



## Lessons Learned on The Success of Accessing Antenatal Care During The COVID-19 Pandemic: A Qualitative Study from Patients' Perspectives

Arsyadila Nur Sabila<sup>1</sup>; Merita Arini<sup>2,3\*</sup>

<sup>1</sup> Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta

<sup>2</sup>) Department of Family Medicine and Community Medicine, School of Medicine, Faculty of Medicine and Health Sciences, Universitas Muhammadiyah Yogyakarta

<sup>3</sup> Center of Sustainable Development Goals, Universitas Muhammadiyah Yogyakarta

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### ABSTRACT

Coronavirus disease (COVID-19) impacted the disruption of overall health care services globally. In the early stage of the pandemic, the Indonesian government also recommended that pregnant women postpone their healthcare visits if they did not need a specific examination and/or emergency care. High-quality antenatal care (ANC) is critical for the mother's health and the fetus's welfare. This study aimed to explore pregnant women's experiences and perspectives during ANC visits during the COVID-19 pandemic. This study was qualitative descriptive research. The informants were five pregnant women after February 2020 and had at least one ANC at Kasihan I and II community health centers (CHC), Bantul, Province of Special Region of Yogyakarta. In-depth interviews were stopped when data saturation was reached. Despite several challenges and barriers, pregnant women still have received ANC following government guidelines during the pandemic with several adjustments. In-depth interviews revealed three major themes: (1) ANC examinations experiences; (2) joys and sorrows dealing with health service constraints; (3) factors influencing ANC visits. Albeit the existing obstacles, healthcare recipients can still manage to access the ANC. Innovation in healthcare services management and cross-sectoral collaboration is required to increase the quality and safety of ANC of CHC.

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### Kata kunci:

ibu hamil  
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#### \*) corresponding author

Merita Arini

Department of Family Medicine and  
Community Medicine, School of Medicine,  
Faculty of Medicine and Health Sciences,  
Universitas Muhammadiyah Yogyakarta

Center of Sustainable Development Goals,  
Universitas Muhammadiyah Yogyakarta.

Kampus Terpadu UMY, Jl. Brawijaya,  
Kasihan, Bantul, Yogyakarta, Indonesia  
55183

Email: merita.arini@umy.ac.id

### ABSTRAK

Penyakit virus corona (COVID-19) berdampak pada terganggunya keseluruhan layanan perawatan kesehatan secara global. Pada tahap awal pandemi, pemerintah Indonesia juga merekomendasikan ibu hamil untuk menunda kunjungan kesehatan jika tidak memerlukan pemeriksaan khusus dan/atau perawatan darurat. Perawatan antenatal (ANC) berkualitas tinggi sangat penting untuk kesehatan ibu dan kesejahteraan janin. Penelitian ini bertujuan untuk mengeksplorasi pengalaman dan perspektif ibu hamil terhadap kunjungan ANC selama pandemi COVID-19. Jenis penelitian ini merupakan penelitian deskriptif kualitatif. Informan adalah lima ibu hamil setelah Februari 2020 dan memiliki setidaknya satu kali kunjungan ANC di wilayah kerja Puskesmas Kasihan I dan II, Bantul, Provinsi Daerah Istimewa Yogyakarta. Wawancara mendalam dihentikan ketika dicapai saturasi data. Hasil penelitian ini menunjukkan bahwa meskipun menghadapi berbagai tantangan dan hambatan selama pandemi, wanita hamil masih mendapatkan ANC sesuai pedoman pemerintah dengan beberapa penyesuaian. Wawancara mendalam mengungkapkan tiga tema utama: (1)

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pengalaman pemeriksaan yang didapatkan; (2) suka duka selama pembatasan pelayanan kesehatan; (3) faktor-faktor yang mempengaruhi kunjungan ANC. Kesimpulan dalam penelitian ini, meskipun ada hambatan, penerima layanan kesehatan masih dapat mengelolanya untuk mengakses ANC. Inovasi manajemen pelayanan kesehatan dan kerjasama lintas sektor diperlukan untuk meningkatkan kualitas dan keamanan ANC Puskesmas.

