



“Fear and anxiety is what I recall the best.”: A phenomenological examination of mothers’ pregnancy experiences during COVID-19 in the United States☆☆

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ABSTRACT

Objective: The purpose of this phenomenological study is to understand mothers’ lived pregnancy experiences during the COVID-19 pandemic.

Design: A qualitative, phenomenological study

Setting: Participants completed the demographic survey online and semi-structured interviews, via video conferencing between November and December 2021

Participants: A sample of 28 mothers who were pregnant during the COVID-19 pandemic participated in the study.

Methods and Results: An inductive, thematic approach was used to analyze the data. Two central themes and eight subthemes emerged from the six-phase thematic analysis. The first central theme, *Depth of Knowledge About COVID-19*, included the following subthemes: 1) *Vaccines* and 2) *Uncertainty for Exposure*. The second central theme, *Impacts of COVID-19*, had six subthemes: 1) *Types of Support Received*, 2) *COVID-19 Restrictions*, 3) *Childcare*, 4) *Mental Health*, 5) *Spending More Time at Home*, and 6) *Isolation*.

Conclusions: Findings of this study revealed mothers experienced a significant amount of stress and anxiety related to the coronavirus pandemic during their pregnancy.

Implications for practice: Our findings highlight the need to provide pregnant mothers comprehensive care, including mental health services, adequate access to social support, and providing clear information regarding COVID-19 vaccination and its impacts on pregnancy.

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Introduction

As of November 2022, the coronavirus disease 2019 pandemic—hereafter “COVID-19”—resulted in over 97 million confirmed cases and over one million deaths in the United States (Centers for Disease Control (CDC), 2022). Further, pregnant women were at increased risk for negative outcomes associated with COVID-19, including greater severity of symptoms and preterm birth if infected. Maternal COVID-19 infection data from January 2020 to December 2021 reported that over 114,000 women contracted COVID-19

during pregnancy, resulting in over 11,000 preterm births and over 1000 pregnancy losses in the U.S. (CDC, 2022; Juan et al., 2020).

Pregnancy is a major transition, especially for first-time mothers, given the psychological, social, and physiological changes that take place through postpartum. Pregnant mothers are vulnerable to poor psychological well-being with a significant portion of mothers experiencing depression (10–30%) or anxiety (13–30%) postpartum (Falah-Hassani et al., 2016; Gavin et al., 2005). Notably, postpartum depression and anxiety have been elevated since the outbreak of COVID-19 (Cameron et al., 2020). Public health measures (e.g., no-visitor policy; social distancing) were in place to control and minimize COVID-19 exposure and transmission at the beginning of the pandemic. Consequently, these restrictions negatively impacted pregnant mothers’ lives as many face-to-face interactions (e.g., prenatal appointments; birth-related programs) transitioned to virtual delivery (Karavandra et al., 2020). Pregnant mothers’ social support was adversely impacted as their partners

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were unable to physically accompany mothers to appointments (Karavadra et al., 2020), contributing to a decline in mothers' emotional well-being (Güner & Oztürk, 2021) and increased sense of isolation (Moltrecht et al., 2022). Specifically, researchers found that the combination of changes resulted in heightened emotional distress and anxiety for pregnant mothers worldwide, including mothers from Turkey (Sahin and Kabakci, 2021), the United Kingdom (Riley et al., 2021), Australia (Sweet et al., 2021), and Canada (Kolker et al., 2021).

Importantly, these unexpected changes potentially undermined protective factors (e.g., social support; perception of quality of maternal care) for mother's psychosocial adjustment during pregnancy. For example, emerging research revealed that psychological symptoms, such as maternal depression, anxiety, and stress during pregnancy (Mappa et al., 2020) and postpartum (Ryan and Barber, 2022) increased mothers' risks for preterm birth (Karasek et al., 2021), traumatic childbirth (Mayopoulos et al., 2021), and subsequent issues with mother-infant bonding (Liu et al., 2022).

