

Journal Pre-proof

Antenatal care experiences of uninfected pregnant women during the COVID-19 pandemic: A qualitative systematic review

Jee Young JOO Associate Professor ,
Megan F. LIU Associate Professor

PII: S0029-6554(23)00069-6
DOI: <https://doi.org/10.1016/j.outlook.2023.101964>
Reference: YMNO 101964



To appear in: *Nursing Outlook*

Received date: 12 December 2022
Revised date: 28 February 2023
Accepted date: 5 March 2023

Please cite this article as: Jee Young JOO Associate Professor , Megan F. LIU Associate Professor , Antenatal care experiences of uninfected pregnant women during the COVID-19 pandemic: A qualitative systematic review, *Nursing Outlook* (2023), doi: <https://doi.org/10.1016/j.outlook.2023.101964>

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

© 2023 Elsevier Inc. All rights reserved.

Highlights

- There is little understanding of the challenges faced by uninfected pregnant women during the COVID-19 pandemic.
- This review identified five common themes of pregnant women's antenatal care experiences during the COVID-19 pandemic.
- Healthcare policymakers should support and fund more research on the healthcare of pregnant women (including physical and emotional support) during the COVID-19 pandemic.

Antenatal care experiences of uninfected pregnant women during the COVID-19 pandemic:**A qualitative systematic review**

- Running head: Experiences of pregnancy during COVID-19
- List of all authors
 - 1st Author: Jee Young JOO, PhD, RN, Associate Professor, Gachon University, College of Nursing, Korea
 - 2nd Author: Megan F. LIU, PhD, RN, Associate Professor, School of Gerontology Health Management, College of Nursing, Taipei Medical University, Taipei, Taiwan
- Correspondence addresses: College of Nursing, Gachon University, 191 Hambakmoeiro, Yeonsu-gu, Incheon, 21936, Korea
- Telephone number: +82-32-820-4232 (office)
- Fax number: +82-32-820-4232
- Email address: jeeyoungjoo@gmail.com/drjoo@gachon.ac.kr
- Brief biography:
 - Jee Young Joo (JYJ) is an associate professor in the College of Nursing at Gachon University, Incheon, Korea. Formerly, she was at the University of Missouri-St. Louis, USA. She received her Ph.D. from the University of Iowa, USA.

- Megan F. Liu (MFL) is an associate professor in the School of Gerontology Health Management at Taipei Medical University, Taipei, Taiwan. She received her Ph.D. from the University of Iowa, USA.
- **Prospective Register of Systematic Reviews (PROSPERO) ID: CRD42022324782**
- Acknowledgement: The authors acknowledge thoughtful support of Gachon University in the preparation of this manuscript. The authors thank Dr. Hae-kyung Lee (professor emeritus) for her work in supervision of this study.
- Funding: None.
- Ethical approval: Because no human subjects were engaged in this study, no Institutional Review Board approval was required. As the current review did not use human subjects, an approval from the institutional review board of Gachon University was not applicable.
- Declaration of Conflicts of Interest: None.
- Author Contributions
 - Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data: JYJ, HL, MFL
 - Manuscript writing: JYJ
 - Involved in drafting the manuscript or revising it critically for important intellectual content: JYJ, MFL
 - Study supervision: JYJ

- Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content: JYJ, MFL
- Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: JYJ, MFL
- Neither this manuscript nor parts of it have been submitted elsewhere for publication.

Abstract

Background: There is a limited understanding of pregnant women's antenatal care experiences during the COVID-19 pandemic.

Purpose: To review and synthesize qualitative studies on uninfected pregnant women's antenatal care experiences during the COVID-19 pandemic.

Methods: Five databases were searched for qualitative studies published between January 2020 and January 2023. This study used a thematic synthesis of qualitative evidence and was guided by the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement. Furthermore, this review was registered with PROSPERO and a quality appraisal was assessed.

Results: Nine published qualitative studies were included in this review. The studies were conducted in eight countries and included 3,709 participants. Five themes were identified: (1) disruptions of normal antenatal care services, (2) feelings of uncertainty, (3) desire for

sufficient spousal support, (4) coping strategies, and (5) trust in healthcare providers.

Discussion: The themes can be utilized to reform current interventions for pregnant women by nurse-midwife managers and by healthcare policymakers to improve current practice and direct new research to prepare for future pandemics.

Key Words: Antenatal care, COVID-19, Experience, Midwifery, Nurse, Pregnancy, Qualitative studies, Qualitative synthesis, Qualitative systematic review

Journal Pre-proof

INTRODUCTION

Soon after the start of the coronavirus disease (COVID-19) pandemic in December 2019 in China and its rapid spread worldwide, the World Health Organization (WHO) declared the disease a public health emergency of international concern (PHEIC) on January 30, 2020, and determined that COVID-19 would remain so on January 27, 2023 (WHO, 2020; WHO, 2023). Since the COVID-19 outbreak in 2020, many countries have implemented local or national lockdowns and social distancing measures (Ebrahim et al., 2020). Compared with previous epidemics, such as severe acute respiratory syndrome and Middle East respiratory syndrome, the COVID-19 pandemic has had greater global impacts and lasted longer (Watson & Hayter, 2020). Moreover, even though the impact of COVID-19 has lessened compared with the beginning of 2020, new variants are still spread globally (Kimball 2023).

Certain populations are at greater risk from the pandemic than others (McLemore 2022). At the beginning of the pandemic, individuals with chronic diseases and older adults could not access appropriate services (Aydin & Aktas, 2021). In particular, pregnant women, who need regular healthcare services, were more vulnerable than before the pandemic because of COVID-19 transmission risk to themselves and their fetuses (Aydin & Aktas, 2021). Evidence on whether pregnant women's immune systems can tolerate the virus and its impact on the fetus is still limited and unclear (Aydin & Aktas, 2021; Corbett et al., 2020; Garcia-Flores et al., 2022).

Empirical studies, including quantitative methods of pregnancy during the COVID-19 pandemic, have measured psychological distress, economic difficulties, and other burdens (Lebel et al., 2020; Parra-Saavedra et al., 2020). However, there is considerably less statistical research on pregnant women's risk factors than on the risk factors in the general population (Aydin & Aktas, 2021). Qualitative studies that have aimed to understand the situation of pregnant women

who are not infected with COVID-19 but have potential risks also exist, but are limited. Moreover, no reviews have systematically identified pregnant women's concerns or experiences. Thus, this study is the first to conduct a systematic literature review of the qualitative evidence on COVID-19. It synthesizes pregnant women's perspectives and experiences to identify common issues regarding pregnancy healthcare during the pandemic.

THE REVIEW

Purpose

This review aimed to synthesize qualitative studies of pregnant women's antenatal care experiences during the COVID-19 pandemic among women uninfected with COVID-19 and to identify common themes regarding pregnancy and antenatal care services during this period. There were two research questions: (1) What are the antenatal care experiences of pregnant women during the COVID-19 pandemic? (2) What issues do pregnant women face during the COVID-19 pandemic?

