



An Overview of COVID-19 Case in the Delivery Room of Primary Health in South Jakarta 2021

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Abstract

Since March 2020, Indonesia has become one of the countries affected by the COVID-19 pandemic with a fairly high number of cases. However, the data regarding COVID-19 in pregnant women is still limited. Primary health, as the public health center providing services for pregnant and delivering women, are at the forefront in screening and planning for a safe delivery process in mothers infected with COVID-19. This study aimed to describe an overview of COVID-19 cases detected in the delivery room of the primary health of South Jakarta region and the outcomes, including referral to the hospital, delivery in the health care, self-isolation, or death. This cross-sectional study used secondary data from the medical records of pregnant women confirmed with COVID-19 by the

polymerase chain reaction (PCR) or rapid test diagnosis (RDT) testing in the delivery room of primary health in all of the South Jakarta region. The analyzed characteristics include maternal age, gestational age, gravida, symptoms, and outcome (including referral to a hospital, delivery in the health enter, self-isolation, or death). The data were presented in numbers and percentages. Results: The total of pregnant women confirmed with COVID-19 in the delivery rooms of the primary health in the South Jakarta region was 620 cases. Most subjects were in the third trimester, with 417 asymptomatic cases and 203 symptomatic cases. The outcomes included a referral to a hospital (76.9%), delivery in health center (14.7%), and self-isolation (4.4%). A total of 3.9% of pregnant women refused to be referred and one (0.2%) death occurred before the patient could be referred. Conclusion: COVID-19 cases in pregnant women in the delivery room of the primary health were mostly asymptomatic and were detected in the third trimester. Although most subjects were referred, there were cases of subjects with COVID-19 who delivered at the primary health. This phenomenon warrants a regulation or guideline of a delivery process in patients with COVID-19 that can be handled in the primary health or those requiring a referral. The primary health that handle the delivery process of patients with COVID-19 should prepare the standardized facilities and infrastructures to prevent COVID-19 transmission in the delivery room. Considering the death cases of mothers with COVID-19 in the delivery room of the primary health, a quick and appropriate referral mechanism to the hospital is necessary for pregnant women with COVID-19.

Keywords: COVID-19, pregnant women, delivery room, primary health.

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Introduction

Since first reported in Wuhan, China, COVID-19 infection has spread to nearly every country, leading to the WHO declaring the infection as a global pandemic. Indonesia is one of the countries affected by the pandemic with a rapid transmission and many death caused by COVID-19. Therefore, in March 2020, the government declared COVID-19 as national disaster (Ariawan et al., 2021). This infectious disease, which is caused by SARS-CoV-2, can be transmitted directly via droplets and direct contact with people infected with COVID-19 or indirectly via contaminated items and airborne (Burhan et al., 2022; Lotfi et al., 2020). In the last two years, many studies have been conducted regarding the impact of COVID-19 on the general population. However, information regarding COVID-19 infection in pregnant women is still limited (Schwartz & Graham, 2020). According to multiple previous studies, the clinical manifestations of COVID-19 infection in pregnant women quite vary, from asymptomatic, mild non-specific symptoms, to impending respiratory failure caused by the immunosuppressive condition and physiological changes during pregnancy (Boelig et al., 2020; Breslin et al., 2020; Chen et al., 2020; Joyce et al., 2018; Kementerian Kesehatan RI, 2020). Breslin N et al. (2020) suggested, that as in the general adult population, most COVID-19 infections in pregnant women are mild (86%). However, severe (9.3%) to critical-life-threatening (4.7%) diseases may also occur. Nonetheless, studies conducted during the pandemic showed a tendency of increased morbidity in pregnant women with COVID-19. Therefore, pregnancy is one of the conditions associated with severe COVID-19 (CDC, 2022; Larki et al., 2020). Mild symptoms of COVID-19 include fever, cough, sore throat, pain and malaise; severe COVID-19 include pneumonia, acute respiratory distress syndrome (ARDS), renal failure and multiorgan dysfunction (Ashokka et al., 2020).