Current research revealed negative impacts of COVID-19 on multiple dimensions of pregnant mothers' well-being, both physical (Aydin and Aktaş, 2021) and psychological (Güner & Oztürk, 2021) for mothers in multiple countries, such as Canada (e.g., Kolker et al., 2021). To date, qualitative research evidence of mothers' pregnancy experiences in the U.S. during COVID-19 is limited (Farewell et al., 2020). Therefore, the study employed a qualitative, phenomenological approach to understand how COVID-19 influenced U.S. mothers' pregnancy experiences.

Methods

Design

This study used a phenomenological qualitative design to learn about the essence of a particular phenomenon—mothers' pregnancy experiences during COVID-19 (Merriam, 2009). Phenomenology aims to understand the meaning of people's lived experiences of a phenomenon (Starks and Trinidad, 2007). Data were collected through semi-structured interviews about subjective experiences and personal meaning (DeMarrais, 2004). Authors (A1 and A3-A5) served as primary data collectors following qualitative inquiry guidelines (Creswell, 2013). The University Institution Review Board approved this study.

Recruitment and data collection

Participants were selected through convenience sampling. In November 2021, an IRB-approved email script was sent to a university parent listserv which provides information to university students, staff, and faculty with children to connect parents with other parents (e.g., family friendly events). The recruitment email included information about the study, the online Qualtrics consent form, and a demographic survey. For inclusion participants had to be at least 18 years old and pregnant in 2020 or later. Interested participants completed the online demographic questionnaire and provided their availability to schedule the semi-structured interview. Data saturation was reached through initial recruitment efforts so no further recruitment efforts were made. The participants were informed about the purpose of the study and that the interview would be conducted by an undergraduate research assistant (A3-A5) or postdoctoral researcher (A1). Participants were not aware personal goals or information about the researchers. All interviews were conducted via Zoom between November and December 2021, auto-recorded, and transcribed. Participants were asked interview questions (e.g., "Were there any challenges with being pregnant during COVID-19? If so, what are they?"). Addi-

Table 1
Mothers' Demographic Characteristics (N = 28).

| Characteristics | n | % |
|----------------------------------|----|------|
| <i>Age</i> | | |
| 25–30 | 6 | 21.4 |
| 31–35 | 12 | 42.9 |
| 36–40 | 10 | 35.7 |
| <i>Ethnicity</i> | | |
| White/Caucasian | 26 | 92.9 |
| LatinX | 1 | 3.6 |
| Other | 1 | 3.6 |
| <i>Employment Status</i> | | |
| Full-time | 19 | 67.9 |
| Part-time | 2 | 7.1 |
| Unemployed, not looking for work | 4 | 14.3 |
| Student | 3 | 10.7 |
| <i>Number of Children</i> | | |
| 1 | 8 | 28.6 |
| 2 | 15 | 53.6 |
| 3 | 3 | 10.7 |
| 4 | 1 | 3.6 |
| 5 | 1 | 3.6 |
| <i>Planned Pregnancy?</i> | | |
| Yes | 24 | 85.7 |
| No | 4 | 14.3 |

tional questions were asked if clarification were needed. Interviews lasted an average of 20 min.

Contexts of the COVID-19 pandemic during data collection

In the U.S., participants had access to COVID-19 vaccines at the time of their interviews (November and December 2021). Pregnant mothers were first eligible for COVID-19 vaccines in March 2021. In November 2021, vaccines were made available to the general public, including children aged 5–11; the first booster was available to individuals 18 years and older starting in December 2021 (CDC, 2023). At the time of the interviews, precautionary measures (e.g., mandated masking; social distancing) were lifted but still recommended for those who contracted COVID-19 or had been exposed. Rapid tests were also available.

Participants

A total of N = 43 participants completed the initial demographic survey and consented to the study. All participants were contacted to schedule a semi-structured interview, though 15 did not reply when contacted. A final sample of N = 28 mothers completed semi-structured interviews. At the time of the interviews, many mothers were either 31–35 (n = 12) or 36–40 (n = 10) years of age, identified as White (n = 26), employed full-time (n = 19), had at least one (n = 8) or two children (n = 15), and had a planned pregnancy (n = 24) during the COVID-19 pandemic (See Table 1). All mothers had given birth at the time of their interview; thus, all mothers were reflecting on their pregnancy experiences during their interview.