Design

This study employed a thematic synthesis methodology for qualitative systematic reviews (Butler et al., 2016; Thomas & Harden, 2008). This methodology was selected to identify and synthesize common themes (Butler et al., 2016; Thomas & Harden, 2008). It is a relatively new methodology in systematic reviews and nurse-midwife research. To ensure rigorous reporting, this review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Page et al., 2021) and used the Participant, phenomenon of Interest, Context, Outcome (PICO) format (Pettigrew & Roberts, 2005). This study was conducted following the protocols of the International Prospective Register of Systematic Reviews (PROSPERO) and a quality appraisal was assessed. Since no human

participants were recruited for this study, institutional review board approval was not required.

Search Strategy

A comprehensive search of five electronic databases (CINAHL, PubMed, Ovid, Web of Science, and Scopus) was conducted in February 2023. The search identified qualitative studies published between January 2020 and January 2023 (including online publications). The following keywords and Medical Subject Headings (MeSH) terms were combined for searching: *pregnancy or pregnant women; qualitative study, qualitative approach, phenomenology, or interview; COVID-19, or SARS-CoV-2; and experience*. Additional keyword searches were also used: *perspective, perception, or challenge; ethnography or focus group; and pandemic*. The initial search was conducted on February 14, 2023, and a confirmatory search was conducted on February 25, 2023. An example of the search strategy performed using an electronic database is presented in Supplementary Table A. 1.

Inclusion and Exclusion Criteria

The inclusion criteria were as follows: (1) primary, empirical, and qualitative studies or qualitative approach; (2) participants who were pregnant women without COVID-19; (3) highlighted pregnant women's experiences and perspectives when caring for themselves and their fetuses; (4) published in English in peer-reviewed journals; and (5) published (including prepublication) between January 2020 and January 2023.

The exclusion criteria were as follows: studies that did not meet the purpose of this qualitative systematic review; studies focused on the perspectives of pregnant women's spouses or partners; studies in which the perspectives of healthcare providers and those of pregnant women were not clearly distinguished from one another; and studies targeting pregnant women with pandemic- or pregnancy-related diseases.

Selection Process and Quality Assessment

A total of 553 articles were initially identified. Among these, 89 articles remained after duplicates were removed using EndNote X9 (Clarivate Analytics, Philadelphia, USA). Another 40 articles were excluded by title, leaving 49 articles for abstract evaluation. Of these, 37 studies were excluded and 12 studies were selected for full-text review. Three of these were excluded based criteria: one study did not meet the aim of this review, and two studies were excluded because healthcare providers' and pregnant women's perspectives were not clearly distinguished from each other. Nine studies that met this aim were included in this qualitative systematic review (see Figure 1). The first author conducted the study screening and selection process. The second author reviewed the results for accuracy and confirmed the selection strategy.

The nine selected studies were assessed for quality using the Critical Appraisal Skills Program Qualitative Research Checklist (CASP) (2013). This tool consists of ten questions and is used to assess the methodological rigor of qualitative studies based on the following criteria: aim, design, recruitment strategy, data analysis, data synthesis, results, and value of research. Each question can be answered and recorded as a "yes", "no" or "can't tell".

Data Analysis and Synthesis

The research team, two authors, and a research assistant performed the data analysis and synthesis to be mutually complementary for methodological rigor. For data analysis, the first author created a summary table, which the second author checked for accuracy. Table 1 presents the following data: author(s), publication year, nation of publication, aim, sample and sample characteristics, data collection date, study design, data collection methods, data synthesis methods, and major findings.

Thematic analysis and synthesis methods developed by Thomas and Harden (2008) were

used to synthesize the data. The first authors and a research assistant conducted the following analyses and synthesis processes to extract themes from the selected studies: (1) generate codes from the studies; (2) identify common and similar themes from the extracted codes; and (3) abstract, synthesize, and review these themes. The second author confirmed and verified this process. The research team (two authors and one research assistant) performed these processes twice for each selected study to ensure methodological rigor. Finally, the research team discussed their findings to reach a consensus on common themes.

RESULTS

Study Characteristics

Figure 1 presents a PRISMA 2020 flow diagram of the selection process for this review; nine studies met the aim and inclusion criteria of this review. Table 1 presents the characteristics of the nine included qualitative studies using a phenomenological approach (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022; Hailemariam et al., 2021; Javaid et al., 2021; Linden et al., 2021; Norris et al., 2021; Onchonga et al., 2021; Sahin & Kabakci, 2021). All studies were published between 2021 and 2022; two were only online when the study was conducted (Atmuri et al., 2021; Linden et al., 2021). The studies were conducted in seven countries: Australia ($n = 1$), Ethiopia ($n = 1$), Ghana ($n = 1$), Kenya ($n = 1$), Turkey ($n = 4$), Sweden ($n = 1$), and the United States ($n = 2$). (Norris et al. 2021, collected qualitative data from two countries, Ghana and the United States.)

The study participants included 3,709 pregnant women aged between 14 and 22 years. Because the study conducted by Javid et al. (2021) was part of a national online survey study that allowed participants to write free text responses to open-ended questions, it had more participants than most qualitative studies ($n = 2,519$). The term of pregnancy ranged from 9

weeks to the third trimester, and none of the patients had COVID-19 infection during the study. All participants were purposively or conveniently sampled from hospitals where they received antenatal care services.

For eight studies, qualitative data were collected in 2020, the first year of the pandemic. The remaining study was conducted between March and April 2021 (Linden et al., 2021). Data collection methods included semi-structured interviews, focus groups, in-depth interviews, or online open-ended narrative surveys. Due to the pandemic, five studies used telephone instead of face-to-face interviews to reduce the risk of COVID-19 transmission or other infections among women (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022; Norris et al., 2021; Sahin & Kabakci, 2021).

Data analysis included thematic analysis ($n = 7$), content analysis ($n = 1$), and phenomenological analysis ($n = 1$). Two studies applied an existing theoretical framework (Linden et al., 2021; Onchonga et al., 2021), and two other studies developed a conceptual model of COVID-19 related factors based on the results of their studies (Hailemariam et al., 2021; Javaid et al., 2021).

The first and second authors used the CASP 2013 tool to evaluate the quality of the selected studies. Each author independently assessed the studies using this tool. The results were then compared. No discrepancies were found between the authors. Based on these assessments, all nine selected studies were found to have appropriate methodological rigor (Table A.2).

Main findings

This review identified five common themes of pregnant women's antenatal care experiences during the COVID-19 pandemic: (1) disruptions of normal antenatal care services, (2) feelings of uncertainty, (3) desire for sufficient spousal support, (4) coping strategies, and (5)

trust in healthcare providers (see Table 2).

Theme 1: Disruptions of normal antenatal care services

In all nine studies, pregnant women described the challenges they faced during their normal pregnancy experiences and antenatal care services because of the COVID-19 pandemic. (Here, “normal” means regular, scheduled, or common.) Before the pandemic, pregnant women were regularly able to visit hospitals to obtain antenatal services and follow-up care (Aydin & Aktas, 2021; Güner & Oztürk, 2022). After the pandemic began, many women had trouble accessing regular appointments and check-ups. For example, a participant in the study conducted by Güner and Oztürk (2022) said she had limited antenatal follow-up after COVID-19: ‘I could not get an appointment in those troubled days’ (p. 72). Similarly, a participant in another study stated that “I could not go to have tests like detailed ultrasound and triple screening during this period (the COVID-19 pandemic)” (Aydin & Aktas, 2021, p. 6).

