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Perinatal experiences of pregnant women with psychiatric disorders during the COVID-19 pandemic

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ABSTRACT

Objective: We sought to examine the impact of the COVID-19 pandemic on the pregnancy, delivery and postpartum experiences of women with histories of psychiatric disorders.

Method: Women already enrolled in a United States registry which prospectively studies the relationship between the use of psychiatric medications during pregnancy and major congenital malformations were invited to participate in this study. Subjects were asked about their experiences across the pandemic through interviews during pregnancy and the postpartum period and through an emailed questionnaire. Data were collected between May 2020 and February 2021.

Results: Interview and email questionnaire data were collected from 488 individuals. Most participants reported disruption, or planned changes, to their perinatal care due to the pandemic. Women expressed concerns about reduced postpartum support, and the reduction of positive social interactions and opportunities for family/friends to bond with the baby.

Conclusion: Our findings suggest that the pandemic has had a negative impact on the experiences of many pregnant women with pre-existing psychiatric disorders, particularly in relation to changes in care and perceived social support. Given that the risk of relapse of psychiatric disorders is already high in the postpartum period, it is important to identify what factors cause most distress for this at-risk population.

1. Introduction

For many individuals, the COVID-19 pandemic has had a profound impact on physical and mental well-being. While the negative impacts of social isolation, employment changes and financial hardship on the general public have been widely emphasized, it is intuitive that these challenges may have weighed more heavily on those with pre-existing psychiatric disorders. Some women with psychiatric disorders are particularly vulnerable to relapse in pregnancy and the peripartum period [1–3], and the COVID-19 pandemic has presented an additional stressor. While many recent studies have examined the mental health impacts of the pandemic on pregnant women, little research has examined these impacts on pregnant women who have pre-existing psychiatric disorders.

In the United States (US), patients with a previous diagnosis of a psychiatric disorder appear to have increased risk of COVID-19 infection [4,5] and higher rates of hospitalization and death [4]. In particular, schizophrenia spectrum disorders are associated with increased mortality in COVID-19 infection, ranking second only to age in strength of association in a recent cohort study [6]. Additionally, the risk of newly diagnosed psychiatric illness, particularly anxiety disorders, is increased in the three months following COVID-19 infection [5]. While early reports suggested that pregnant women with COVID-19 infection appeared to have similar disease severity to non-pregnant women [7,8], more recent data suggest that COVID-19 infection in pregnancy is associated with increased incidence of adverse obstetric and neonatal outcomes [9] and that pregnant women with COVID-19 are more likely than non-pregnant patients to require intensive care admission and
mechanical ventilation [10]. Studies of depression and anxiety in pregnant and peri-partum women during the pandemic have had varied findings, which may be influenced by geographical variation in the severity and management of the pandemic. A meta-analysis of this topic concluded that rates of anxiety, but not depression, in pregnancy and the peri-partum period had significantly increased [11]. Small studies have suggested that women with a history of psychiatric disorders have experienced increased health concerns and anxiety during the pandemic, compared to those without such a history [12,13].

The pandemic has prompted changes in how maternity care is delivered. Among pregnant women in the US, reduced in-person appointments and increased use of phone and video consultations have been reported [14]. In the United Kingdom (UK), women have described concerns about access to antenatal care, not having a partner present at delivery and the manner in which information is communicated by health care providers about changes to services [15]. Reduced partner support during delivery and the early post-partum period due to the COVID-19 pandemic have been associated with reduced psychological wellbeing post-partum [16].

In this study, we sought to examine the impact of the COVID-19 pandemic on the pregnancy, delivery and postpartum experiences of women with histories of psychiatric disorders, by assessing a prospectively assessed cohort of women with psychiatric diagnoses from the Massachusetts General Hospital (MGH) National Pregnancy Registry for Psychiatric Medications. We aimed to explore what proportion of these enrolled women had experienced a disruption in plans for their perinatal care and delivery, and what issues had prompted the most concern for these women. We hypothesized that a prospectively ascertained cohort of women with pre-existing psychiatric diagnoses would report multifaceted changes to their obstetrical care, labor and delivery experience, as well as a high burden of pre and postpartum stressors related to the COVID-19 pandemic and the concurrent economic and social issues that have occurred in parallel.