COVID-19 pandemic in Indonesia has entered the second year with a fluctuation rise of cases since 2020, in which the first wave peak occurred in January 2021 and the second in July 2021. In February 2022, the number of COVID-19 infections rose again and reached the peak of the third wave due to the Omicron variant (Covid19, 2022). Nationally confirmed COVID-19 cases as of June 3rd 2022 were 6,056,017 cases with a death toll of 156,604 (Covid19, 2022). As a province with the highest transmission rate of COVID-19 in Indonesia, the amount of confirmed COVID-19 cases in DKI Jakarta as of June 3rd, 2022 was 1,251,211 with a death toll of 1.2% (Bappenas, 2021; Pemerintah Provinsi DKI Jakarta, 2022). The observation of the total COVID-19 cases from an official site above is the overall data. However, there is no data regarding the total of COVID-19 infections in pregnant women nationally or in the DKI Jakarta region.

The impact of policy and pandemic control on the health infrastructures can affect maternal health since a properly managed delivery service system allows delivering mothers to access health services with minimum risk of exposure during the pandemic (Kotlar et al., 2021; Qi et al., 2020). The management includes screening, testing, and proper planning for pregnant women with COVID-19, screening for patients who come to the delivery room, changes in the delivery service pathway, and providing an isolation room for patients with COVID-19 (Boelig et al., 2020). As the first line of health care facility that provides pregnant and delivery services, the primary health



is mandated to conduct a COVID-19 screening in pregnant women with a gestational age of 37 weeks to determine the proper delivery management according to the Government guidelines. Therefore, the primary health is one of the health facilities with the main role in providing services for pregnant and delivering women with confirmed COVID-19 (Gugus Tugas Percepatan Penanganan COVID-19, 2020). Based on the background stated above, this study was conducted to describe the overview of COVID-19 cases in pregnant women and the outcome in the delivery room of the primary health in the South Jakarta region in 2021.

Methods

This cross-sectional study used secondary data from the monthly report of the primary health and reports of pregnant women with COVID-19 in 11 delivery rooms of the primary health, distributed in 10 districts of the South Jakarta region. The reports were submitted to the South Jakarta Department of Health from January to December 2021. Data obtained from the monthly report include the total number of pregnant women with routine PCR tests in women with a gestational age of 37 weeks or more or the evaluation of RDT testing results. We also collected the number of pregnant women who had the RDT testing. We then looked at the reports of pregnant women with COVID-19 in the delivery room of the primary health. Complete data based on the studied characteristics were then analyzed. The characteristics included maternal age, gestational age, gravida, symptoms, and maternal outcomes; the data were presented in numbers and percentages. Symptomatic pregnant women were identified and grouped based on the complaints, including fever, cough, runny nose, dyspnea, sore throat, anosmia, nausea, malaise, headache, and muscle ache. The outcome was grouped based on service and maternal condition, including referral to a hospital, delivery in the health center, self-isolation, or death. The analysis unit in this study was pregnant women with COVID-19 in the primary health of South Jakarta. Analysis was conducted to study the characteristics of pregnant women with COVID-19, including maternal age, gestational age, gravida, symptoms, and maternal outcomes, including referral to a hospital, delivery in the health center, self-isolation, or death. The data were presented in numbers and percentages. The collected information was compared with guidelines and previous studies regarding COVID-19 in pregnancy.

Results

2,911 pregnant women in 2021 weretested with RDT, with a total reactive result of 390; and 4,427 pregnant women who were tested with PCR, with a total positive result of 570. Based on these results, 620 data of pregnant women with confirmed COVID-19 with complete medical records data for further analysis were included. The total of pregnant women with COVID-19 in the Health Center of the South Jakarta region from January to December 2021 is shown in the diagram below.