Reflexivity of the research team

A1 and A2 have doctoral degrees in human sciences and developmental psychology, in addition to advanced training qualitative methodologies. A1 was the primary investigator for this study in her position as a postdoctoral trainee focused on health disparities. A3-A5 were undergraduate research assistants in diverse fields such as biology and psychology at the time of the study. All authors are women.

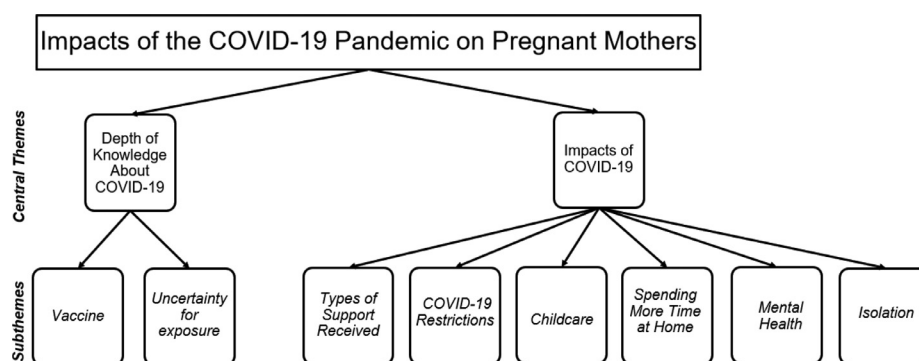


Fig. 1. Central themes and subthemes of interviews with mothers.

Thematic analysis

An inductive, six-phase thematic analytic approach (Braun and Clarke, 2006; Braun and Clarke, 2021) was used to analyze the transcripts and to generate the central and sub-themes: 1) read transcripts for familiarity with data, 2) generate initial codes, 3) identify themes, 4) review themes, 5) define and name themes, and 6) produce report. Authors A3-A5 transcribed and independently analyzed and coded a subset of assigned interviews using an Excel spreadsheet. Five of the transcripts were double coded to allow for discussion and shared understanding of initial codes. Discrepancies in these codes were resolved through discussion. Authors (A1 and A3-A5) met biweekly to discuss the coding process and resolve any discrepancies at each phase of thematic analyses.

Three procedures were employed within the qualitative strand to support the methodological integrity of the findings. *Rich and thick descriptions* of pregnant mothers' lived experiences during COVID-19 were reported to give deep and vivid narratives to the readers, providing grounded evidence and justifications through quotes and excerpts (Creswell and Miller, 2000). Author perspectives were managed via *iterative coding* processes and "*bracketing*," which reduces bias by allowing authors to engage in reflection about their own assumptions (Merriam, 2009), and provide rich and descriptive quotes to support each theme (Noble and Smith, 2015; Levitt et al., 2018).

Results

Thematic analysis of the semi-structured interview transcripts yielded two central themes and eight subthemes (See Fig. 1 and Table 1S).

Depth of knowledge about COVID-19

The first central theme is *Depth of Knowledge About COVID-19*, which includes two subthemes: *Vaccines* and *Uncertainty of Exposure*.

Vaccines

Many mothers mentioned the lack of information available to them regarding COVID-19 vaccines, such as the impact of vaccines or exposure to the virus on pregnant mothers. P02 described "the uncertainty of knowing the risks" and questioned whether she should get vaccinated and if vaccines "[would] cause preterm labor" or "miscarriage." Similarly, P08 felt unsure about the vaccination information available to her as she did not have "a whole ton of idea of what would happen to the baby" if she got vaccinated while pregnant and was uncertain about "long-term effects" of vaccines. Concerns about the quality of vaccines were expressed,

with P23 sharing that she got the "Johnson & Johnson [vaccine]" before the public "knew it wasn't the best." Therefore, she "felt very unprotected" and "if it weren't for the booster, anxiety would be significantly higher."