2. Methods

2.1. Data collection

Women already enrolled in The National Pregnancy Registry for Psychiatric Medications were invited to participate in this supplemental study from May 2020, after the start of the COVID-19 pandemic in the US (the first confirmed case of COVID-19 in the US was identified on January 20, 2020 [17]). The registry was established in MGH in 2008 and prospectively studies the relationship between the use of psychiatric medications during pregnancy and major neonatal malformations. Methods of data collection, assessment of outcomes, the governance structure of the registry, guidelines for release of findings and registry data are described in detail elsewhere [18,19]. In brief, any pregnant individual, between the ages of 18 and 45, with a history of a psychiatric illness may enroll. At present, the registry does not collect data on gender identity, though trans-men and non-binary individuals are not excluded. Individuals do not have to be based in the US to participate, however currently the vast majority of those enrolled are living in the US. Participants are recruited primarily through health care provider referral, consultations at the MGH Center for Women's Mental Health, and the center's website (www.womensmentalhealth.org). Participants are prospectively interviewed by telephone at three time points across pregnancy and the early postpartum period: at enrollment (generally before 16 weeks' gestation), seven months' gestation, and 12 weeks post-delivery. Participants are asked about demographic characteristics, medication use, social habits (including smoking, alcohol consumption and drug use), medical and psychiatric history, and family history of birth defects. During the final postpartum interview, information is gathered from maternal reports regarding pharmacotherapy, labor, delivery, and neonatal health outcomes. Participants can also consent to collection of obstetric, labor, delivery, neonatal, and pediatric medical records.

All participants in the Registry provide verbal informed consent. The registry and the current supplemental study were approved by the MGH Institutional Review Board. Funding for the Registry derives from multiple manufacturers of psychotropic medications who agree to support the reproductive safety initiative with a fixed proportion of Registry operating costs. Study sponsors have no role in data collection, analysis, interpretation, or manuscript preparation and review.

2.2. Study instruments

For this study, participants were invited to engage in a supplemental COVID-19 interview with a researcher at each of the registry's three pre-defined assessment points (enrollment, seven months' gestation, and 12 weeks post-delivery). These interviews were administered by phone, at the end of the routine interviews completed by those enrolled in the registry. The same questions (with minor adjustments to phrasing for pre/postpartum) were administered at each timepoint. The supplemental interviews included 19 questions relating to the participant's experience of pregnancy during the COVID-19 pandemic and their perceptions of how the pandemic might impact their delivery.

Study participants who had provided valid email addresses were also invited to complete an additional email questionnaire relating to their experiences of pregnancy during the COVID-19 pandemic, the ‘Perinatal COVID-19 Battery (PCB)’. The PCB included selected questions from the COVID-19 Participant Experience (COPE) survey [20], the Epidemic-Pandemic Impacts Inventory (EPII) [21], the Coronavirus Health Impact Survey (CRISIS) [22], the COVID Pregnancy and Birth Survey [23] and the Intolerance of Uncertainty Scale (IUS-12) [24]. Data collected through the interviews and email questionnaires were largely quantitative. Some qualitative data was gathered where free text expansion was offered, however this data was not analyzed within the current paper.

The interviews commenced in May 2020 and were administered to women who were up to three months post-partum and women who were pregnant. The questionnaire was emailed monthly from May 2020 to all women in the registry. For the current analysis, care and delivery questions from the first prepartum and first postpartum responses of women who were pregnant/gave birth in 2020 or up to February 2021 were considered. The supplemental interview questions and the PCB are included in the supplementary material.

2.3. Statistical analysis

Study data were collected and managed using the REDCap (Research Electronic Data Capture) electronic data capture tools, hosted by Partners HealthCare Research Computing, Enterprise Research Infrastructure and Services group. Data were transferred to SAS statistical software for analysis. Interview data were examined by time point and questionnaire data were divided into pre and postpartum responses. Frequencies and proportions for all responses were analyzed.