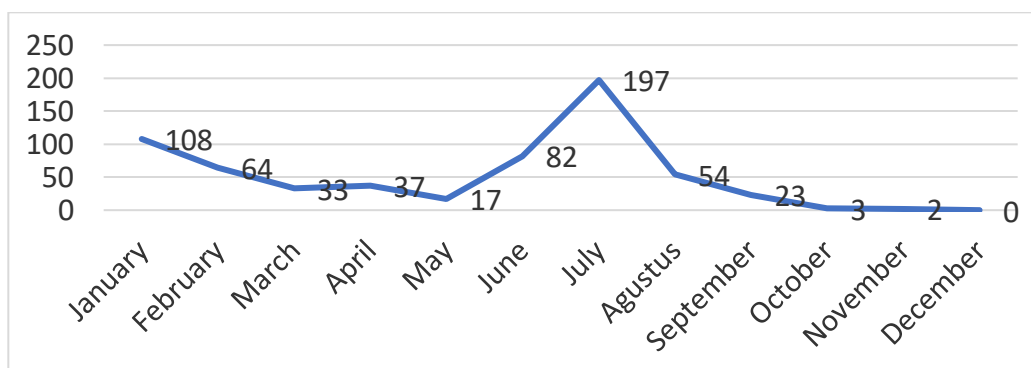


Figure 1. The total of pregnant women with confirmed COVID-19 in the primary health of South Jakarta 2021.

The number of pregnant women with confirmed COVID-19 in the primary health on January was 108, and the number decreased until May. The number increased again on June, with a peak on July with 197 subjects. This number was the highest rate of pregnant women with COVID-19 in the primary health of South Jakarta in 2021. On August, the number continued to decrease until December 2021, in which there was no case of pregnant women with COVID-19 in the primary health.

Based on this data, the age of pregnant women with COVID-19 who received services was in the range of 16 and 46 years old; 18 (2.9%) subjects were under 20 years old, 498 (79.8%) were within 20-35, and 107 (17.3%) were over 35 years old. The gestational age was grouped into trimester 1, trimester 2, and trimester 3 based on the gestational age when the mother was confirmed with COVID-19 according to a PCR or RDT test. Most subjects were in trimester 3, namely 559 (90.2%) subjects, and the least subjects were in trimester 1, namely 23 (3.7%) subjects. Gravida was grouped into five groups based on the number of pregnancies when the patient was confirmed with COVID-19. Gravida status varied with the most in primigravida (32.6%) and second pregnancy (32.4%). However, 5.1% of subjects had a fifth or more pregnancy.

Table 1. Characteristics of the pregnant women with confirmed COVID-19 in the primary health of South Jakarta 2021

Characteristics of the subject	Absolute Total	Percentage
Maternal age:		
< 20 years	18	2.9%
20 – 35 years	495	79.8%
> 35 years	107	17.3%
Pregnancy Trimester:		
Trimester 1	23	3.7%



Trimester 2	38	6.1%
Trimester 3	559	90.2%
Gravida:		
1	202	32.6%
2	201	32.4%
3	128	20.6%
4	57	9.2%
≥5	32	5.1%

There were 417 (67.3%) subjects with asymptomatic COVID-19 and 203 (32.7%) with respiratory tract symptoms or other symptoms. Respiratory tract symptoms were the most reported symptoms, which included cough (14 subjects) and runny nose (94 subjects). Twenty-seven symptomatic subjects experienced dyspnea. Other symptoms included fever, sore throat, anosmia, nausea, malaise, headache, and muscle ache.

Table 2. Symptoms of the pregnant women with confirmed COVID-19 in the primary health of South Jakarta 2021

Symptoms	Absolute Total	Percentage
Asymptomatic	417	67.3%
Symptomatic	203	32.7%
- Fever	51	25.1%
- Cough	149	73.4%
- Runny nose	94	46.3%
- Dyspnea	27	13.3%
- Sore throat	9	4.4%
- Anosmia	31	15.3%
- Nausea	4	2%
- Malaise	4	2%
- Headache	5	2.5%
- Muscle ache	2	1%

The services provided by the primary health were in accordance with the patient's condition. Patients who were in labor and could not be referred received a delivery assistance in emergency delivery room in the primary health for COVID-19. The number of pregnant women who delivered at the health care was 91 (14.7%) subjects. Patients who were able to be referred were referred to a COVID-19 referral hospital that could manage a delivery. A total of 501 subjects were supposed to be referred to a hospital; however, 24 subjects refused to be referred. Therefore, 477 (76.9%) pregnant women were referred to the hospital. One (0.2%) subject passed away in the primary health before being referred to the hospital. The remaining 27 subjects were asked to self-isolate due to preterm pregnancy, asymptomatic, and no signs of an obstetrical emergency.

