

The effect of the COVID-19 pandemic on the quality of antenatal care services in Probolinggo District

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Abstract

Background. On March 11, 2020, the World Health Organization announced the status of a global pandemic for the 2019 coronavirus disease (COVID-19). Pregnant women are most vulnerable to being infected with COVID-19 and must take extra care of their health. The impact and risk of COVID-19 on pregnant and lactating women as well as on the fetus and baby are not yet known with certainty. However, due to changes in body shape and immune system, pregnant women are very susceptible to some respiratory infections.

Objective. The purpose of this study was to determine the effect of the COVID-19 pandemic on the quality of antenatal care (ANC) services in Probolinggo Regency.

Methods. This analytic research has a cross-sectional design. The participants are 326 pregnant women in the third trimester. Sampling uses simple random sampling. The sample is some pregnant women in the third trimester, as many as 179 people. Chi-

square is used for analysis.

Results. According to the study's findings, as many as 170 respondents did not confirm that they had COVID-19 (95%). 153 respondents were provided with quality ANC services (85%).

Conclusion. The results of the statistical test obtained a value of $P=0.09$; so there is an influence during the COVID-19 pandemic on the quality of ANC services. Efforts that can be made are health workers limit meetings with pregnant women without reducing the quality of ANC services.

Introduction

A pandemic is the occurrence of an outbreak of a disease that attacks many victims, simultaneously in various countries. Meanwhile, in the case of the 2019 coronavirus disease (COVID-19), the World Health Organization (WHO) has declared this disease a pandemic because all citizens of the world have the potential to be infected with COVID-19. On March 11, 2020, WHO announced the status of a global pandemic for COVID-19. With the stipulation of the global pandemic status, WHO also confirmed that COVID-19 is an international emergency. This means that every hospital and clinic around the world is advised to be able to prepare to treat patients with the disease even though no patients have been detected yet.¹

Based on the results of research by Siska *et al.*,² the impact of COVID-19 on pregnant women is high, and it includes anxiety, labor with hot surgery, fever, and cough. The results of research by Wening *et al.* stated that COVID-19 in pregnancy is dangerous for both the mother and baby.³ Mothers with COVID-19 have clinical airway symptoms which will aggravate the condition of pregnancy; for babies, if intrauterine transmission occurs, COVID-19 will cause acute respiratory distress syndrome which is life-threatening.³ The results of a study by Bangsawan stated that women who experience COVID-19 infection during pregnancy have higher levels of maternal morbidity and mortality including premature birth, preeclampsia, neonatal morbidity, perinatal morbidity and mortality including stillbirth.⁴

Antenatal care (ANC) examination is a pregnancy examination that aims to optimally improve the physical and mental health of pregnant women so that they can face the period of childbirth and postpartum, face preparation for exclusive breastfeeding, and return to normal reproductive health. Pregnancy examinations are carried out at least 6 times during pregnancy, namely 2 examinations in the first trimester, 1 examination in the second trimester, and 3 examinations in the third trimester. Pregnancy check-ups can be done at the health center, clinic, or at the hospital. ANC examinations can be carried out by health workers, including midwives, nurses, general practitioners, as well as obstetrics and gynecology specialists.⁵ Based on the results of Azizah *et al.*,⁶ 70.3% of mothers comply with ANC visits. Moreover, there is a relationship between age, knowledge, husband support, education, attitude, and the frequency of ANC visits during the COVID-19 pandemic.⁶ The

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results of Trisanti *et al.* state that the behavior of pregnant women for prenatal checks during the COVID-19 pandemic has changed.⁷ Pregnant women, healthcare workers, and facilities have implemented health protocols during the pandemic to prevent the transmission of COVID-19.⁷ The results of Abidah state that there is a significant relationship between the support of health workers and the regularity of prenatal care for pregnant women during the COVID-19 pandemic.⁸ Based on data from the Indonesian Obstetrics and Gynecology Association, there were 536 pregnant women exposed to COVID-19 between April 2020 and April 2021. 3% of them died. This data was collected before the spike in COVID-19 cases in Indonesia which occurred in the period June-July 2021 due to the Delta variant attack. During this period, many regions reported an increase in cases of maternal deaths due to COVID-19. One of them is what happened at the Dr. Soetomo Hospital, Surabaya, East Java, which recorded the deaths of 28 pregnant women due to exposure to COVID-19 between July and August 2021. Based on data collected by the COVID-19 handling task force of Probolinggo Regency, from January to August 2021 as many as 5,590 pregnant women have carried out rapid antigens. From the examination, it was found that 326 were positively exposed. According to the data available for the last three months, in June 2021 33 pregnant women tested positive for COVID-19, in July 2021, 205 pregnant women tested positive for COVID-19, and in August 2021 45 pregnant women were positive for COVID-19. In the last two months, namely July to August 2021, 20 pregnant women died due to COVID-19. Pregnant women are the most vulnerable and must take extra care of their health, especially in these conditions. The impact and risk of COVID-19 on pregnant and lactating women as well as on the fetus and baby are not yet known with certainty. There is no evidence that pregnant women are at higher risk, but due to changes in body shape and immune systems, pregnant women are very susceptible to some respiratory infections. One of the preventions for the spread of COVID-19 is to postpone seeing an obstetrician and gynecologist unless you experience an emergency such as severe vomiting, bleeding, contractions/abdominal pain, high blood pressure, rupture of membranes, headache, not feeling fetal movement, and seizures.⁵ Limiting meetings with pregnant patients is one effort that can be made without compromising the standard of ANC care. Based on research results by Hasugian *et al.*,⁹ anxiety about the transmission of COVID-19 in nurses during the implementation of ANC services during the pandemic had a significant effect on the transmission of the virus itself. So if the nurse during the implementation of ANC services experiences anxiety, the transmission of COVID-19 is 0.124 units.⁹ Ariyani *et al.* stated that 52.7% of respondents had high knowledge of services for pregnant women during the COVID-19 pandemic, and 98.2% of respondents played a good role in serving pregnant women during the COVID-19 pandemic.¹⁰ It is hoped that first-level health service agencies will complete APD needed in ANC services and reward midwives who provide ANC services.¹⁰ Rizki's research (2022) stated that the level of knowledge of pregnant women about health protocols during the