3. Results

3.1. Response rate

In total, 291 pregnant women were newly enrolled in the Registry during the study period (May 1, 2020 to February 7, 2021). These women, as well as those already enrolled in the registry who met inclusion criteria were invited to participate in this study. During the study period, supplemental interviews were offered to 291 individuals at the enrollment interview, 194 individuals at the seven-month interview and 206 individuals at the postpartum interview. In total, 639 supplemental COVID-19 interviews were completed by 477 women across the three registry visits. These included 275 COVID-19 interviews at enrollment (94.50% acceptance), 180 at seven months' gestation (92.78%) and 184
Demographic and diagnostic information for the 488 participants in this study is included in Table 1. The mean age among this group was 31.73 (SD 4.62, range 18–48 years). The majority of this sample (431 women, 88.50%) reported their race as ‘White or Caucasian’, described themselves as ‘Non-Hispanic or Latina’ (450 women, 92.78%) and were based in the US (478 women, 98.35%). US-based participants were resident in similar proportions across the Northeast, Midwest, South and West. Most of the women reported that they were married (381 women, 78.23%). The majority of respondents reported having completed some third-level education; 182 women (37.45%) reported having done ‘post graduate training’ and 174 women (35.80%) reported having a ‘Bachelor’s Degree’. In relation to insurance status, 371 women (76.18%) reported having private health insurance. Women self-reported their primary psychiatric diagnosis. The most common diagnoses were depression (n = 120, 24.64%), anxiety disorders (n = 119, 24.44%) and bipolar affective disorder (n = 99, 20.33%).

3.2. Demographics

Demographic and diagnostic information for the 488 participants in this study is included in Table 1. The mean age among this group was 31.73 (SD 4.62, range 18–48 years). The majority of this sample (431 women, 88.50%) reported their race as ‘White or Caucasian’, described themselves as ‘Non-Hispanic or Latina’ (450 women, 92.78%) and were based in the US (478 women, 98.35%). US-based participants were resident in similar proportions across the Northeast, Midwest, South and West. Most of the women reported that they were married (381 women, 78.23%). The majority of respondents reported having completed some third-level education; 182 women (37.45%) reported having done ‘post graduate training’ and 174 women (35.80%) reported having a ‘Bachelor’s Degree’. In relation to insurance status, 371 women (76.18%) reported having private health insurance. Women self-reported their primary psychiatric diagnosis. The most common diagnoses were depression (n = 120, 24.64%), anxiety disorders (n = 119, 24.44%) and bipolar affective disorder (n = 99, 20.33%).

3.3. COVID-19 supplemental interviews

Participants were asked whether there had been any change in their prenatal care and were offered prompts to consider, including problems with transportation, change in care setting, change in frequency or format of visits, or not being able to have a support person present at visits. One hundred and eighty-eight women (68.36%) interviewed at enrollment and 142 (78.89%) interviewed at seven months’ gestation reported a change in their prenatal care. Among women interviewed postpartum, 122 (66.67%) reported that there had been a change in their prenatal care. Interviewees were asked whether there had been any change in plan for their delivery and were prompted to consider factors such as changes in selected hospital and whether support persons would be allowed at the delivery. Changes to delivery plans were reported by 71 interviewees (25.82%) at enrollment and 98 (54.44%) at seven months. Of those interviewed postpartum, 124 (68.13%) indicated that there had been a change in their delivery plan. Interviewees were asked about whether there had been a change in plan for post-delivery support (e.g. family support). Among interviewees at enrollment, 81 (29.45%) reported such a change, as did 102 interviewees (57.30%) at seven months’ gestation. Among postpartum interviewees, 134 (73.63%) reported that there had been a change in their planned postpartum support.

Interviewees were asked whether members of their household had any comorbidities which might render them vulnerable to poor outcomes with COVID-19 infection. These included age, chronic respiratory disease, being a smoker or immunocompromised, serious cardiac disease, severe obesity, diabetes mellitus, chronic kidney disease or liver disease. All groups reported low frequencies of these comorbidities, with obesity, lung disease and smoking/immunosuppression being the most common household comorbidities (see supplementary material). Interviewees were asked to think about all the consequences of the disease pandemic on them and their household and to consider whether overall the pandemic effects had been positive or negative; these responses are outlined in Table 2. At all three timepoints, the majority reported the consequences to be ‘somewhat negative’.