Uncertainty of exposure

Mothers reported feeling anxious and stressed because of the uncertainty of COVID-19 exposure and how it might impact their baby. P05 commented that early in the pandemic, she felt "a lot of fear and stress" about "how [COVID-19] was transmitted...[because] it was airborne at the time." P05 felt "stressed about potentially getting sick" and passing it to her baby. Likewise, P12 stated "the data [about COVID-19] was extremely scary when it came to pregnancy," which made her "more anxious about the whole situation." The fear of contracting COVID-19 resulted in P13 disclosing that she "didn't share [their] pregnancy as much." Moreover, P03 was concerned about contracting COVID-19 while pregnant and "be[ing] on a ventilator," and "miss[ing] [her] baby's birth or [dying]." In general, many mothers had concerns about COVID-19's impact on their health and their unborn child at the time, which contributed to high levels of stress and anxiety. P16 expressed if COVID-19 was not present then "it would have been a better pregnancy" experience.

Mothers expressed concerns about exposure of COVID-19 to other family members. P24 felt "very nervous" about getting COVID-19 until she was vaccinated. She noted that her "husband [was] a nurse at a hospital" so even though "the kids were home and stuff, there were still certain exposure" that she felt they "couldn't control." P01 tried to prevent contracting COVID-19 and voiced that there was "anxiety...trying to get through each day and not bring anything home" to her husband and mother-in-law, who was quarantining with her family for four months.

Impacts of COVID-19

The second central theme is *Impact of COVID-19*, which consists of six subthemes: *Types of Support Received*, *COVID-19 Restrictions*, *Childcare*, *Mental Health*, *Spending more time at Home*, and *Isolation*. This central theme embodied many dimensions of mothers' lives that were impacted by COVID-19.

Types of support received

Mothers discussed changes in the types of support they received during their pregnancies due to COVID-19. Many mothers expressed despair regarding their inability to receive support from key individuals in their lives. P16 stated, "you have this tiny little baby, and you can't reach out for those support networks that you normally have because it's like, 'who

can I allow to be around them?' Who is safe?'" Similarly, P03 shared it was "hard not to be able to see [her] immediate family, and it affected relationships with people who weren't being safe how [she] wanted them to." Having strong support is critical during pregnancy especially for first-time mothers, as P18 illustrated, stating "I think not having any support person there, especially if you're a first-time mom is a little crazy, I mean and it's one of the most stressful things you'll do in your life and difficult things you really do need somebody there for support."

Some mothers noticed friends and family stepping up to support them. P01's mother moved in and quarantined with their family during the pregnancy to care for their older child. She stated, "that's the most time I've spent with my mom since I left home to go to college, so that was really truly, truly wonderful." Likewise, P10 stayed with her parents for two weeks prior to giving birth.

Strong support from mothers' partners and husbands was present in our findings. P02 commented that her husband was "very helpful with the older child" and "help[ed] with breakfast" if she needed to rest because of morning sickness. Similarly, P08 felt supported by her partner who went to the grocery stores or completed errands when she "didn't feel comfortable going."

Several mothers mentioned receiving support from other mothers in different capacities. For example, P15 "got a meal train from a group" that delivered food to new mothers or families with newborns; P05 had "people who even reached out offering and loaning or handing out different things" since she was unable to buy baby supplies because of social distancing. P11 was pregnant the same time as her friend who also lived close to her, noting that it was nice to navigate their pregnancy during the pandemic together.

Medical staff were a source of support for some pregnant mothers. P13 explained: "[Medical staff] understood the whole situation was hard on everyone [pregnant mothers] and I think they tried to celebrate milestones with me. Like when we would go in, it's weird that you're celebrating this healthy ultrasound or healthy kicks with a nurse but it was like that was who I had to celebrate these things with and I greatly appreciated their enthusiasm for my pregnancy during this whole thing."

Taken together, mothers received different types of support throughout their pregnancy, while concurrently voicing disappointment and frustration with limitations on the types of support they desired to receive during certain pregnancy experiences (e.g., the presence of their partner during medical appointments).