Some studies demonstrated disruption of normal pregnancy rituals during the COVID-19 pandemic (Atmuri et al., 2021; Aydin & Aktas, 2021; Javid et al., 2021; Linden et al., 2021). For example, participants in a study conducted by Atmuri et al. (2021) reported that they could not have baby showers with their families or friends. Linden et al. (2021) observed that pregnancy is an important transitional life event normally shared with family and friends; however, these normal processes were overshadowed by the COVID-19 pandemic.

The substitution of prenatal care services was initiated during the pandemic. For example, some women receive virtual visit services (Javid et al., 2021; Norris et al., 2021). Javid et al. (2021) found that some participants were provided with telephone calls from their healthcare providers if they were not required to undergo a lab test. However, participants preferred in-person visits (Atmuri et al., 2021; Norris et al., 2021), and both American and

Ghanaian pregnant women expressed skepticism regarding virtual care (Norris et al., 2021).

Theme 2: Feelings of uncertainty

In all nine included studies, participants demonstrated psychological stress over uncertainty regarding COVID-19 (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022; Hailemariam et al., 2021; Javaid et al., 2021; Linden et al., 2021; Norris et al., 2021; Onchonga et al., 2021; Sahin & Kabakci, 2021). First, pregnant women reported fear, stress, and frustration over possible COVID-19 infection because the impact of COVID-19 was unknown (Atmuri et al., 2021; Aydin & Aktas, 2021; Javaid et al., 2021; Norris et al., 2021; Onchonga et al., 2021). One participant in the study by Onchonga et al. (2021) said, “I feared getting infected. I rather stay at home than getting infected with the new virus” (p. 3). In Norris et al. (2021), participants from Ghana expressed an extreme fear of COVID-19 transmission: “I was really terrified. It got to a point I was too afraid to go to the hospital.” (p. 3).

Participants also reported negative feelings about the COVID-19 pandemic. Some women expressed feelings of depression and anxiety (Javaid et al., 2021; Linden et al., 2021; Sahin & Kabakci, 2021). For example, one woman in her first pregnancy said, “I mostly feel a huge sense of fear, loss, and anxiety related to this pregnancy during a time when I wanted to feel excitement, joy, expectation” (Javaid et al., 2021, p. 4).

Some studies reported that women’s fears and concerns extended to their fetuses (Güner & Oztürk, 2022; Sahin & Kabakci, 2021). One participant in the study conducted by Güner and Oztürk (2022) said, “If it gets infected with me, I was very worried about the young one, and for the first boy, I was constantly in fear, so this is not a lie” (p. 73). Another woman expressed a similar fear: “I could not help being anxious at first; I thought if I were affected, my baby would be affected” (Sahin & Kabakci, 2021; p. 165).

Theme 3: Desire for sufficient spousal support

Studies have demonstrated that pregnant women during the COVID-19 pandemic desired their spouses or partners to play supportive roles (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022; Javid et al., 2021; Linden et al., 2021). Pregnant women value the physical and psychological support from their spouses or partners (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022). For example, a participant in the study conducted by Aydin and Aktas (2021) said that spousal support helped relieve stress and anxiety: ‘I spent time with my husband ... he always supported me ... I can say that I coped with the stress and problems brought about by the pandemic thanks to him’ (p. 8). In Güner and Oztürk’s (2022) study, participants were empowered by their spouses. “He (husband) ... gave me strength. I did not get bored” (p. 73).

Hospitals prohibited spouses or partners from attending follow-up checks during the pandemic (Atmuri et al., 2021; Javid et al., 2021; Linden et al., 2021). Most participants wanted their spouses or partners to attend these visits (Atmuri et al., 2021; Javid et al., 2021; Linden et al., 2021). For instance, one woman reported, “I have to go in for my next appointment because I need to do my glucose test, and my husband is not able to attend with me. I know I can do it on my own, but having your support person is a huge deal” (Javid et al., 2021, p. 4). Most participants wanted their spouses or partners to support their pregnancy journey during these visits.

Theme 4: Strategies for coping

In five studies, participants reported adopting coping mechanisms at home during the COVID-19 pandemic (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022; Javid et al., 2021; Sahin & Kabakci, 2021). For example, they sought information on the internet about

prenatal care, labor and delivery, and postnatal care (Atmuri et al., 2021; Güner & Oztürk, 2022).

One participant said, “We do not know where to go and where we should not go. ... I learn everything from the internet, for example, I ask everything on the internet” (Güner & Oztürk, 2022, p. 72). Likewise, in Atmuri et al. (2021), women reported using the internet to obtain information and to participate in online support groups to reduce social isolation. In one study, participants tried to care for themselves (Javid et al., 2021). They purchased blood pressure cuffs to measure their blood pressure and a Doppler ultrasound instrument to monitor their fetuses (Javid et al., 2021).

Some participants’ coping strategies included indoor activities which lowered the risk of COVID-19 transmission, such as reading books, stretching, and cooking (Aydin & Aktas, 2021; Güner & Oztürk, 2022; Sahin & Kabakci, 2021). Participants reported acquiring new activities or hobbies with positive effects (Sahin & Kabakci, 2021). For instance, one pregnant woman said, “I try to relax myself, I read a book, trying to distract myself with other things, and then it goes away” (p. 167).

Theme 5: Trust in healthcare providers

In six studies, women expressed strong feelings of trust in their healthcare providers, a strong sense of support from them, and gratitude toward them (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022; Javid et al., 2021; Linden et al., 2021; Sahin & Kabakci, 2021). They felt assured and informed by their healthcare providers. Javid et al. (2020) reported that the participants received quality care from their doctors. One participant stated, “My doctor has been informative, supportive, and answered all my questions about the virus and how it could impact my pregnancy and delivery” (p. 4). Similarly, Sahin and Kabakci (2021) reported that doctors, midwives, and nurses relieved their stress and worry, and that their support provided

a sense of comfort. Some participants also had a strong sense of confidence in their midwife's practice, and every time we see her (midwife), she spends over an hour with us and thoroughly answers all of our questions" (Javaid et al., 2020, p. 4).

In Güner and Oztürk (2022), healthcare providers were very concerned about COVID-19 infection control and hygiene practices in pregnant women. For example, to reduce the risk of COVID-19 infection in pregnant women, one hospital in the study created an ultrasound room and polyclinic exclusively for pregnant women. These kinds of advocating actions from healthcare providers increased the participants' assurance and trust.

DISCUSSION

This study was a qualitative systematic review that synthesized nine qualitative studies' findings to identify women's experiences during pregnancy and antenatal care during the COVID-19 pandemic. This is the first review to explore women's experiences with pregnancy since the pandemic began.