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## INTRODUCTION

On March 11, 2020, the World Health Organization (WHO) proclaimed coronavirus illness (COVID-19), caused by the new coronavirus SARS-CoV-2, a pandemic (Cucinotta & Vanelli, 2020). Globally, 650,000 new cases were added every seven days until the end of August 2021, with a fatality rate of 9,000 cases. According to WHO data, on August 16, 2021, there were 3,989,060 positive SARS-CoV-2 cases in Indonesia, with 127,214 deaths.

The escalation of the COVID-19 caseload has decreased health program coverage in numerous countries (Dunning & Elstrand, 2020); (Rocca-Ihenacho & Alonso, 2020). Maternal health programs were also disrupted. At the beginning of the pandemic, pregnant women were recommended to postpone their health care visit if they did not require a specific examination such as ultrasonography (USG) or emergency care (Rocca-Ihenacho & Alonso, 2020). Pregnant women who suspected or confirmed COVID-19 must delay antenatal care (ANC) visits during their self-isolation. On the other hand, those who experience the emergence of COVID-19 symptoms are expected to go to a referral hospital for further treatment (Kemenkes RI, 2020).

Quality and safe pregnancy services are critical for the mother's health and the fetus development and well-being. Pregnant women are particularly vulnerable (Rocca-Ihenacho & Alonso, 2020) and at-risk (Bundarini & Fitriahadi, 2019) necessitating close monitoring of their health. As a result, preventing health problems and complications in mother and baby is dependent on accessible and high quality of regular health care services before and during pregnancy, childbirth, and the postnatal period (Downe *et al.*, 2019; Clavagnier, 2012). ANC is expected to be accepted by all pregnant women and provided by health workers in an integrated care. Standard of ANC visits are performed at least four times during a healthy woman's pregnancy, with the first trimester (less than 14 weeks) requiring one visit as soon as possible (Clavagnier, 2012), the second trimester (14-28 weeks) requiring one visit, and the third trimester (28-36 weeks and after 36 weeks) requiring two visits (Aisyah *et al.*, 2015).

Several studies reported barriers that inhibit pregnant women from visiting health care facilities regularly during their pregnancy. The common reason is the belief that regular ANC visits are unnecessary if there are no health complaints (Downe *et al.*, 2019). On the other hand, during a pandemic where COVID-19 threatens healthcare services, most patients prefer to delay their healthcare visits. As a result, there is an increase in mortality from diseases that could previously have been prevented and controlled (Dunning & Elstrand, 2020).

Antenatal care is essential to reducing maternal and perinatal morbidity and mortality (POGI, 2020). In general, there was a decrease in maternal mortality ratio (MMR) and infant mortality rate (IMR) from more than 270 to 177 per 100,000 live births from 2000 to 2017 and more than 40 to

19.5 per 1,000 live births from 2000 to 2020 in Indonesia (The World Bank, 2020b; The World Bank, 2020a). Although there is a tendency to decrease maternal and infant mortality, our MMR and IMR are still higher than the SDGs (Sustainable Development Goals) target in 2030 (BAPPENAS and UNICEF, 2019; Pusat Kajian Anggaran, 2021). Efforts to expand the availability of high-quality care to more pregnant women before, during, and after childbirth must also be undertaken due to their health complications (WHO, 2019). Hence, this study aimed to investigate the barriers, expectations, and potential factors for increasing ANC visits during pandemic situations as a lesson learned. Given the importance of ANC for pregnant women, it is critical to investigate how the pandemic affects ANC and how pregnant women cope with these conditions.

## METHOD

### *Participant characteristics and research design*

This study employs a descriptive qualitative design to investigate pregnant women's experiences and perceptions about ANC visits during the COVID-19 Pandemic in Kasihan District, Bantul Regency, Yogyakarta Special Region (DIY). The distance between the District Capital and the Bantul Regency's Central Government (Capital) is 9 kilometers. Kasihan District, which covers an area of 3,437,957 ha and is divided into four villages, is located north of Bantul Regency's capital city. The Kasihan District area's first-level health facilities include the Kasihan I Community Health Center (CHC) and the Kasihan II (Kapanewon Kasihan, 2022). This area is considered as semi-urban area due to the location and culture.