COVID-19 restrictions

Mothers felt that COVID-19 restrictions negatively impacted their pregnancy experiences, with most emphasizing the no-visitor policy, which left pregnant mothers attending their prenatal appointments without supporters. P12 felt "extremely anxious" about attending her eight-week ultrasound appointment without her partner, particularly because she had "found out about a previous [pregnancy] loss" the last time she went to the hospital, and commented that the hospital was "extraordinarily extreme" for not "making any considerations for anybody," which was "really difficult...and terrible."

The ongoing updated COVID-19 restrictions based on daily confirmed cases guided the changes to hospitals regulations. P11 missed her eight-week ultrasound appointment and received a message that the doctor "didn't know when they'd be able to see [her]." In contrast, P26's husband accompanied her to many of her prenatal appointments before the restrictions were in place. However, she learned about the no-visitor policy when P26 and her husband "showed up for an appointment and they [staff member]

told my husband he couldn't come in." The experience was, "really traumatic" and left P26 "crying" when he was declined entry. Nonetheless, P26 expressed that she recognized the purpose of the no-visitor policy, but also acknowledged the harm the policy could cause to pregnant mothers, stating:

"I think that whoever came up with that policy was coming from a place of concern for women and their baby, which I appreciate. But I don't think that they considered how challenging it is for a woman to go through pregnancy...I think that it was a disservice to the whole health of pregnant women—mental and physical health—to not allow a support person to come. I think that in the long term it had detrimental health outcomes to women when it comes to their stress levels..."

P14 understood the purpose of the restrictions; however, she also viewed her husband as "part of the pregnancy experience" and noted that he "was as much involved in it as [she] was." She needed him there, especially at appointments that included blood work, which she does not "do well with" without his physical support. As a couple, they had to re-strategize how to get the most out of the prenatal appointments without both partners being present. Specifically, P14 described "ask[ing] [her husband] ahead of time, 'do you have questions for the doctor that I should be asking?'" to make sure all his questions were asked. Several mothers described the no-visitor policy having negative impacts on their partners' and spouses' pregnancy experiences, too. The policy was hard for P26's husband, even though he "was able to be there for both the ultrasounds...it was difficult for him not to be there and have the excitement of coming and making sure everything's okay." P25 shared that her husband struggled with the no-visitor policy commenting, "it took him a little longer to adapt to the baby being here the second time" and she thinks "it's in part because of that [no-visitor policy]," which created a "disconnect from the pregnancy" for him the second time around.

Some mothers missed traditional social aspects of pregnancy (e.g., birthing classes; baby showers) due to restrictions. P22 mentioned that it was "unfortunate" that they did not receive as much emotional support from their community. Many in-person birthing classes and programs transitioned to virtual platforms, which many mothers found to be less beneficial compared to in-person delivery. P04 described virtual programs as "not very fulfilling" as the "sense of community wasn't necessarily there like it would have been in person."

Although COVID-19 restrictions dampened many mothers' pregnancy experiences, it is important to note that several mothers expressed contrasting sentiments about these policies. P11 described the no-visitor policy as beneficial, especially during the delivery of their baby, commenting that it was "kind of nice because you don't really want a ton of people coming and saying 'hi' while you're sleep deprived and like not feeling great anyways." P27 shared that she "really actually liked that we weren't allowed to have visitors in the hospital room after my daughter was born because it was such a busy time because you're learning how to take care of your baby, you're healing yourself." Lastly, the social distancing was a positive precaution for P06 because she got pregnant right before Thanksgiving, stating that "people didn't pressure" her to attend gatherings.

Childcare

COVID-19 negatively impacted mothers' childcare options. Many mothers struggled to find childcare, especially those working during their pregnancy. Further, issues with childcare coordination surfaced because of uncertainties of the pandemic, creating additional stressors for pregnant mothers. Specifically, the no-visitor

policy worsened pregnant mothers' childcare challenges. Mothers with multiple children struggled to find someone to care for their children while they attended their prenatal appointments. P07 shared that she could not bring her daughter, and had her husband "had to come home" from work. Similarly, P07 needed more care for her four children and depended on her mother to support her husband because "he wasn't quite up for taking care of four kids by himself so we had to arrange some childcare during that [her appointment]." Having to find short-term childcare for pregnant mothers to attend their appointments was frustrating, which is reflected P16's response:

"...the challenge would be that I had to find childcare for my son because he couldn't come to the appointments with me because of the no-visitor [policy]." (P16)

Finding long-term childcare was difficult, too. P04 mentioned the shortage in different types of childcare options, including center-based and in-home settings (e.g., nanny). Likewise, P10 expressed the challenge as a "main annoyance" as she could not bring her older children to her important appointments with her. P14 described her community as a "childcare desert," which influenced her to enroll her older child in a new school district because it offered in-person learning so she could continue working during her pregnancy.