Five common themes of pregnant women's experiences when caring for themselves and receiving antenatal care services in hospitals during the COVID-19 pandemic were identified: (1) disruptions of normal antenatal care services, (2) feelings of uncertainty, (3) desire for sufficient spousal support, (4) coping strategies, and (5) trust in healthcare providers. The first theme revealed that women experienced difficulties in receiving appropriate pregnancy healthcare services during the COVID-19 pandemic. Many participants required regular checkups and follow-up services during their pregnancies. However, evidence indicates that postponement and unmet healthcare services during the pandemic resulted in inappropriate and low-quality antenatal healthcare (Atmuri et al., 2021). According to statistics, the average weekly antenatal care services and visits decreased by 16.1% during the COVID-19 pandemic (Peahl et al., 2020).

This theme aligns with evidence from nurse-midwives' perspectives. Nurse-midwives demonstrated concern that labor and birth practices during COVID-19 resulted in the disruption of quality care (Dulfe et al., 2021). Both pregnant women and nurse-midwives need evidence-based information regarding COVID-19 and antenatal care.

Some studies in this review provided virtual healthcare services to reduce exposure to and transmission of COVID-19 in both pregnant women and midwives during the pandemic. However, there is limited evidence on the impact of virtual care services during the pandemic, especially for antenatal care. To ensure the quality of virtual care, more research on COVID-19, antenatal healthcare services, and evidence-based midwives' practice should be conducted. This will also help minimize healthcare service disruptions in pregnant women during the pandemic.

The second theme—feelings of uncertainty—was highlighted in the included studies. During the COVID-19 pandemic, many quantitative studies have measured fear or anxiety with relevant scales and found a significant association between psychological stress and the pandemic (Akgor et al., 2021; Puertas-Gonzalez et al., 2021). These stressors are negatively associated with infant birth weight and gestational age at birth (Giesbrecht et al., 2022). Studies conducted during previous epidemics, such as those involving Ebola and Zika viruses, focused on the psychological stress experienced by pregnant women and found that stress affected pregnancy experiences (Marbán-Castro et al., 2020; Yerger et al., 2020). Thus, it is important to develop interventions to counter negative feelings and improve the mental health of pregnant women, thereby reducing obstetric risks.

The desire for support from one's spouse or partner is another dominant theme experienced by pregnant women. In previous studies, the involvement of a spouse or partner was found to be an important factor in healthy reproductive processes (Bahurupi et al., 2021; Zakaria

et al., 2021). In this review, some pregnant women felt more confident when their partners could be present while they received antenatal care or prepared for the birth of the baby. Similarly, one study identified spousal support as a significant predictor of anxiety during pregnancy during the COVID-19 pandemic (Effati-Daryani et al., 2020). More studies considering the role of spouses or partners in pregnancy during pandemics are recommended to reduce psychological stress among pregnant women.

The fourth theme highlighted in this review was coping strategies. Pregnant women cope with pandemic-related social isolation by engaging in hobbies (Sahin & Kabakci, 2021). As many pregnant women experienced stress and anxiety related to both pregnancy and the pandemic, it is imperative for them to find functional ways to cope (Khoury et al., 2021). Pregnant women used emotional and problem-solving coping strategies to reduce specific COVID-19 stressors and improve their mental health (Khoury et al., 2021). More research on pregnant women's coping strategies and relevant interventions should be conducted. Furthermore, midwives and healthcare providers should educate pregnant women on coping skills to minimize possible mental health issues related to COVID-19.

The last theme was trust in healthcare providers. In the included studies, many participants highlighted the support they received from nurse/midwives and other healthcare providers. There is a high level of trust among pregnant women in their healthcare providers' skills as practitioners and warm communication (Aydin & Aktas, 2021; Linden et al., 2021). Satisfaction with and trust in healthcare providers are related to better health outcomes of pregnancy (Cui et al., 2021; Liu et al., 2021). Further studies with qualitative and quantitative evidence are required on this topic.

Limitations

This review had several limitations. First, the included studies did not clearly identify whether participants were experiencing their first pregnancy. There could be differences in pregnancy perspectives during the COVID-19 pandemic among women with different numbers of pregnancies. Second, some studies did not sufficiently describe all relevant characteristics of participants, such as age, economic status, health insurance, and education level. These characteristics may have affected the review themes. Third, although all studies were published between 2020 and 2022, most interviews were conducted during the first year of the pandemic. However, rapid changes in information regarding COVID-19 and national status during the pandemic may have resulted in a reporting bias. There could have been a difference in both the quantity and quality of information about COVID-19 that participants received, and this difference may have impacted the participants' experiences. Fourth, the studies in this review were conducted in seven different countries, including both developing and developed countries. Economic status and cultural perspectives can change how one experiences a pandemic. Therefore, common themes may not be generalizable to all countries. Fifth, this review included only studies published in English. More studies could have been published in other languages. Moreover, there could have been reporting bias in the included studies. In addition, there were differences among the number of participants in the included studies. For example, one study (Javaid et al., 2022) used qualitative data from a large survey of 2,519 participants. The number of participants in other studies ranged from 14-32. The results of this review may be biased toward qualitative studies.

Despite these limitations, this review makes several contributions to evidence-based midwifery and pregnancy health. This is the first systematic review to focus on pregnant

women's experiences during the COVID-19 pandemic. This review synthesized the opinions of pregnant women from developed and developing countries during the pandemic, meaning that the findings of this review can be broadly applicable. This review provides new evidence-based knowledge on pregnant women's experiences during the pandemic, which can be used to improve pregnancy care and support pregnant women during future pandemics.

Implications for Nursing and Health

Healthcare policymakers should fund more research on pregnant women's healthcare (including physical and emotional support) during the COVID-19 pandemic. Nursing research is also needed to improve midwifery, and thereby improve pregnant women's physical and psychological outcomes.

In addition, nurse midwife leaders should pay special attention to vulnerable populations, especially pregnant women, during pandemics. This population requires psychological, physical, and social support. Thus, more interventions and healthcare management must be developed at the clinical, community, and social levels to overcome the difficulties of pregnancy during a pandemic.

CONCLUSION

This is the first qualitative systematic review to identify common themes in women's pregnancy experiences during the COVID-19 pandemic. Nurse-midwives and other healthcare providers can utilize this qualitative systematic review's findings to clarify areas of antenatal care and to provide support to pregnant women in the COVID-19 and future pandemics. In addition, the spouses and partners of pregnant women can use this review to better understand and support pregnant women.