COVID-19 period was mostly in the good category, while the level of adherence to ANC visits by pregnant women during the COVID-19 period was in the non-adherent group. The results showed that there was a relationship between the level of knowledge about health protocols and adherence to ANC visits in pregnant women.¹¹

Materials and Methods

The purpose of this study was to analyze the effect of the COVID-19 pandemic on the quality of ANC services in Probolinggo Regency, where this research has been conducted. This research is an analytical research and its design is cross-sectional. The researcher agreed with the subject regarding the time and place to distribute the questionnaire. The independent variable of this research is the COVID-19 pandemic. The dependent variable of this study is the quality of ANC services. The population is all 326 pregnant women in the third trimester. Sampling uses simple random sampling. The sample is some pregnant women, as many as 179, in the third trimester. Data collection was carried out using a questionnaire to collect primary data. Bivariate analysis using chi-square. This research has gone through an ethical test with a Certificate number KEPK/005/STIKes-HPZH/V/2022.

Results

The majority of the respondents were not confirmed to have COVID-19, namely 170 respondents (95%). The Majority of the quality ANC services are 153 respondents (85%). Based on the bivariate analysis, it shows that of the 9 respondents who were confirmed to have COVID-19, 5 (56%) received quality ANC services, while of the 170 respondents who were not confirmed to have COVID-19, 148 (87%) received quality ANC services. The results of the statistical test obtained a value of $p = 0.09$ so that it can be interpreted that there is an influence during the COVID-19 pandemic on the quality of ANC services (Tables 1-3).

Table 1. Distribution of the 2019 coronavirus pandemic.

Variable	Frequency	%
Confirmed	9	5
Not confirmed	170	95
Total	179	100

Table 2. Distribution of antenatal care service quality.

Variable	Frequency	%
Quality	153	85
Not quality	26	15
Total	179	100

Table 3. Cross tabulation of the effect of the 2019 coronavirus pandemic period on antenatal care service quality.

Quality of service antenatal care

Variable	Quality		Not quality		Total	
	n	%	n	%	n	%
Confirmed	5	56	4	44	9	100
Not confirmed	148	87	22	13	170	100
Total	153	85	26	15	179	100
P=0.09						

Discussion

COVID-19 pandemic period

Most respondents (170, 95%) were not confirmed to have had COVID-19. In this COVID-19 pandemic situation, there are many restrictions on almost all routine services including maternal and neonatal health services. For example, pregnant women are reluctant to go to the puskesmas or other health service facilities for fear of being infected, there are recommendations for postponing pregnancy check-ups and classes for pregnant women, as well as the unpreparedness of services in terms of personnel and infrastructure including personal protective equipment.¹²

The policy on social restrictions implemented in Probolinggo Regency has greatly influenced the reduction of COVID-19 transmission, especially for pregnant women. Pregnant women are advised to postpone pregnancy check-ups and attend classes for pregnant women to avoid the risk of transmitting COVID-19. So that the incidence of pregnant women who are confirmed to be COVID-19 can be avoided.

According to the results of the research by Anung *et al.* that pregnant women have erratic physiological and psychological changes, so various ways are needed to meet the unique needs of pregnant women.¹³ Social distancing has a significant impact on vulnerable groups, for this reason, seriousness and cooperation from all lines are required.¹³

The results of Purnamayanti and Astiti show that most pregnant women have good knowledge, attitudes, and compliance regarding the use of masks during the COVID-19 pandemic.¹⁴ There is a relationship between attitudes and adherence to wearing masks for pregnant women during the COVID-19 period in Denpasar-Bali.¹⁴

The results of Wahidah *et al.* state that the government's role is to always remind and ask for community participation to achieve maximum government policy results, the need for the community's role in efforts to overcome the pandemic to carry out all existing policies so that synergy can break the chain of the spread of the COVID-19 virus and the chairperson RT/RW is also one way that can help the government in synergizing with the community.¹⁵