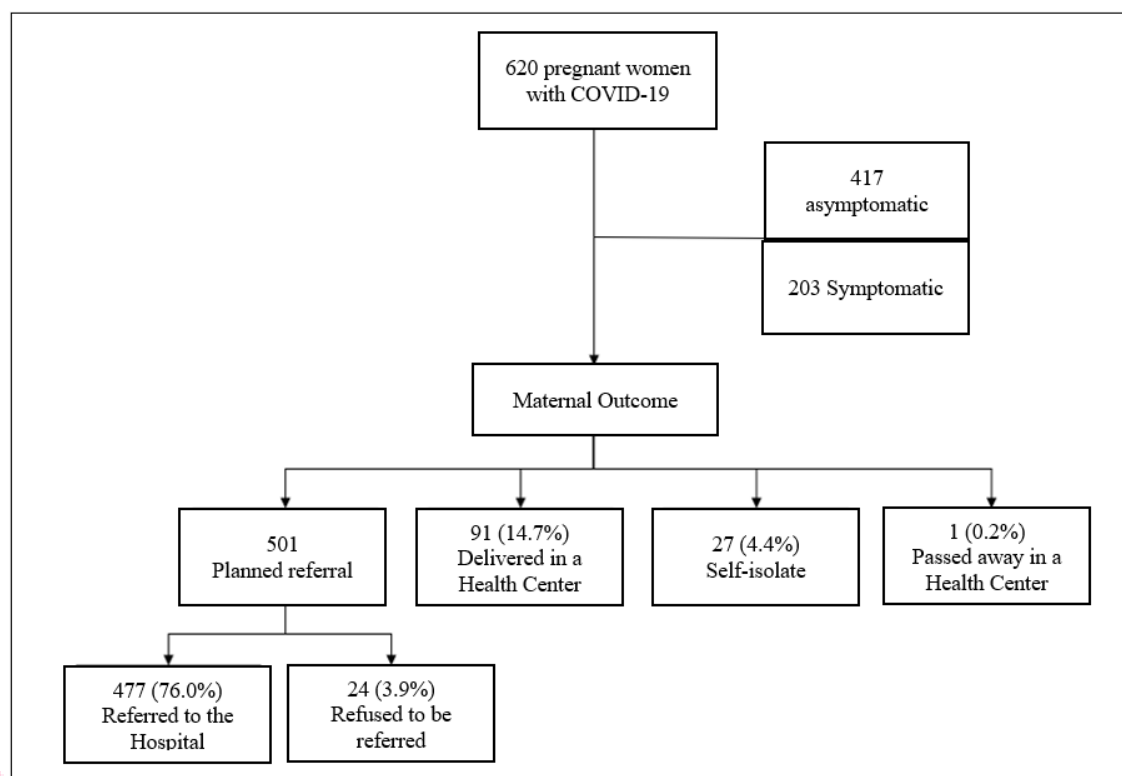


Figure 2. The outcome of the pregnant women with confirmed COVID-19 in the primary health of South Jakarta in 2021.

Discussion

As the first line of health care facility, the primary health of South Jakarta provides routine pregnancy care or antenatal care (ANC) and has delivery rooms for normal delivery in pregnant women without any complications. During the COVID-19 pandemic, the primary health routinely conducted PCR testing for pregnant women with a gestational age of 37 weeks or over who presented for an ANC visit to determine the maternal COVID-19 status and conducted referral planning for pregnant women with confirmed COVID-19. PCR testing was also conducted in pregnant women with a reactive RDT result (Gugus Tugas Percepatan Penanganan COVID-19, 2020; Kementerian Kesehatan RI, 2020). Based on the obtained data, the total number of pregnant women with COVID-19 in the primary health decreased from January 2021, in line with the national COVID-19 decreased rate. The number increased again significantly in June and July 2021, which was in line with the national increased rate during the second wave of COVID-19 in Indonesia, followed by a subsequent decrease with a total number of 620 cases. The increased and



decreased rate of COVID-19 in pregnant women was directly proportionate to the national COVID-19 situation.