Interviewees were then asked about what issues had prompted concern for them in relation to their perinatal care and caring for their baby during the pandemic. These questions and responses are outlined

### Table 1
Demographics and self-reported primary diagnoses of respondents.

| Demographic/Primary Diagnosis | Mean ± SD or N (%) |
|------------------------------|--------------------|
| Age                          | 31.73 ± 4.62       |
| Race                         |                    |
| American Indian or Alaska Native | 4 (0.82) |
| Black                        | 19 (3.90)          |
| Asian or Pacific Islander    | 14 (2.87)          |
| White                        | 431 (88.50)        |
| Other                        | 17 (3.49)          |
| Country/region of residence  |                    |
| United States                | 478 (98.35)        |
| US Northeast - 114           | (23.46)            |
| US Midwest - 116             | (23.87)            |
| US South - 135               | (27.78)            |
| US West - 113                | (23.25)            |
| Ethnicity                    |                    |
| Hispanic or Latino/Latina    | 34 (7.01)          |
| Marital status               |                    |
| Married                      | 381 (78.23)        |
| Separated or Divorced        | 9 (1.85)           |
| Never married                | 96 (19.71)         |
| Highest level of education   |                    |
| Some high school or high school diploma | 49 (10.08) |
| Some college                 | 58 (11.93)         |
| Associate’s degree           | 20 (4.12)          |
| Bachelor’s degree            | 174 (35.80)        |
| Postgraduate training        | 182 (37.45)        |
| Other                        | 3 (0.62)           |
| Insurance type               |                    |
| Private                      | 371 (76.18)        |
| Medicaid                     | 46 (9.45)          |
| Medicare                     | 22 (4.52)          |
| Tricare                      | 4 (0.82)           |
| Other public insurance       | 41 (8.42)          |
| No insurance                 | 2 (0.41)           |
| Primary diagnosis            |                    |
| Depression                   | 120 (24.64)        |
| Anxiety disorder             | 119 (24.44)        |
| Bipolar affective disorder   | 99 (20.33)         |
| Attention deficit disorder   | 61 (12.53)         |
| Other                        | 57 (11.70)         |
| Post-traumatic stress disorder | 11 (2.26)      |
| Obsessive compulsive disorder | 9 (1.85)        |
| Schizophrenia                | 3 (0.62)           |
| Schizoaffective disorder     | 6 (1.23)           |
| Psychosis                    | 2 (0.41)           |

### Table 2
Reported personal consequences of the COVID-19 pandemic.

| If you think about all of the consequences of the coronavirus disease pandemic on you and your household, would you say the disease for you and your family has been… | Enrollment interview ‘yes’ responses (275 interviews) N (%) | Seven months gestation interview ‘yes’ responses (180 interviews) N (%) | Post-partum interview ‘yes’ responses (184 interviews) N (%) |
|---------------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------|
| Very negative                                                                         | 30 (10.91)                                                 | 11 (6.11)                                                          | 30 (16.39)                                                      |
| Somewhat negative                                                                     | 151 (54.91)                                                | 112 (62.22)                                                        | 93 (50.82)                                                      |
| Not really negative or positive                                                        | 80 (29.09)                                                 | 44 (24.44)                                                         | 43 (23.50)                                                      |
| Somewhat positive                                                                     | 12 (4.36)                                                  | 12 (6.67)                                                          | 14 (7.65)                                                       |
| Very positive                                                                         | 2 (0.73)                                                   | 1 (0.56)                                                           | 3 (1.64)                                                        |
in Table 3. Notably, most women in this sample did not express concerns about access to basic supplies and reported only mild to moderate concerns about access to health care. Reported concerns were focused around the baby’s health, reduced support in caring for the baby and reduced access to positive social interactions.

3.4. Perinatal COVID-19 battery (PCB)

Questions relating to delivery in the PCB email questionnaire were answered by 230 prepartum women. Respondents were asked “How informed do you feel about the health risks of COVID-19 as they relate to your pregnancy and delivery?”. Most reported that they felt ‘slightly’ or ‘moderately’ informed. Questions relating to delivery in the PCB were answered by 62 postpartum women. Forty-six women (74.19%) reported that medical staff caring for them during labor and delivery were wearing full personal protective equipment (PPE). Of those that answered positively, most were ‘pleased/comforted’ or ‘not bothered’ by this. Just three women (4.84%) reported that their baby had been tested for COVID-19 and none reported that their baby had tested positive for the virus. Respondents were asked whether they felt the COVID-19 pandemic had impacted their ability or that of their family/friends to bond with the baby. Forty-two women (67.74%) indicated that the pandemic had ‘not at all’ impacted their own ability to bond with their baby. Respondents indicated that the pandemic had had a more pronounced impact on the ability of their family and friends to bond with their baby (Table 4).