While some mothers did have childcare during the pandemic, their options caused additional distress because of COVID-19. For example, P07 could have a nanny care for children while she worked, yet, she had concerns about her childcare:

"...It definitely felt scary because that was in November 2020, that was before any vaccines so having someone come into our home ...we obviously asked about their COVID practices and safety stuff but you know, not knowing for sure what their practices were when they weren't at our house that felt pretty scary... we didn't have a lot of other options so...that was definitely really scary to have a nanny."

In contrast, P21 intentionally did not use an available childcare option to reduce COVID-19 risks, stating, "We didn't send out daughter to daycare for a year...I didn't want to risk exposure so not having regular childcare was a struggle."

Spending more time at home

The *Spending More Time at Home* illustrates how the COVID-19-related restrictions contributed to life disruptions. Pregnant mothers described working from home as a positive experience. P09 shared, "I could just work from home at my own pace. I worked up until like two or three days before my scheduled delivery, which I don't think I would have been able to do [if I did] not had the chance to work from home."

Social distancing resulted in more family time, which mothers viewed as a positive aspect of COVID-19. P18 stated, "it was nice as a family, and for my older kids to really bond with their little sister and be part of taking care of her and being home with her all the time." Staying at home also allowed mothers to be more comfortable during pregnancy. P08 and P05 experienced the benefits of not having to be in public while dealing with symptoms like morning sickness. Mothers enjoyed not having to be on their feet for extended periods and being able to wear comfortable clothes throughout pregnancy. Specifically, P14 enjoyed not having "to buy a lot of maternity clothes" and wearing leggings because of remote work. The ability to spend more time at home and work remotely had positive benefits for P07 who "worried about going into preterm labor" but being at home allowed her to "take it easy physically," which was a positive factor of being pregnant during COVID-19.

Mental health

COVID-19 negatively impacted mothers' mental health, resulting in several mothers experiencing elevated stress and anxiety during their pregnancy and postpartum. Notably, several mothers mentioned being diagnosed with postpartum depression or anxiety. P01 reported having postpartum depression symptoms, whereas P09 was diagnosed with postpartum anxiety, expressing that she "think[s] that [diagnosis] was all because of COVID [-19]."

Mothers discussed needing access to mental health services during pregnancy or reported a lack of mental health services available to them. For instance, P25 explained wishing "we had better mental health services in America in general" and that "any kind of group support would have been nice." Access to mental health services was critical for pregnant mothers, especially for mothers like P21 who "had really severe postpartum depression and anxiety" during her first pregnancy. Therefore, P21 noted that she made sure to have her "care team in place," which includes her therapist to ensure she can be in a "really stable place" with her second pregnancy, which resulted in her not having "any of those mental health issues" with her second child.

Isolation

Mothers reported feeling isolated due to experiencing their pregnancy alone and a lack of important face-to-face interactions that are part of the pregnancy experience (e.g., shower, birthing class). P06 described her pregnancy as a "very isolating experience" and "would have liked to have shared [her] pregnancy with more people." Likewise, P04 said she wanted "to share [her pregnancy] journey" but because of COVID-19, her pregnancy experience "felt so isolating" because she went through the pregnancy by herself. Similarly, P08 attributed her isolation to COVID-19, commenting on how it "created some loneliness and just some isolated that probably wouldn't exist" if she was "able to more freely go about and travel and see people." P16 "felt more alone and isolated" because her husband could not "really [be] part of being there, seeing the baby grow" at her appointments.