Quality of antenatal care service

The majority of the quality ANC services are 153 respondents (85%). The COVID-19 pandemic has caused many restrictions on almost all routine services, both in terms of access and quality, including restrictions on maternal and neonatal health services, causing a reduction in the frequency of antenatal care and postponement of classes for pregnant women.¹⁶

Several international organizations, such as the International Confederation of Midwives and the WHO, stressed the importance of providing pregnant women with high-quality and respectful care even during unexpected circumstances,^{17,18} according to a woman-centered care approach.¹⁹

The standard 10 T pregnancy check must be carried out on pregnant women under any conditions, including the COVID-19 pandemic. The standard 10 T pregnancy check is a service that must be obtained by pregnant women every time they carry out a pregnancy examination. The standard 10 T pregnancy check is carried out to reduce maternal and infant mortality. Most of the ANC services during the COVID-19 pandemic in Probolinggo Regency were of high quality because the health workers carried out services by implementing health protocols and using personal protective equipment according to standards.

Based on research results of Azizah,²⁰ 78.8% of pregnant women were satisfied with the midwife's role in ANC services dur-

ing the COVID-19 pandemic. Ardiani states that there is a relationship between midwifery knowledge and infrastructure and the quality of ANC during a pandemic COVID-19.²¹ There is no relationship between the midwife's education level, length of practice, and COVID-19 zone with the quality of antenatal care during the COVID-19 pandemic. The dominant factor most related to the quality of ANC services during the COVID-19 pandemic was infrastructure. Yani found that there was no relationship between the quality policy of antenatal care services and the level of satisfaction of pregnant women with antenatal care services during the COVID-19 pandemic.²² Pregnant women value the quality of ANC services during the COVID-19 pandemic.

The effect of the COVID-19 pandemic period on the quality of antenatal care services

The results of the statistical test obtained $P=0.09$; so it can be interpreted that there is an influence of the COVID-19 pandemic on the quality of ANC services.

WHO states that it is necessary to carry out pregnancy tests according to the standard, namely 10 T in health facilities. This is done to determine the health condition of pregnant women and fetuses. Pregnant women who do not get quality antenatal care services will have an impact on health risks, such as miscarriage, psychological disorders, anemia, preeclampsia, eclampsia, premature babies, babies born with low weight, and death. So, pregnant women must get antenatal care services in accordance with the WHO standards. However, during the COVID-19 pandemic, when the health care system is disrupted and community social activities are limited, it will have an impact on antenatal care services. These disorders are at risk of poor quality of antenatal care by pregnant women.²³

Fear of COVID-19 infection was also found to be significantly associated with an 87% reduction in full ANC service utilization. Consistent with this, in Bnei Brak, a city in Israel, one of the significant issues faced in maternal care was fear. Many women were anxious about contracting the coronavirus and feared going to prenatal checks, with some pregnant women staying away from the services altogether. This might be due to low awareness creation from the responsible body, and the preventive principles of COVID-19 might not be practiced properly. Fear of physical proximity may also limit or alter care provision. In addition, the fear of spreading the disease may lead health workers to deny mothers the service. Pregnant women have been reported to have experienced increased anxiety as a result of COVID-19.^{24,25}

International literature shows that the quality of maternal and newborn care provided has been greatly affected by the COVID-19 pandemic.²⁶ For example, studies reported a reduction of in-person visits, fewer antenatal appointments or emergency care admissions for pregnant women, and an over-medicalization of perinatal care (*e.g.* cesarean, induction of labor).²⁷⁻²⁹ Additionally, as the involvement of a woman's partner and family was reduced due to restrictions put in place by maternity services, issues related to scarce social support have been documented among women.³⁰⁻³²

According to the results of the analysis, there is an influence of the COVID-19 pandemic on the quality of ANC services. This is based on the results of research that pregnant women who are confirmed to have COVID-19 do not receive antenatal care services according to the 10 T standard.

The results of Yu *et al.* suggest that antenatal care is very important because it can detect early symptoms of COVID-19.³³ Screening at the entrance before being allowed to enter the health service. Then, ANC service procedures are carried out with reference to 10 T, after further examination and no symptoms that refer to the danger of pregnancy, pregnant women are given directions

for self-quarantine at home after visiting a health service that is considered at risk. Abdollahpour and Khadivzadeh found that, in Shanghai (China), second-trimester pregnant women are more willing to reduce the frequency of ANC compared to other trimesters.³⁴ The first and the third trimesters are the beginning and end of pregnancy which really need attention and if ANC services are replaced with a virtual consultation, pregnant women feel dissatisfied. Ranganathan *et al.* state that 15% of pregnant women have confirmed to have had COVID-19, but only 2% show symptoms.³⁵ Pregnant women with COVID-19 who are confirmed positive, still get ANC service in the isolation room and in quarantine for recovery.

Conclusions

According to the research results on the effect of the COVID-19 pandemic on the quality of ANC services, it can be concluded as follows: the majority of the respondents (170, 95%) have not been confirmed positive for COVID-19. 153 respondents (85%) received quality ANC services. There is an influence of the COVID-19 pandemic on the quality of ANC services.

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