References

- Akgor, U., Fadiloglu, E., Soyak, B., Unal, C., Cagan, M., Temiz, E., Erzenoglu, B. E., Ak, S., Gultekin, M., & Ozyuncu, O. (2021). Anxiety, depression and concerns of pregnant women during the COVID-19 pandemic. *Archives of Gynecology and Obstetrics*, 304(1), 125–130. <http://doi: 10.1007/s00404-020-05944-1>
- Atmuri, K., Sarkar, M., Obudu, E., & Kumar, A. (2022). Perspectives of pregnant women during the COVID-19 pandemic: A qualitative study. *Women and Birth*, 35(3), 280-288. <http://doi: 10.1016/j.wombi.2021.03.008>
- Aydin, R., & Aktaş, S. (2021). An investigation of women's pregnancy experiences during the COVID-19 pandemic: A qualitative study. *International Journal of Clinical Practice*, 75(9), e14418. <http://doi: 10.1111/ijcp.14418>
- Bahurupi, Y. A., Cehllamuthu, L., & Vasudevan, K. (2021). Men's involvement in women's reproductive health: A community-based mixed-method study. *Indian Journal of Public Health*, 65(3), 261-268. http://doi: 10.4103/ijph.IJPH_1376_20
- Butler, A., Hall, H., & Copnell, B. (2016). A guide to writing a qualitative systematic review protocol to enhance evidence-based practice in nursing and health care. *Worldviews on Evidence Based Nursing*, 13(3), 241–249. <https://doi.org/10.1111/wvn.12134>
- Corbett, G. A., Milne, S. J., Hehir, M. P., Lindow, S. W., & O'connell, M. P. (2020). Health anxiety and behavioral changes of pregnant women during the COVID-19 pandemic. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 249, 96-97. <https://doi.org/10.1016/j.ejogrb.2020.04.022>

- Cui, C., Zhai, L., Sznajder, K. K., Wang, J., Sun, X., Wang, X., Zhang, W., Yang, F., & Yang, X. (2021). Prenatal anxiety and the associated factors among Chinese pregnant women during the COVID-19 pandemic - a smartphone questionnaire survey study. *BMC Psychiatry*, 21(1), 619. <http://doi: 10.1186/s12888-021-03624-1>
- Dulfe, P. A. M., Alves, V. H., Pereira, A V., Vieira, B. D. G., Rodrigues, D. P., Marchiori, G. R. S., & Branco, M. B. R. (2021). Nurse-midwives reconfiguring are in the scope of labor and births in COVID-19 times. *Revista Brasileira de Enfermagem*, 74, e20200863. <http://doi: 10.1590/0034-7167-2020-0863>
- Ebrahim, S. H., Ahmed, Q. A., Gozzer, E., Schlagenhaut, P., & Memish, Z. A. (2020). Covid-19 and community mitigation strategies in a pandemic. *BMJ*, 368, m1066. <http://doi: 10.1136/bmj.m1066>
- Effati-Daryani, F., Zarei, S., Mohammadi, A., Hemmati, E., Ghasemi Yngyknd, S., & Mirghafourvand, M. (2020). Depression, stress, anxiety and their predictors in Iranian pregnant women during the outbreak of COVID-19. *BMC Psychol*, 8(1), 99. <http://doi: 10.1186/s40359-020-00464-8>
- Garcia-Flores, V., Romero, R., Xu, Y. et al. (2022). Maternal-fetal immune responses in pregnant women infected with SARS-CoV-2. *Nat Commun*, 13, 320 <https://doi.org/10.1038/s41467-021-27745-z>
- Giesbrecht, G. F., Rojas L, Patel S, Kuret V, MacKinnon AL, Tomfohr-Madsen L, & Lebel C. (2022). Fear of COVID-19, mental health, and pregnancy outcomes in the pregnancy during the COVID-19 pandemic study: Fear of COVID-19 and pregnancy outcomes. *Journal of Affective Disorders*, 299, 483-491. <http://doi: 10.1016/j.jad.2021.12.057>

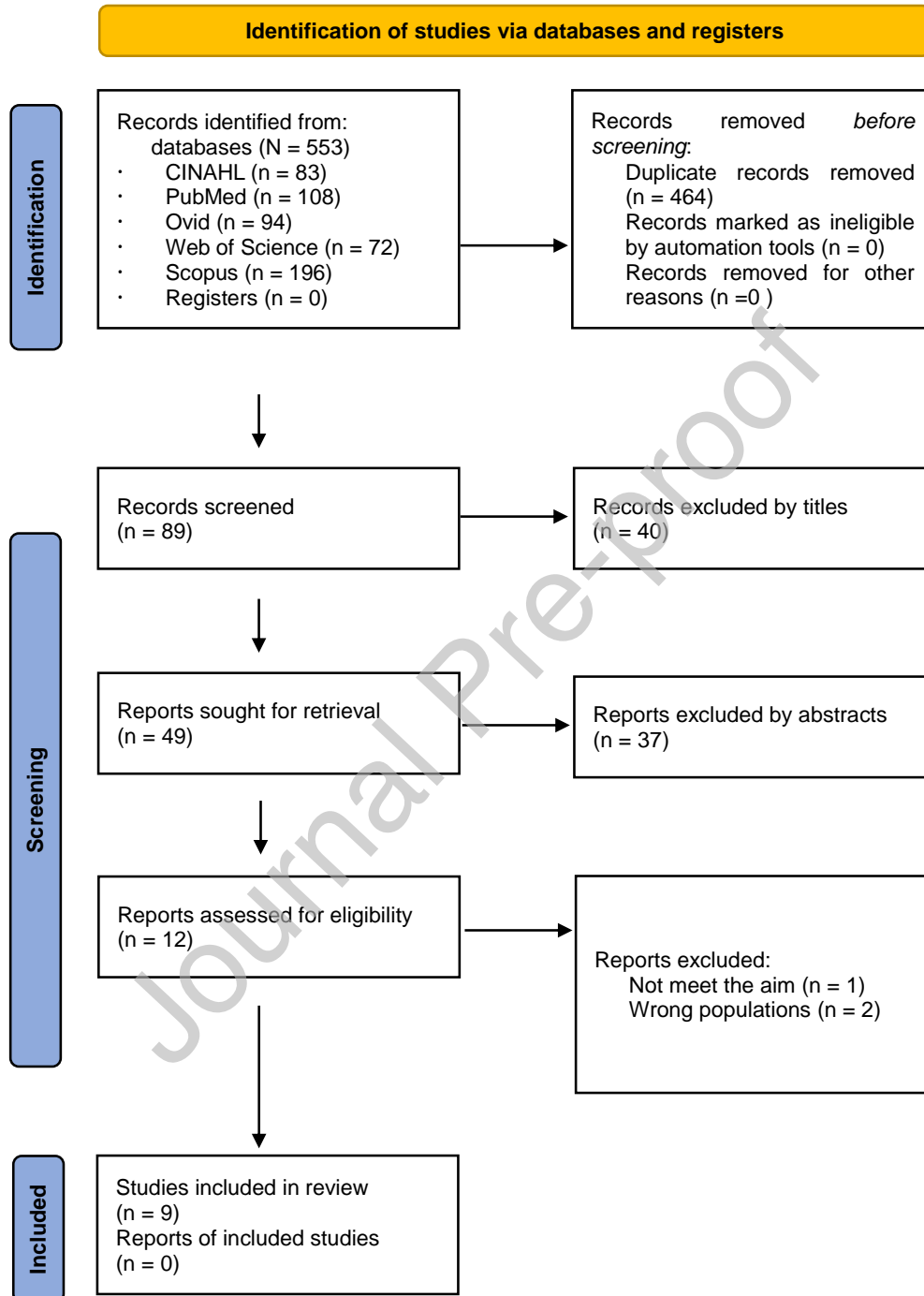
- Güner, Ö., & Öztürk, R. (2022). Psychological and social impact and lifestyle changes among pregnant women of COVID-19 pandemic: A qualitative study. *Archives of Psychiatric Nursing, 36*, 70-77. <http://doi: 10.1016/j.apnu.2021.12.005>
- Hailemariam, S., Agegnehu, W., & Derese, M. (2021). Exploring COVID-19 related factors influencing antenatal care services uptake: A qualitative study among women in a rural community in southwest Ethiopia. *Journal of Primary Care & Community Health, 12*, <http://doi: 10.1177/2150132721996892>
- Javaid, S., Barringer, S., Compton, S. D., Kaselitz, E., Muzik, M., & Moyer, C. A. (2021). The impact of COVID-19 on prenatal care in the United States: Qualitative analysis from a survey of 2519 pregnant women. *Midwifery, 98*, 102991. <http://doi: 10.1016/j.midw.2021.102991>
- Khoury, J. E., Barringer, D., Compton, S. D., Kaselitz, E., Muzik, M., & Moyer, C. A. (2021). Coping strategies mediate the associations between COVID-19 experiences and mental health outcomes in pregnancy. *Archives of Women's Mental Health, 24*(6), 1007-1017. <http://doi: 10.1007/s00737-021-01135-2>
- Kimball, S. (2023). WHO says Covid remains a global emergency but pandemic could near its end in 2023. Retrieved February 14 2023, from <https://www.cnbc.com/2023/01/30/who-says-covid-remains-a-global-emergency-but-pandemic-could-near-its-end-in-2023.html>
- Lebel, C., MacKinnon, A., Bagshawe, M., Tomfohr-Madsen, L., & Giesbrecht, G. (2020). Elevated depression and anxiety symptoms among pregnant individuals during the COVID-19 pandemic. *Journal of Affective Disorders, 277*, 5-13. <http://doi: 10.1016/j.jad.2020.07.126>