4. Discussion

This observational study in which pregnant women with pre-existing psychiatric disorders were followed prospectively throughout pregnancy and the postpartum period found that among the sample of respondents to the COVID-related interviews and questionnaires, most of these women reported disruption, or planned changes, to their perinatal care due to the COVID-19 pandemic. The majority of women in this study reported that the overall consequences of the pandemic on their household had been negative. Most respondents felt somewhat uninformed about the risks posed by COVID-19 to their pregnancy and delivery, with just a quarter indicating that they felt very or extremely informed. Most women who had already delivered reported that medical staff had worn PPE during their delivery, with most feeling either neutral about this or reassured. Perhaps most significant among our findings are the concerns expressed about reduced postpartum support, and the reduction of positive social interactions and opportunities for family/friends to bond with the baby. Given that the risk of relapse of psychiatric disorders is already high in the postpartum period [25,26], it is concerning that the pandemic’s social restrictions may add further to this risk.

The fact that respondents in our study reported the overall consequences of the pandemic to be negative is in line with the limited current literature showing high levels of psychological distress among pregnant women with a history of mental health symptoms during the COVID-19 pandemic [13]. Our findings of disruptions to care due to the pandemic are in keeping with previous studies, which have reported reduced levels of medical support around breastfeeding [27], reduced in-person visits (and increased virtual visits) [14,15], reduced access to partner-support during delivery [16], reduced help-seeking behaviors [15] and reluctance to discuss mental health issues via virtual consultations [15]. Other studies have also identified increased stress and mental health symptoms associated with reduced social interactions and support postpartum [16,28] and that, conversely, higher levels of perceived support are associated with fewer psychological symptoms [28]. Access to outdoor space [29], physical activity [28] and other healthy lifestyle behaviors [29] have been identified as further sources of resilience for pregnant women during the pandemic.

Strengths of our study include that it is among the first to

| Table 3 | Issues of concern relating to the COVID-19 pandemic among interviewees. |
|---------|--------------------------------------------------|
| **Enrollment (275 interviews)** | **Seven months’ gestation (180 interviews)** | **Post-partum (184 interviews)** |
| How concerned are you about possible future changes to: | N (%) | N (%) | N (%) |
| **Your medical care during your baby’s birth as a result of the COVID-19 outbreak?** | | | |
| Highly concerned | 63 (22.99) | 35 (19.44) | N/A |
| Mildly/moderately concerned | 152 (55.47) | 94 (52.22) | |
| Not at all concerned | 59 (21.53) | 51 (28.33) | |
| **How you will care for your baby as a result of the COVID-19 outbreak?** | | | |
| Highly concerned | N/A | N/A | 42 (22.95) |
| Mildly/moderately concerned | 98 (53.55) | | |
| Not at all concerned | 43 (23.50) | | |
| **Support and involvement of your family and friends in your baby’s birth as a result of the COVID-19 outbreak?** | | | |
| Highly concerned | 79 (28.73) | 50 (27.78) | N/A |
| Mildly/moderately concerned | 134 (48.73) | 93 (51.67) | |
| Not at all concerned | 62 (22.55) | 37 (20.56) | |
| **Your baby’s health as a result of the COVID-19 outbreak?** | | | |
| Highly concerned | 83 (30.18) | 61 (33.89) | 41 (22.40) |
| Mildly/moderately concerned | 139 (50.55) | 84 (46.67) | 93 (50.82) |
| Not at all concerned | 53 (19.27) | 35 (19.44) | 49 (26.78) |
| **In general, what is the level of distress you have experienced about changes to your birth and newborn experiences due to COVID-19?** | | | |
| Highly concerned | 47 (17.28) | 31 (17.22) | 48 (26.23) |
| Mildly/moderately concerned | 165 (60.66) | 121 (67.22) | 87 (47.54) |
| Not at all concerned | 60 (22.06) | 28 (15.56) | 48 (26.23) |
| **How concerned are you about your family having reduced access to each of the following?** | | | |
| **Food or goods** | Highly concerned | 13 (4.73) | 7 (3.91) | 10 (5.46) |
| | Mildly/moderately concerned | 43 (15.64) | 32 (17.88) | 39 (21.31) |
| | Not at all concerned | 219 (79.64) | 140 (78.21) | 134 (73.22) |
| **Medicine and hygiene supplies** | Highly concerned | 16 (5.82) | 10 (5.56) | 9 (4.92) |
| | Mildly/moderately concerned | 58 (21.09) | 35 (19.44) | 45 (24.59) |
| | Not at all concerned | 201 (73.09) | 135 (75.00) | 129 (70.49) |
| **Baby supplies** | Highly concerned | 14 (5.09) | 12 (6.67) | 13 (7.10) |
| | Mildly/moderately concerned | 79 (23.86) | 47 (26.11) | 51 (27.87) |
| | Not at all concerned | 183 (66.55) | 121 (67.22) | 119 (65.03) |
| **Mental health care** | Highly concerned | 21 (7.64) | 10 (5.56) | 14 (7.69) |
| | Mildly/moderately concerned | 79 (28.73) | 44 (24.44) | 49 (26.92) |
| | Not at all concerned | 175 (63.64) | 126 (70.00) | 119 (65.38) |