P13 and P15 noted their pregnancy was much more isolating than expected. P16 elaborated that she "couldn't have people come over or even show their support. It just had to be over the phone or on Facebook or something." As mentioned earlier, COVID-19 restrictions resulted in many mothers missing out on in-person pregnancy experiences such as birthing classes. P05 described a sense of grief related to missing pregnancy milestone celebrations, elaborating, "we were supposed to have a baby shower and things like that and we didn't do that or I think it was kind of mourning the loss of those being with your village sort of things." Additionally, P14 and P20 explained having virtual baby showers and feeling like it was not the same as an in-person celebration.

Lastly, the *Isolation* subtheme was prevalent in mothers' open-ended responses when they were asked to complete the following statement, "If I could describe my overall pregnancy experience during COVID-19 it would be ... because..." Common adjectives such as 'isolating' or 'isolation' ($n = 6$), 'unknown' ($n = 5$), 'stressful' ($n = 4$), 'unique' ($n = 3$), or similar adjectives, were salient in the mothers' open-ended responses (See Table 2S).

Discussion

This phenomenological study interviewed mothers about their pregnancy experiences during the first year of COVID-19 (2020–2021) in the U.S. Thematic analysis resulted in two central themes and eight subthemes. The themes illustrated various pregnancy experiences for mothers during COVID-19, including a decline in psychosocial well-being.

The first theme illustrated pregnant mothers' feelings of uncertainty regarding several aspects of COVID-19, leaving mothers feeling fearful, anxious, and stressed during pregnancy. Mothers emphasized their concerns about the well-being of themselves, their unborn child, and family members. At the height of the pandemic, there was little scientific understanding of COVID-19's impact on pregnant women and their unborn babies, vaccines were not made available to pregnant mothers, and the availability of information about the safety of the COVID-19 vaccination during pregnancy was limited. Consistent with past studies, the lack of knowledge about the disease and increased confirmed cases elevated pregnant mothers' psychological distress (e.g., Sweet et al., 2021; Farewell et al., 2020).

The second theme revealed how multiple dimensions of pregnant mothers' lives were impacted. Mothers reflected upon support received from different people, including their partner, family, communities of mothers, and medical staff. Notably, some mothers sacrificed social support to engaged in social distancing to reduce COVID-19 exposure. Mothers acknowledged the purpose of COVID-19 restrictions to keep everyone safe as confirmed cases and deaths were increasing. However, they voiced frustration with the no-visitor policy, particularly first-time mothers, as it prevented partners from accompanying them to the appointments and sharing in that aspect of the pregnancy as a couple. Paralleling past findings reporting that COVID-19 restrictions negatively impacted experiences of fatherhood (Nespoli et al., 2022), several mothers described their partners as having been negatively impacted by the policy and consequently struggled to adjust to parenthood.

Public health measures also impacted mothers' childcare for their other children as mothers had trouble securing childcare and faced difficult decisions as they evaluated the safety of available options. These combined experiences impacted pregnant mothers' mental well-being and feelings of isolation. Limited social support, childcare, and face-to-face interactions resulted in many mothers reporting feeling anxiety, depression, and increased stress during pregnancy and postpartum. Similarly, past research found that mother's engagement in social distancing, absence of their supporting partner during maternity care appointments, uncertainty about childcare, and concern for themselves and their babies contracting COVID-19 impacted their mental well-being (Moltrecht et al., 2022; Güner & Öztürk, 2021).

However, some mothers expressed positive aspects of COVID-19, highlighting the complexity of pregnant mothers' lived experiences during COVID-19 and expanding on past qualitative research (Kolker et al., 2021). Some mothers reported positive feelings regarding COVID-19 restrictions. For example, the no-visitor policy was beneficial when mothers did not feel comfortable allowing family members to see their newborns in the hospital after they had given birth. Relatedly, social distancing recommendations helped mothers avoid visitors at home after they were discharged from the hospital, reducing exposure to their family and newborn. Pregnant mothers also described the ability to spend more time at home, work from home during their pregnancy, and increased family time as positive experiences during COVID-19.