- Linden, K., Domgren, N., Zaigham, M., Sengpiel, V., Andersson, M. E., & Wessberg, A. (2021). Being in the shadow of the unknown - Swedish women's lived experiences of pregnancy during the COVID-19 pandemic, a phenomenological study. *Women and Birth, S1871-5192*(21), 00159-1. <http://doi: 10.1016/j.wombi.2021.09.007>
- Liu, C. H., Goyal, D., Mittal, L., & Erdei, C. (2021). Patient satisfaction with virtual-based prenatal care: implications after the COVID-19 pandemic. *Maternal and Child Health Journal, 25*(11), 1735-1743. <http://doi: 10.1007/s10995-021-03211-6>
- Marbán-Castro, E., Villén-Gonzalvo, A., Enguita-Fernández, C., Marín-Cos, A., Menéndez, C., Maixenchs, M., & Bardají, A. (2020). Uncertainties, fear and stigma: Perceptions of Zika virus among pregnant women in Spain. *International Journal of Environmental Research and Public Health, 17*(18), 6643. <http://doi: 10.3390/ijerph17186643>
- McLemore, M. (2022). What are some of the risks of COVID-19 during pregnancy? Retrieved from Febraury 14, 2023 from https://www.greaterthancovid.org/videos/what-are-some-of-the-risks-of-covid-19-during-pregnancy/?gclid=Cj0KCQiAi8KfBhCuARIsADp-A55tNR6-wu1xgNEgcChWiLg9OACRenkvwNgZgcO6pK1JwyAz8s-6HnwaAsHAEALw_wcB
- Norris, K., Huang, P. A., Glantz, J. C., Kodam, R., & Anto-Ocrah, M. (2021). A cross-cultural analysis of the COVID-19 pandemic's impact on antenatal healthcare-seeking behaviors in Ghana and the United States. *Journal of Patient Experience, 8*, 23743735211062392. <http://doi: 10.1177/23743735211062392>
- Onchonga, D., Alfatafta, H, Ngetich, E, & Makunda, W. (2021). Health-seeking behaviour among pregnant women during the COVID-19 pandemic: A qualitative study. *Heliyon, 7*(9), e07972. <https://doi.org/10.1016/j.heliyon.2021.e07972>

- Page, M. J., et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.31222/osf.io/v7gm2>
- Parra-Saavedra, M., Villa-Villa, I., Pérez-Olivo, J., Guzman-Polania, L., Galvis-Centurion, P., Cumplido-Romero, Á., Santacruz-Vargas, D., Rivera-Moreno, E., Molina-Giraldo, S., Guillen-Burgos, H., Navarro, E., Flórez-Lozano, K., Barrero-Ortega, A., Sanz-Cortes, M., & Miranda, J. (2020). Attitudes and collateral psychological effects of COVID-19 in pregnant women in Colombia. *International Journal of Gynecology & Obstetrics*, 151(2), 203-208. <https://doi: 10.1002/ijgo.13348>
- Peahl, A. F., Powell, A., Berlin, H., Smith, R. D., Krans, E., Waljee, J., Dalton, V. K., Heisler, M., & Moniz, M. H. (2021). Patient and provider perspectives of a new prenatal care model introduced in response to the coronavirus disease 2019 pandemic. *American Journal of Obstetrics and Gynecology*, 224(4), 384.e1–384.e11. <https://doi: 10.1016/j.ajog.2020.10.008>
- Pettigrew, M. & Roberts, H. (2005). *Systematic Reviews in the Social Sciences: A Practical Guide*. Oxford, UK: Blackwell Publishing.
- Puertas-Gonzalez, J. A., Mariño-Narvaez, C., Peralta-Ramirez, M. I., & Romero-Gonzalez, B. (2021). The psychological impact of the COVID-19 pandemic on pregnant women. *Psychiatry Research*, 301, 113978. <https://doi: 10.1016/j.psychres.2021.113978>
- Sahin, B., & Kabakci, E. (2020). The experiences of pregnant women during the COVID-19 pandemic in Turkey: A qualitative study. *Women and Birth*, 34(2), 162-169. <http://dx.doi.org/10.1016/j.wombi.2020.09.022>