The research employed in-depth interviews to gain insight from the informants. The interviews used an interview guide, which included questions about the informant's identities, thoughts, experiences, concerns, challenges, strategies, and hope for the healthcare they received during prenatal visits during the COVID-19 pandemic. The principal investigator (PI) performed the interviews. PI (ANS) was a female with a medical doctor background and formal training in qualitative research. The second researcher is a woman, a medical doctor, and a qualitative researcher who has experience conducting research and writing on health care management.

This research includes pregnant women from CHC of Kasihan I and Kasihan II. As inclusion criteria, those who have had at least one ANC visit to a health service facility in the Kasihan Sub-District and were still pregnant as of February 2020 were included. Interviews were conducted with informants at various phases of their pregnancies (Table 1). ANS performed two interviews with each informant between May and July 2021, based on the informants' consent. Each interview took approximately 30-60 minutes;

the first was to address interview guide questions, while the second was to elicit further information about the research findings and conduct member-checking. During the

interviews, no other person accompanied or aided the informants in answering questions.

**Table 1. Demographics Data of Informants**

CODE	AGE	GESTATIONAL AGE (GA) / LAST CHILD'S AGE (CA)	OCCUPATION	LAST EDUCATION	HISTORY OF PREGNANCY
01	27 years old	GA 33 week	Employee	Bachelor	G1POA0
02	26 years old	GA 16 week	Entrepreneur	Bachelor	G1POA0
03	42 years old	CA 12 month	-	Bachelor	P4A0
04	33 years old	CA 1 month	-	Bachelor	P3A0
05	30 years old	CA 3 month	Teacher	Bachelor	P2A0

Trustworthiness was established through three ways: credibility; transferability; and confirmability. Data credibility was ensured by member-checking and frequent debriefing sessions (FDS) with the second author. The FDS was held to discuss the study's findings, including the coding, categories, and themes discovered in the transcripts. Transferability was performed by writing the research process and results in detailed descriptions so that other researchers can determine whether the findings of this study can be applied in other contexts. This research confirmability was performed using audit trail components: the ethical approval; research registration documents; informed consent forms; study setting description; interviews recording; transcript; documentation of data reduction process including coding and member checking; and the researcher's diary.

*Sampling procedures*

Researchers used purposive sampling to select research subjects. Criterion sampling was used to select informants based on the inclusion criteria mentioned above to obtain relevant and information-rich answers. Researchers obtained written consent from eight prospective informants who agreed to be interviewed. Despite having stated their willingness to participate in the research in advance, three informants chose not to continue the in-depth interviews processes. Five informants were successfully interviewed and compensated for their time following their prior informed consent. Data collection was stopped when data saturation was reached, which was indicated by the absence of new categories.

*Data analysis*

Content analysis was used to elucidate study findings by identifying critical data patterns. The principal investigator (PI) conducted verbatim transcribed the informants' responses immediately following the interview. The researcher was acquainted with the data through reading and re-reading it. PI manually coded and categorized it to determine the themes. The second author reviews the coding, categories, and themes formulation. Any differences between the two authors were then discussed and agreed upon.

**RESULTS AND DISCUSSION**

Three themes emerged from the findings of researcher-conducted interviews (Figure 1): (1) ANC examinations

experiences (2) joy and sorrows dealing with restrictions on health services; (3) factors influencing ANC visits. Several categories were derived from these themes.

**Theme 1: ANC examinations experiences**

The informants described their experiences with several healthcare services obtained during pregnancy checks or ANC visits. Generally, pregnant women get examinations that follow ANC standards, similar to before the pandemic. They also got ANC for multidisciplinary teams as integrated care. The ANC included history taking/ anamnesis, physical, laboratory, and case management.

a. Category 1: History taking

The informant stated that the health workers took their medical history, including a history of the past pregnancies, disease, and the complaints felt before and during pregnancy. It can be seen in the following quote.

*"I checked my second pregnant more frequently in the third trimester, because her weight increased more than my first child. Then in the second, I had complaints of low blood pressure and low hemoglobin. Finally, before delivery, the amniotic fluid was leaking, so I more frequently went back and forth to the health facility in the third trimester."* (Informant #05)

b. Category 2: Physical Examination

Healthcare professionals performed physical examinations on informants, including measuring vital signs, dental examination, anthropometric and nutritional status assessment, psychological examination, , and fetal examination. According to the examination, one of the five informants diagnosed hypertension, and one had hypotension. The informant received fetal examinations, including Leopold, fetal heart rate, and uterine fundal height.