Strengths and limitations

This study has a range of strengths. First, the phenomenological design of this qualitative study helped captured the nuances and complexity of mothers' pregnancy experiences during the pandemic. Specifically, semi-structured interviews were conducted with mothers about 1.5 year into the pandemic and after they had given birth, affording mothers time to reflect on their pregnancy experiences to provide more descriptive responses. This strength is reflected in the richness of our detailed research findings. Second, past studies have qualitatively analyzed responses

from open-ended survey questions survey to understand mothers' pregnancy experience during the pandemic (e.g., DeYoung and Mangum, 2021), which limits researchers from asking follow-up or clarifying questions. Mothers from our study were able to elaborate or provide clarification with the semi-structured interview approach.

The lack of diversity in our sample is a limitation to this study, which included mostly mothers who identified as White/Caucasian. Therefore, it is critical that future studies descriptively capture the COVID-19-related pregnancy experiences of a more diverse population. Specifically, this pandemic has exposed racial/ethnic health inequalities in maternal mortality rates of pregnant women from marginalized communities due in part to inadequate access to quality health care in the U.S. (Stratton et al., 2021). Increased risk for poor conditions such as hypertension, diabetes, and obesity, and pregnancy-related risks (e.g., preeclampsia) are magnified at pregnancy during COVID-19 for pregnant women of color (e.g., Black/African American; Latinx). It is important all mothers have equal opportunities to voice their pregnancy experiences to help inform regulations and policies that directly impacts their physical and psychosocial well-being.

Lastly, mothers from our sample were from one region of one country and limited in age (e.g., no mothers were under 25 or over 40 years old), limiting the generalizability of our findings. To date, understanding of COVID-19 impacts on the day-to-day lives and pregnancy experiences of mothers is limited. However, our findings are consistent with past qualitative research (Sahin and Kabakci, 2021; Monteiro et al., 2023; Kolker et al., 2021), indicating the global overlap in mothers' lived experiences of being pregnant during the pandemic. Taken together, the collectively knowledge across the studies can be used to informed public health policies that directly and indirectly impact women's health.

Implications

Our findings highlight the critical need to preserve mothers' psychosocial well-being during pregnancy, as elevated psychological symptoms (e.g., depression and anxiety) and limited access to social support, can result in poor well-being and increase risks for pregnancy complications (e.g., Juan et al., 2020). Although little information was available for COVID-19-related risks to pregnant mothers early into the pandemic, scholars have generated important COVID-19 information over the past two years. It is essential to equip pregnant mothers and new mothers with the latest information and access to services and support groups to mitigate the emotional distress that can negatively impact mothers and their pregnancy.

Notably, our findings revealed the negative impact the no-visitor policy had on partners and husbands during mothers' pregnancy, too. It is crucial to consider the psychological well-being of mothers' support system. Future research should examine the depth of the pandemic's impact of fathers and partners in the U.S., as such examination has only been conducted with Italian partners (Nespoli et al., 2022).

Conclusion

The public health policies and protocols to reduce the COVID-19 infections had adverse impacts on multiple facets of mothers' pregnancy experiences and psychosocial well-being. It is crucial to understand the impact COVID-19-related restrictions had on pregnant mothers' well-being and experience to prepare for a future crisis that may require similar restrictions to be in place. Specifically, most mothers experienced increased psychological distress related to COVID-19, with many mothers feeling anxious, fearful, scared, isolated, and lonely during pregnancy. As such, existing and new

programs (e.g., birth classes) or services (e.g., for mental health) should be designed or restructured to be offered in a virtual or hybrid format to help reduce or prevent health-related risks to mothers during their vulnerable transition to parenthood. Lastly, it is vital that pregnant mothers receive comprehensive care that includes mental health services, especially for mothers who are vulnerable to prenatal or postpartum depression or anxiety. Additional services should include support with breastfeeding to facilitate mother-infant bonding; support groups for mothers' partners—as their psychosocial well-being may serve as a protective factor for mothers' well-being—and healthcare providers clearly communicating with mothers about COVID-19-related procedures or protocols (e.g., change in the no-visitor policy) before the mother's appointment.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:[10.1016/j.midw.2023.103700](https://doi.org/10.1016/j.midw.2023.103700).

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