- Thomas, J. & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8, 45. [https://doi: 10.1186/1471-2288-8-45](https://doi.org/10.1186/1471-2288-8-45)
- Watson, R., & Hayter, M. (2020). The COVID-19 epidemic of manuscripts. *Journal of Advanced Nursing*, 76(10), 2454-2455. [https://doi: 10.1111/jan.14437](https://doi.org/10.1111/jan.14437)
- World Health Organization. (2020). *Timeline: WHO's COVID-19 response*. Retrieved June 30, 2022, from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline>
- World Health Organization. (2023). *Statement on the fourteenth meeting of the International Health Regulations (2005) Emergency Committee regarding the coronavirus disease (COVID-19) pandemic*. Retrieved February 14, 2023, from [https://www.who.int/news/item/30-01-2023-statement-on-the-fourteenth-meeting-of-the-international-health-regulations-\(2005\)-emergency-committee-regarding-the-coronavirus-disease-\(covid-19\)-pandemic](https://www.who.int/news/item/30-01-2023-statement-on-the-fourteenth-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-coronavirus-disease-(covid-19)-pandemic)
- Yerger, P., Jalloh, M., Coltart, C. E., & King, C. (2020). Barriers to maternal health services during the Ebola outbreak in three West African countries: a literature review. *BMJ Global Health*, 5, e002974. [https://doi: 10.1136/bmjgh-2020-002974](https://doi.org/10.1136/bmjgh-2020-002974)
- Zakaria, M., Khan, A. K. M. A. R., Ahmad, M. S., Cheng, F., & Xu, J. (2021). Women's perception of male involvement in antenatal, childbirth and postnatal care in urban slum areas in Bangladesh: A community-based cross-sectional study. *Healthcare (Basel)*, 9(4), 473. [https://doi: 10.3390/healthcare904047](https://doi.org/10.3390/healthcare904047)

Figure 1. PRISMA 2020 flow



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ* 2021;372:n71. doi: 10.1136/bmj.n71

Table 1. Summary of included qualitative studies ($N = 9$)

Authors (year) Country	Discipline Study design	Study aim	<ul style="list-style-type: none"> • Target sample • Number of samples • Mean age or range • Gestation weeks • Method of sampling 	<ul style="list-style-type: none"> • Data collection methods • Interview methods • Data analysis • Data collection date • Theoretical framework 	Major findings
Atmuri et al. (2021, accepted) Australia	Multidisciplinary Qualitative study	To study the perspectives of pregnant women in Australia in relation to the impact of the COVID-19 pandemic on their pregnancy experience	<ul style="list-style-type: none"> • Pregnant women of any gestation booked and receiving antenatal care at the hospital • $N = 15$ • 31 y (20–36 y) • 30 wks (19–36 wks) • Convenience sampling 	<ul style="list-style-type: none"> • Semi-structured interviews • Indirect: Telephone or video conference • Thematic analysis • June 1–19, 2020 • NR 	<ul style="list-style-type: none"> • The COVID-19 pandemic is having a negative impact on the perinatal mental health and perception of social wellbeing in pregnant women. • Participants concerns surrounding support, uncertainty and preparedness, balanced with views of resilience and optimism
Aydin & Aktas (2021) Turkey	Nursing & Midwifery Qualitative study	To examine women's pregnancy experiences during the COVID-19 pandemic	<ul style="list-style-type: none"> • Pregnant women at a state hospital pregnancy outpatient clinic • $N = 14$ • 24–39 y • 18–37 wks • Purposive sampling 	<ul style="list-style-type: none"> • Semi-structured interviews • Indirect: Telephone interview • Thematic analysis • December 2020 • NR 	<ul style="list-style-type: none"> • The pandemic has caused pregnant women to worry about their own and their fetus's safety. • The pandemic has positive effects on some of the participants' marital relationships, adaptations to pregnancy, and coping strategies.
Güner & Oztürk (2022) Turkey	Nursing & Midwifery Qualitative study	To examine the challenges faced by pregnant women and their daily life activities during the COVID-19 pandemic and to assess the psychological impacts of the pandemic and their expectations to improve women's mental health	<ul style="list-style-type: none"> • Pregnant women • $N = 30$ • 28.93 y (20–38 y) • Second and third trimester • Purposive sampling 	<ul style="list-style-type: none"> • Semi-structured interviews • Indirect: Telephone interview • Thematic analysis • June–August 2020 • NR 	<ul style="list-style-type: none"> • The pandemic had multidimensional impacts on pregnant women, including their social life and physical health. • Psychologically, the pandemic caused many negative emotional states, particularly concerns and fears.
Hailemariam et al. (2021) Ethiopia	Multidisciplinary Qualitative study	To explore COVID-19 related factors influencing antenatal care service uptake in rural Ethiopia	<ul style="list-style-type: none"> • Pregnant women • $N = 44$ • 25–43 y • Third trimester • Purposive sampling 	<ul style="list-style-type: none"> • Focus group and in-depth interviews • F2F: Open-ended questions in health centers • September–November 2020 • Thematic analysis • Developed conceptual 	<ul style="list-style-type: none"> • The study revealed several COVID-19 related factors influencing the uptake of antenatal care service during the pandemic.

Authors (year) Country	Discipline Study design	Study aim	<ul style="list-style-type: none"> • Target sample • Number of samples • Mean age or range • Gestation weeks • Method of sampling 	<ul style="list-style-type: none"> • Data collection methods • Interview methods • Data analysis • Data collection date • Theoretical framework 	Major findings
Javaid et al. (2021) USA	Multidisciplinary Qualitative study	To explore if and how women perceived their prenatal care to have changed as a result of COVID-19 and the impact of those changes on pregnant women	<ul style="list-style-type: none"> • Pregnant women from 47 states (national survey) • $N = 2,519$ • 32.7 y • 23.4 wks • Purposive sampling 	<ul style="list-style-type: none"> • Online survey • Indirect: Open-ended narrative survey and responses • April 2020 • Thematic analysis • Developed a conceptual framework 	<ul style="list-style-type: none"> • model of COVID-19 related factors • Predominant themes included COVID-19's role in creating structural changes within the healthcare system, behavioral changes among both pregnant women, and emotional consequences for women who were pregnant during the pandemic.
Linden et al. (2021, accepted) Sweden	Multidisciplinary Qualitative study	To gain a deeper understanding of how women not infected by SARS-CoV-2 experienced pregnancy during the COVID-19 pandemic in Sweden	<ul style="list-style-type: none"> • Pregnant women who were not infected by COVID-19 • $N = 14$ • 28–37 y • Second-third trimester • Purposive sampling 	<ul style="list-style-type: none"> • In-depth interviews • F2F: Open-ended questions in recruited hospitals • March–April 2021 • Phenomenological analysis • The lifeworld theory 	<ul style="list-style-type: none"> • A strong trust in maternal health-care services despite the lack of information available
Norris et al. (2021) Ghana & USA	Multidisciplinary Qualitative study	To understand pregnant women in Ghana and the United States antenatal care (ANC) experience	<ul style="list-style-type: none"> • Pregnant women in Ghana and the United States • $N = 32$ women (15 Ghanaians, 17 Americans) • 25–40 y • Second-third trimester • Snowball sampling 	<ul style="list-style-type: none"> • Semi-structured interviews • Indirect: Telephone interviews or video conference • May–July 2020 • Thematic analysis • NA 	<ul style="list-style-type: none"> • The pandemic did not reduce adherence to antenatal care visits, but instead created barriers for women striving to retain high-quality antenatal care amid the pandemic.
Onchonga et al. (2021) Kenya	Multidisciplinary Qualitative study	To understand the health-seeking behavior of women who were pregnant during the onset of the COVID-19 pandemic in Kenya	<ul style="list-style-type: none"> • Pregnant women who attended the antenatal care visits • $N = 26$ • 21–43 y • NA • Purposive sampling 	<ul style="list-style-type: none"> • Focus groups • F2F: focus group discussions in a county referral hospital in Kenya • Thematic analysis • July–August 2020 • The “Three Delay” model theoretical framework 	<ul style="list-style-type: none"> • Fear of COVID-19 was a major factor that hindered access to maternal healthcare services. • The delays in deciding to seek care, delays in reaching healthcare facilities and delays in receiving quality healthcare services at the healthcare facility were a result of the fear of contracting the virus.