*"If the ANC was at the CHC, it was comprehensive. Yes, there was a lab check and a dental checkup and a psychologist and nutritionist."* (Informant #01)

*"Yes, when I found out about this, the position of the fetus was checked at the health center, and then the fetal pulse was also checked."*(Informant #05)

c. Category 3: Supporting Examination

Informants advised taking ancillary tests such as electrocardiograph, blood and urine tests, and prenatal ultrasound.

*"It is the same time I have checking Hb and urine, heart record, but an ultrasound was also performed once."* (Informant #02)

d. Category 4: Case management

After completing the examinations, the informants received vaccination of tetanus toxoid (TT), counseling, nutritional treatment, and others healthcare procedures according to their needs. No informants need advanced

management due to their health problems that must be referred to the hospital.

*"We get vitamins, calcium, and what else can you get folic acid."* (Informant #03)

*"If we were examined, we could consult with those who knew more."* (Informant #04)

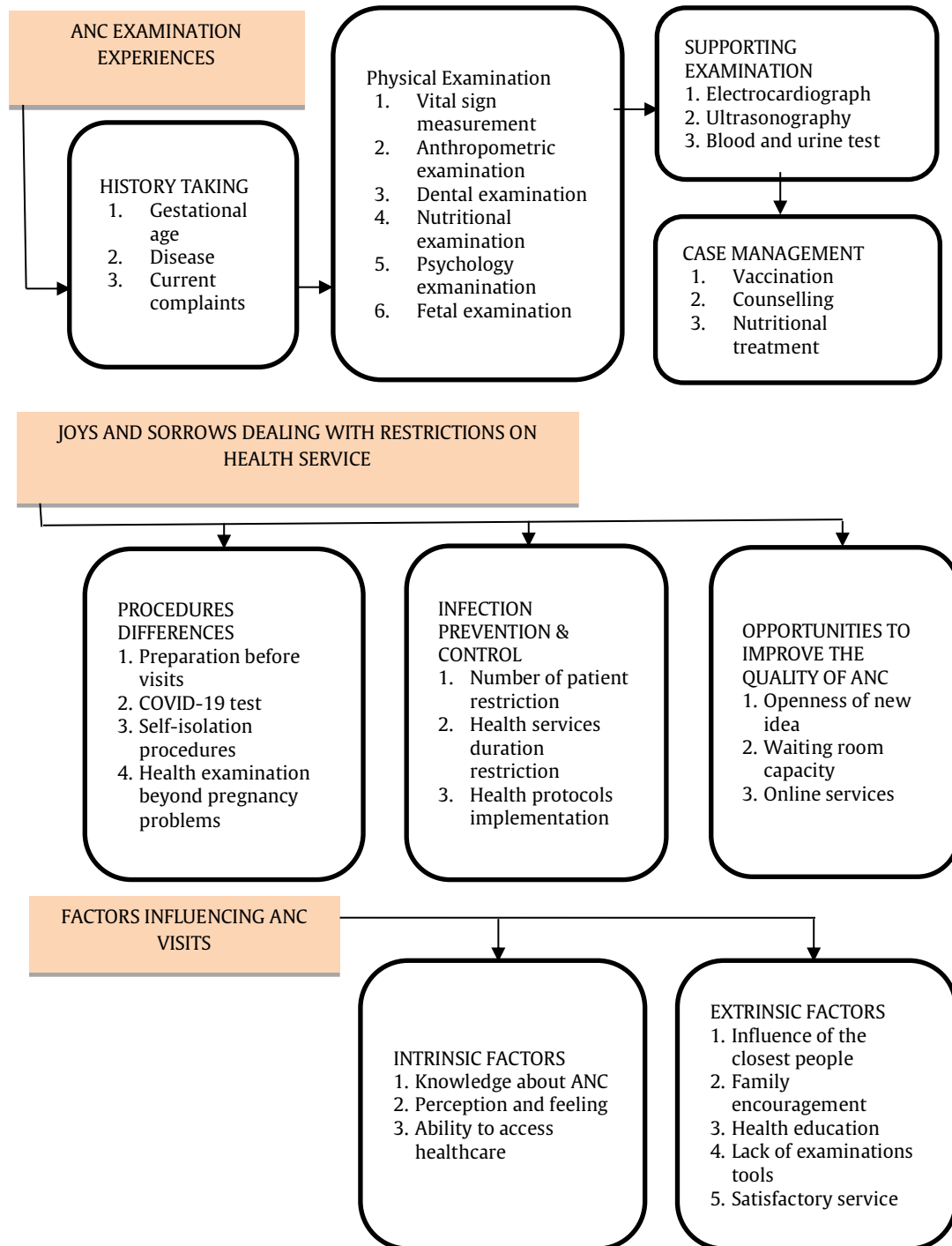


Figure 1. Themes- Categories-Coding of Data

## Theme 2: joys and sorrows dealing with restrictions on health service

This theme is divided into three categories: procedures differences, infection prevention & control, and opportunities to improve ANC quality from informants' perspectives.

### a. Category 1: procedures differences

The informants acknowledged that they required additional preparation prior to the ANC visits. They also obliged the COVID-19 test, self-isolation if COVID-19 was diagnosed, and conducted examinations other than pregnancy tests. Two pregnant women had to stay at home for a week because their COVID-19 test was reactive, preventing them from continuing the pregnancy check-up procedure to the following phase. Three birthing women admitted to including a COVID-19 swab test result before delivery.

*"We should prepare mask, bring a hand sanitizer. When you were finished checked, wash your hands immediately until you get home, change your clothes, and sometimes, when it is late, take another shower."* (Informant #03)

*"If yesterday's ANC was in the lab, I came to KIA (maternal and child unit) first, and then I was ordered to go to the blood test. However, my antibody results were reactive, so I went home and was isolated, and the ANC was blocked until I waited almost six days. Then I went back to the CHC."* (Informant #02)