Although pregnant women with COVID-19 in the primary health in 2021 were mostly 20-35 years old (79.8%), if viewed from the age variable, there were 20.2% (2.9% and 17.3%) of mothers with high-risk deliveries due to young age (<20 years) or over 35 years old. Most subjects were primigravida (32.6%); however, there were still mothers with a grand multigravida status (5.1%). Pregnant women with COVID-19 who received services at the primary health were mostly in the 3rd trimester (trimester 3). This is due to a government policy in which the primary health should perform screening for COVID-19 status in pregnant women with a gestational age of over 37 weeks (Gugus Tugas Percepatan Penanganan COVID-19, 2020).

In this study, most pregnant women with COVID-19 in the primary health were asymptomatic (67.3%), in line with studies' results showing a fairly high rate of asymptomatic COVID-19 infection in pregnant women (88%). Therefore, COVID-19 screening in the primary health should be conducted to determine a safe delivery plan for the mother and healthcare personnel (Res et al., 2020). Most subjects complained of cough (73.4%), runny nose (46.3%), and fever (25.1%). These symptoms distributions were in line with a study in New York, in which most pregnant women with COVID-19 also complained of cough (65.6%) and fever (48.3%) (Breslin et al., 2020).

PCR testing routinely performed in pregnant women with a gestational age of 37 weeks or over was very helpful in the referral planning, as seen from the high rate of COVID-19 referrals in 2021 (76.9%). This is in line with a guideline from the task force of COVID-19, in which the first-line health care facilities should refer pregnant women with obstetrical emergencies or confirmed COVID-19 to the nearest referral hospital for COVID-19 or a hospital with comprehensive obstetrics and neonatal emergency services (Gugus Tugas Percepatan Penanganan COVID-19, 2020). However, we found that there were pregnant women who refused to be referred to the hospital. This situation might lead to increased risk for the mother and the fetus. There was one (0.2%) maternal death in the primary health before the patient was able to be referred to a hospital, which showed a death potential for pregnant women with COVID-19, although in a very small number (Schwartz & Graham, 2020). Another phenomenon is that there were still 14.7% of pregnant women with COVID-19 who delivered at the primary health. This might occur because the maternal condition was not feasible to be referred to. Therefore, the primary health should provide a separated, isolated delivery room with standardized personal protective equipment (PPE) for the personnel to prevent COVID-19 transmission in the delivery room (Kementerian Kesehatan RI, 2020). According to the recommendation by the CDC, PPE for healthcare personnel with COVID-19 should include N-95 masks, goggles, gowns, and gloves (Boelig et al., 2020).

Conclusion and Recommendation

Based on the results of the study throughout 2021, there was a total of 620 pregnant women with COVID-19 in the primary health of South Jakarta, with a directly proportionate fluctuation



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with the national COVID-19 condition. Most pregnant women with COVID-19 were asymptomatic. The government regulation expects that pregnant women with COVID-19 should deliver to a hospital. Most pregnant women with COVID-19 were referred to a hospital; however, some subjects still refused to be referred and delivered at the primary health. This phenomenon warrants a regulation or guideline of the delivery process in patients with COVID-19 that can be handled in the primary health or those requiring a referral. The primary health which handle the delivery process of patients with COVID-19 should also prepare the standardized facilities and infrastructures to prevent COVID-19 transmission in the delivery room. There was one case of a pregnant woman with COVID-19 who passed away in the delivery room of the primary health. Therefore, a quick and appropriate referral mechanism from the health center to the hospital is necessary for pregnant women with emergency cases and COVID-19.



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