, and compassionate manner[19].

The study results show that the midwives are still giving the delivery services during the COVID-19 pandemic. The midwives are trained to provide safe intrapartum care in the home environment. In the context of a pandemic, women who are pregnant can still deliver at home and do not have to come to health services and are accompanied by a community midwife[20].

The study results show that the majority of midwives who cared for patients during the COVID-19 pandemic used complete personal protective equipment. This is because the midwife has the responsibility to break the chain of transmission of the virus. In addition, the use of complete personal protective equipment reduces the mental burden of midwives as a frontline in maternal and child health services, because fear of transmission of the virus will affect the quality of service. Protecting health care workers is an important component of public health measures for addressing the COVID-19 epidemic. Special interventions to promote mental well-being in health care workers exposed to COVID-19 need to be immediately implemented, with women, nurses, and frontline workers require particular attention.[21] Prevention principles include screening pregnant women and controlling infection using complete personal protective equipment, conducting consultations and providing care when emergency indications arise and clarifying to mothers that they can easily access referral facilities[22].

Facility levels for puerperal women for COVID-19 differ between high and low to-middle income countries, including significant differences in updating the guidelines, setting referrals for screening for puerperal mothers, availability of testing, and dedicating isolation spaces for patients with confirmed or suspected COVID-19. Midwives also suggest mothers should still provide breastfeeding for their newborns[23]. Global and local efforts must be made to ensure that displaced populations have access to appropriate infection prevention measures, testing, and medical care, and for quality maternal and newborn services to stop the anticipated exacerbation of negative health outcomes[24]. The knowledge gap regarding mother and newborn separation needs to be filled. According to the current evidence, it seems that skin-to-skin contact and breastfeeding can be recommended, but it is critical to screen pregnant women, implement prevention and control measures, and closely monitor newborns at risk of COVID-19[25].

Recent research found themidwives’ recommendations for the ANC visits are strongly associated with good knowledge about neonatal dangersigns. Mothers who had four or more ANC visits during pregnancy had 3.6 times increased chances of having good knowledge about neonatal dangersigns compared to those who had fewer than four visits, because mothers who frequently visited ANC during pregnancy were more likely to have postnatal care[26]. This finding could be due to the creation of awareness about the signs of non-fatal danger during their PNC visit before conducting postpartum visit examinations, which is when mothers are first directed to screening and advised to keep breastfeeding their babies[27].

The role of midwives outside the hospital in supervising women and their children after birth, and the importance of screening during ANC visits and post-partum, it is equally important to ensure that they have all the appropriate personal protective equipment they need (masks, overalls, gloves, etc.)[28]. It is recommended that mothers to continue breastfeeding during the COVID-19 pandemic and to maintain safe social distancing when outside the home. Institutions should make a list of midwives outside the hospital who can provide advanced care for women and their children after birth to strengthen the city/hospital relationship.

CONCLUSIONS

The majority of maternal and neonatal services in the community during the COVID-19 period are being maintained and well-conducted.

Abbreviations

ANC: Antenatal Care, PNC: Postnatal Care, COVID-19: Corona Virus Disease 2019, PPE: personal protective equipment.

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Conflict of Interests
The authors declare that they have no competing interests.

Ethical Statement
All participants signed an informed consent at the beginning of the first meeting before fully engaged in the study process.

Credit Authorship Contribution statement
JO and EN are PhD students and first and second author of this manuscript and wrote the first draft of the manuscript. WW, ND revised the manuscript critically. All authors read and approved the final manuscript. All authors read and approved the final manuscript.

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REFERENCES

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