### b. Category 2: infection and prevention control

The informants experienced complexity in applying health protocols for the prevention and control of COVID-19, such as the number of patients and visitors restriction, health service duration limitation, and health protocols implementation by health workers on duty. It is evident from the informants' statements, which are as follows.

*"Due to the COVID-19 restriction yesterday, when I arrived, the quota had run out. As a result, I had to return home and register for a different day. The hospital's quota for each check-up is also limited, but I do not think it matter because it is all for social distancing, so what can you do?"* (Informant #04)

*"Before the pandemic, when you check-in at the hospital, you can talk to the doctor for a long time, but now it is just asking if there are any complaints, and if there are not, that is fine."* (Informant #05)

### c. Category 3: Opportunities to improve the quality of ANC

According to the informants' experiences, safe distance procedures are not applicable due to improper waiting room capacity. On the other hand, online services such as e-registration for reducing queues are not yet implemented. In addition to registration, the informants obtained teleconsultation with health workers outside of visiting hours through a personal network.

*"Online reservations, sis? Maybe it can be effective, so we know whether we will get a queue or not from home. If we do not get it, we do not have to leave the house, we do not have to come and retake the queue, fill out the registration and administration again, right, Sis?"* (Informant #04)

*"Outside of consultation hours, we were even given the midwife's phone number; even though we did not visit, we always communicated that way, and I felt safe and secure even then. With us, we ask on Whatsapp if the complaint is like that, if anyone can help, or if the next visit is in a few months, that is good, right?"* (Informant #05)

## Themes 3: factors influencing ANC visits

During the COVID-19 Pandemic, informants revealed factors from the patients' internal and external environments that influenced them to visit health care facilities.

### a. Category 1: Intrinsic factors

During the COVID-19 pandemic, informants' knowledge, beliefs, and sentiments regarding prenatal care influenced their capacity to seek healthcare services. Despite the obstacles and their fear of the pandemic, informants believe in the importance of ANC and feel capable of accessing it. Cost of examinations, prescriptions, and transportation charges were not substantial budgetary restraints. Because CHC is so close to their home, the informants confirmed they had no problems accessing it.