Authors (year) Country	Discipline Study design	Study aim	<ul style="list-style-type: none"> • Target sample • Number of samples • Mean age or range • Gestation weeks • Method of sampling 	<ul style="list-style-type: none"> • Data collection methods • Interview methods • Data analysis • Data collection date • Theoretical framework 	Major findings
Sahin & Kabakci (2021) Turkey	Nursing & Midwifery Qualitative study	To understand the experiences of pregnant women during the COVID-19 pandemic	<ul style="list-style-type: none"> • Pregnant women care visits • N = 15 • 20–33 y • 9–34 wks • Purposive sampling 	<ul style="list-style-type: none"> • Semi-structured interviews • Indirect: Interview via phone call • Content analysis • July–August 2020 • NA 	<ul style="list-style-type: none"> • The results of the study show that coronavirus pandemic has a significant potential for creating anxiety, adversity and fear, which has a negative emotional effect on pregnant people.

Note. F2F = face to face; NR = not reported.

Table 2. Summary of thematic analysis

Main themes	Coding texts
Disruptions of normal pregnancy and antenatal care services	<ul style="list-style-type: none"> • Prenatal period and care services during the COVID-19 pandemic differed from usual care (Atmuri et al. 2021; Hailemariam et al. 2021; Sahin & Kabakci, 2021) • Regular appointments with hospitals, daily living, and traditional pregnancy rituals were all challenging and not easy to do comfortably (Atmuri et al. 2021; Aydin & Aktas, 2021; Javid et al., 2021; Linden et al., 2021) • Postponed (delayed) regular pregnancy follow-ups (Aydin & Aktas, 2021; Güner & Oztürk, 2022; Norris et al. 2021; Onchonga et al. 2021) • Virtual visits (Javid et al., 2021; Norris et al., 2021)
Feelings of uncertainty	<ul style="list-style-type: none"> • Risk of COVID-19 infection made women fear for themselves and their fetus (Atmuri et al. 2021; Aydin & Aktas, 2021; Javid et al., 2021; Norris et al., 2021; Onchonga et al., 2021) • Social isolation and limited social interaction made women feel nervous, depression, and anxiety (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022; Javid et al., 2021; Linden et al., 2021; Sahin & Kabakci, 2021) • Fear and worry of possible issues to their fetus during the COVID-19 pandemic (Güner & Oztürk, 2022; Sahin & Kabakci, 2021; Javid et al., 2021)

Main themes	Coding texts
Desire for sufficient spousal supports	<ul style="list-style-type: none"> • Supportive spouses (or partners) were valued (Atmuri et al., 2021; Aydin & Aktas, 2021; Güner & Oztürk, 2022) • Caregivers, especially spouses (or partners), were assuring (Atmuri et al., 2021; Aydin & Aktas, 2021) • Women could not co-attend appointments with partners (hospital prenatal check-up) (Atmuri et al., 2021; Javid et al., 2021; Linden et al., 2021) • Desire to attend antenatal care services with spouse (or partners) (Atmuri et al., 2021; Javid et al., 2021; Linden et al., 2021)
Strategies for coping	<ul style="list-style-type: none"> • Information about birth and postnatal care sought from the Internet (Atmuri et al., 2021; Güner & Oztürk, 2022) • Coping via indoor activities (such as reading books, indoor exercise, cooking) (Aydin & Aktas, 2021; Güner & Oztürk, 2022; Sahin & Kabakci, 2021) • To get rid of COVID-19-related stress, focusing on and preparing for the birth of baby (Aydin & Aktas, 2021; Sahin & Kabakci, 2021) • Self-management such as purchasing medical supplies (such as blood pressure cuff, Doppler ultrasound) (Javid et al., 2021)
Trust of healthcare providers	<ul style="list-style-type: none"> • Hospital nurses and midwives were very supportive (Aydin & Aktas, 2021; Javid et al., 2021; Sahin & Kabakci, 2021) • Women expressed strong trust and highlighted communication with healthcare providers (Atmuri et al., 2021; Linden et al., 2021; Sahin & Kabakci, 2021) • Hospital healthcare providers were about disinfection, opening a polyclinic exclusively for pregnant women (Güner & Oztürk, 2022) • Healthcare providers were very supportive and informative (Javid et al., 2021; Sahin & Kabakci, 2021)

Table A. 1. Example of searching strategy performed on an electronic database as of February 14, 2023

No.	Query	Items found
1	Pregnancy	239,234
2	Pregnant women	44,337
3	Qualitative study	158,371
4	Interview	331,179
5	COVID-19	92,150
6	Experience	98,435
7 Combine	(1 or 2) and (3 or 4) and 5 and 6	87
8 Limit	7 + (Date = "20200101-20230131)	87
9 Limit	8 + ("English")	83

Table A. 2. Quality appraisal of included studies using the Critical Appraisal Skills Programme Qualitative Research Checklist

Items	Atmuri et al. (2017)	Aydin Aktas (2018)	Güner Oztürk (2021)	Hailemariam et al. (2012)	Javaid et al. (2020)	Linden et al. (2021)	Norris et al. (2020)	Onchonga et al. (2021)	Sahin & Kabakci (2021)
1. Was there a clear statement of the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y
2. Is a qualitative methodology appropriate?	Y	Y	Y	Y	Y	Y	Y	Y	Y
3. Was the research design appropriate to address the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y
4. Was the recruitment strategy appropriate to the aims of the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y
5. Was the data collected in a way that addressed the research issue?	Y	Y	Y	Y	Y	Y	Y	Y	Y
6. Has the relationship between researcher and participants been adequately considered?	N	N	N	N	N	N	N	N	N
7. Have ethical issues been taken into consideration?	Y	Y	Y	Y	Y	Y	Y	Y	Y
8. Was the data analysis sufficiently rigorous?	Y	Y	Y	Y	Y	Y	Y	Y	Y
9. Is there a clear statement of findings?	Y	Y	Y	Y	Y	Y	Y	Y	Y
10. How valuable is the research?	Y	Y	Y	Y	Y	Y	Y	Y	Y

Note. Y = yes; N = no or "can't tell"

CREDIT STATEMENT

- Conceptualization: Made substantial contributions to conception and design, or acquisition of data, or analysis and interpretation of data: JYJ, HL
- Writing - Original Draft: Manuscript writing: JYJ
- Investigation: Involved in drafting the manuscript or revising it critically for important intellectual content: JYJ, MFL
- Supervision: Study supervision: JYJ, MFL
- Project administration: Given final approval of the version to be published. Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content: JYJ, MFL
- Agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved: JYJ, MFL