*"At first, I was scared, but if I am afraid, my psyche is down, and it is even affecting my pregnancy. So, let us take it easy, do not worry, and just be stricter with the procedure."* (Informant #03)

*"It is just routine control. It is not too expensive."* (Informant #02)

*"Alhamdulillah, the midwife is also nearby, just crossing this road. But, going to the hospital is a little far, about 45 minutes, but the road is smooth if you want to go to the hospital without a hitch, there is no traffic light."* (Informant #05)

### b. Category 2: Extrinsic factors

External factors positively influencing informants accessing health care facilities included closest personal support and encouragement, and satisfactory service. The difference between the sexes of pregnant women and the examining doctor was not an obstacle to ANC. They also saw health staff as professionals and prioritized the mother's and fetus's health. On the other hand, pregnant women also mentioned that poster education also encourages their willingness to access ANC. However, due to the CHC's limited examination equipment, the informant was referred to other health care facilities.

*"My husband's support, is unmistakable; thank God, he is always there. While waiting in line, I noticed by a health poster emphasizing the importance of routinely checking the womb. My mother-in-law, and my father-in-law all support me for check-ups, saying that you should take care of your health. If something goes wrong, go to the hospital right away for a check-up so you can always be supportive."* (Informant #04)

*"As for the examination, according to my husband, if there is a female doctor, it is better, but if there is no female doctor there, what can we do? It is okay, and he is already professional as a doctor."* (Informant #05)

*"The examination remains the same, with before the pandemic, their health workers are also total, in serving, I also feel."* (Informant #04)

*"I went to the hospital because there were no ultrasound tools at the CHC."* (Informant #04)

## DISCUSSION

The study discovered diversity in pregnant ANC women's experiences during the COVID-19 pandemic. Although there was no change in the minimum standard of ANC examination during the pandemic, various adjustments were

made to prevent and control COVID-19 spread. It demonstrates that, despite service constraints, pregnant women continue to receive ANC following Ministry of Health guidelines. Enabler factors from patients' own and family, community, or health facilities should be enhanced to encourage patients to sustain regular ANC visits.

The findings indicated that several routine checks were conducted during ANC visits at the Puskesmas or other health facilities for pregnant women. Due to technological constraints in primary health facilities and those owned by health care recipients, remote monitoring and other health services are not possible. These informants' experiences are consistent with previous research, indicating that offline procedures can still be performed if there is no online examination facility (telemedicine). It required that all parties involved maintain social distance and use appropriate PPE (personal protective equipment). (Rocca-Ihenacho & Alonso, 2020).

Throughout the pandemic, informants continued to receive basic examination procedures, including history taking, performing physical tests such as vital signs, anthropometry/ nutritional status, and assessing the fetus's condition. These findings are also consistent with the literature, which indicates that basic tests such as blood pressure checks during pregnancy should be performed regardless of the conditions to prevent pregnancy hypertension (Tucker *et al.*, 2017). This procedure is known to prevent premature birth, placental abruption, and fetal growth restriction as a result of complications of gestational hypertension (Bello *et al.*, 2018). Pre-pregnancy weight measurements are also required to calculate BMI and determine the pregnancy weight growth range (Carrilho *et al.*, 2020). Literature shows that excessive weight gain and inadequate nutrition during pregnancy raise the risk of preterm birth and non-communicable diseases (Meija & Rezeberga, 2017). As mandated by the Indonesian Ministry of Health, nutritional assessments were necessary to address the chronic energy deficiency and prevent anemia. As an integral procedure of ANC, examinations of fetal growth were carried out following established standards (Peter *et al.*, 2015). The Leopold technique is a non-invasive, cost-effective method for identifying the fetus's location, position, and presentation in pregnant women (Nahum, 2002). Evaluating the fetal heart rate's frequency and rhythm is critical for determining the fetus's health (Bowers *et al.*, 2021). In order to determine fetal growth retardation, the height of the uterine fundus should be assessed in addition to ultrasound examination (Peter *et al.*, 2015).

The study revealed that the pregnant women were still obtained ultrasound and blood and urine laboratory examinations as integrated ANC procedures. As recommended by numerous guidelines, they should receive antenatal screening for complete blood count, blood group, rubella antibody status, serology for syphilis, hepatitis B, and HIV tests (Alkhatib, 2018). However, ultrasound examinations for pregnant women with confirmed SARS-CoV-2 infection should be postponed, as directed by the Indonesian Obstetric and Gynecologist Association (Direktorat Kesehatan Keluarga, 2020). This situation demonstrated how pandemic COVID-19 impacts the risk of unmet high-quality healthcare received by pregnant women.

As part of the integrated ANC service, the informants disclosed the dental and psychological examination services they received. Although during the pandemic period there is a limitation in dental care practices, dental care in pregnant women is essential to prevent premature birth, low birth

weight, pre-eclampsia, and other teeth and oral cavity problems (Yenen & Ataçağ, 2019). On the other hand, the assessment of psychological conditions is no less important as various literature recommend considering the vulnerability of pregnant women to the development of emotional/mental disorders that can continue even after delivery (Hiremath, 2016).

This study also discovered that the pregnant women received nutritional management and TT vaccinations. As part of integrated care, previous research also showed that pregnant women would not get enough nutrients unless they get routine prenatal care (Pant *et al.*, 2020). These findings also consistent with the recommendation that the goal of giving pregnant women TT vaccination is to protect them from tetanus and protect their babies from tetanus neonatal (WHO, 2006; Yaya *et al.*, 2020).

Our findings revealed that respondents' experiences varied before and during the epidemic despite receiving standard prenatal exams. They indicated burdens such as conducting hand hygiene and wearing masks when attending health care facilities, maintaining social distance, and suffering healthcare limits to avoid crowds. The study also found that pregnant women should test for COVID-19 several times during pregnancy and before giving birth. The test results also caused self-isolation for several informants. These procedures were carried out under the Indonesian Ministry of Health's criteria for COVID-19 management in health facilities, which stipulate the examination and first isolation of patients with SARS-CoV-2 (Kemenkes RI, 2020). Although these approaches protect against SARS-CoV-2 transmission and meet international standards (Centers for Disease Control and Prevention, 2020), these procedures could increase anxiety and pandemic fears among pregnant women (Kotlar *et al.*, 2021). Pregnant women should be educated and supported mentally to overcome numerous problems that may harm their pregnancy (Kotabagi *et al.*, 2020).

Our study revealed that the health care facilities' efforts to establish health protocols impacted the informants. Keeping social distance in public areas involves restricting the number of patients, visitors, and people in one room, limiting service time, and enforcing health protocols by health staff themselves to prevent COVID-19 spread. However, informants continue to complain about wait seating capacity. Four out of five respondents agreed that e-registration might be used to shorten queues and can be used to prepare for in-person services (Kemenkes RI, 2020). On the other hand, a notable result of the study is that e-registration would be challenging; the CHC has been unable to implement e-registration due to the patient's unwillingness to cooperate. Although e-registration has been implemented, patients still arrive early to receive services and leave as soon as possible. Hence, visiting hours must be strictly enforced according to appointments during e-registration. CHC could perform e-registration over the phone, videoconferencing, email, or other digital means (Orlando *et al.*, 2019) and assist health workers in taking a patient history first (Rocca-Ihenacho & Alonso, 2020). Therefore, if the patient is suspected of having SARS-CoV-2, the treatment of COVID-19 will be prioritized before visiting ANC (Kemenkes RI, 2020), thereby minimizing transmission at the health facility. Healthcare services delivered via social media, video conferencing, and telemedicine have shown to be viable alternatives during pandemics (Aryal & Shrestha, 2020).

During the COVID-19 pandemic, intrinsic and extrinsic factors influenced the informant's behavior during ANC and

pregnancy visits. Despite the COVID-19 pandemic, the informants believe it is unsafe for pregnant women to skip a pregnancy visit. Notwithstanding their fear of public exposure, they understand the benefits of prenatal health monitoring. These situations in accordance with the guideline that pregnant women should not postpone seeking care if they have abnormalities. Absent ANC checkups are more prone to pregnancy and birth complications (Pant *et al.*, 2020).

In our study, significant hurdles to ANC were absent, including financial barriers, gender issues, and access to health care facilities. Despite two informants are unemployed, they all said that the ANC visit had not imposed financial hardship. The Indonesian Ministry of Health requires that CHC provide ANC for free. According to Downe *et al.*, (2019) examination fees are not the only reason preventing pregnant women from attending ANC. Costs of transportation, drugs, and lost income for families reliant on women to work may deter pregnant women from seeking ANC. Previous study by Downe *et al.* (2019) found that some pregnant women chose not to have ANC rather than meet with male health workers. In contrast with this study, our informants can cope with all these barriers.

Another intriguing finding is that informants acknowledged the accessibility of the health care facilities to be reached. Apart from routine ANC, hospital visits were also frequently conducted due to the limited examination instruments available at CHC, especially ultrasonography. Although they took private transportation due to lack of public transportation nearby, they sometimes selected hospitals over CHCs. Informants revealed that transportation never becomes an issue and that their husbands always accompany them. Contrary to earlier research, lack of transportation is one of the reasons pregnant women do not attend ANC visits facilities (Kotlar *et al.*, 2021). In a study by Downe *et al.* (2019), being unable to afford transportation makes an Indonesian pregnant woman did not complete exams despite seeing a doctor or midwife every month.

External factors such as support from close persons and family, community support, health education, lack of examination tools at primary care, and excellent service all encouraged pregnant women were undertaking pregnancy tests during the COVID-19 Pandemic in our study. On the contrary to the previous study, our study informants obtain full support from their husbands and family. Downe's study published in 2019 stated that many married women who lack income rely on their spouses. They must obtain an examination fee and authorization from their husband to attend ANC visits. Due to the patriarchal culture that persists in some locations, such as Pakistan and Bangladesh, the husband is responsible for determining whether or not to have an examination. Pregnant women are frequently discouraged from seeing ANC, despite their awareness of the benefits (Downe *et al.*, 2019).

It is essential to note the critical function of health education in encouraging pregnant women to access healthcare. The placement of visual media emphasizing the importance of maternal health generated an encouraging setting for the informants. Health education aims to develop individuals' knowledge and attitudes toward a healthy lifestyle. Installing posters to educate the public is a straightforward process that can be read repeatedly due to the poster's strategic location (Hasanica *et al.*, 2020).

Satisfactory service is another extrinsic factor contributing to informants' continued use of pregnancy tests. The health staff they encountered continued to perform their duties competently and thoroughly, demonstrating their

compassion for the patients. Our study finding aligns with a previous study that factors contributing to excellent services, such as polite, respectful, and attentive health staff, improves pregnant women's willingness to undergo examinations (Downe *et al.*, 2019).

#### LIMITATION OF THE STUDY

The study's strength lies in the diversity of informant characteristics used to describe the situations of various health service recipients in the study location. Some limitations of the study should be considered. When conducting pandemic research, pregnant women informants are considered vulnerable populations. As a result, the researcher decided to conduct in-depth interviews via video-conferencing applications. It was unable to observe the informant's living environment to support the research findings. Additionally, the researchers did not interview health professionals to gain additional insight. The researcher also limited the investigation of ANC experiences to pregnant women who retained or gained access to ANC but did not examine those who did not or did not receive ANC regularly. On the other hand, as qualitative research, the information obtained in this study is contextualized. Therefore, the interpretation needs to be conducted with caution, mainly if the study results will be used elsewhere.

#### CONCLUSIONS AND SUGGESTIONS

The ongoing COVID-19 pandemic in Indonesia has impacted pregnant women's prenatal check-ups, though they continue to receive ANC services following government standards. Additionally, there were convenience and difficulty associated with limited health services due to changes in examination methods during the pandemic and efforts to enforce health protocols, as well as chances to improve the quality of examinations in health care facilities. By overcoming their barriers, intrinsic and extrinsic factors influenced pregnant women to commence and maintain ANC visits even amid the COVID-19 outbreak. Multisectoral stakeholders highly advocated working to encourage innovations and enhance the quality and safety of CHC-provided ANC administration services. Additional research is necessary to incorporate the perspectives of patients, health care providers, and those who lack access to ANC.

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#### ETHICAL CONSIDERATIONS

This research obtained ethical approval from the Ethics Committee, Faculty of Medicine and Health Sciences, University of Muhammadiyah Yogyakarta No.116/EC-KEPK FKIK UMY/IV/2021 prior to the study. We receive the formal permit and follow the regulation of local health authorities. Informants gave written informed consent before interviews.

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## Conflict of Interest Statement

The authors state that they have no potential conflicts of interest related to the article's writing and publication.

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