(continued on next page)
We assessed these women at various time-points in the pre and post partum periods, and gathered both interview and survey data. Our study prospectively and longitudinally examine the impact of the COVID-19 pandemic on pregnant women with pre-existing psychiatric disorders. We assessed these women at various time-points in the pre and post partum periods, and gathered both interview and survey data. Our study was conducted during the height of the first wave of the pandemic in the US, when there were limited data regarding the impact of COVID-19 on pregnancy and when obstetric environments were particularly restrictive. Unlike many previous studies during the COVID-19 pandemic, this study focused on the experiences of those with pre-existing psychiatric disorders, rather than those reporting new mental health symptoms. For all participants we gathered a broad range of diagnostic, demographic and obstetric variables, giving us a comprehensive understanding of the cohort being studied.

Limitations of our study include that the majority of participants were white, non-Hispanic, married and had health insurance and high levels of education. They also indicated low levels of concern about access to basic needs and healthcare. Therefore, our findings may not be representative of the experiences of pregnant women with mental health conditions during the pandemic more generally; the experiences of pregnant women from more disadvantaged socioeconomic backgrounds may well have been more challenging. Further limitations include that not all questions were answered by all respondents; that some participants answered at all time points and others at fewer; that diagnoses recorded in the registry are self-reported; that willingness to respond could have been biased by factors like severity of illness or social circumstances; and that the registry includes pregnant women with psychiatric disorders who remain on psychotropic medications during pregnancy (and not those who discontinue medications and may have less severe illness). Additionally, the majority of women in this sample had self-reported diagnoses of anxiety, depression or bipolar affective disorder; women with schizophrenia-spectrum disorders were less represented in our sample and the experiences of these women may also have been more difficult. These data can however be seen as exploratory in understanding the pandemic’s impact on pregnant women with psychiatric disorders.

Some of our findings warrant further examination. Future studies could usefully examine the pandemic perinatal experiences of different diagnostic, racial and socioeconomic groups, particularly given the disparities observed among different socioeconomic groups to date [30,31]. It would also be of interest to study other data collected as part of this project, including the qualitative responses, as well as reports of positive behavioral changes and sources of resilience during the pandemic. Finally, future research could examine whether changes in rates of relapse, help-seeking behaviors and mental health service use among this group changed during the pandemic. A better understanding of how the pandemic has shaped the perinatal experiences of these women would help guide future care and resource allocation.

In conclusion, our findings suggest that the COVID-19 pandemic has had a negative impact on many pregnant women with pre-existing psychiatric disorders, particularly in relation to changes in care and perceived social support.

Disclosures
Anna Feeney: none.
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24 months.

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24 months.

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| Table 3 (continued) |
|----------------------|
| Enrollment (275 interviews) N (%) | Seven months’ gestation (180 interviews) N (%) | Post-partum (184 interviews) N (%) |
| General health care |
| Not at all concerned | Highly concerned | Mildly/moderately concerned |
| 15 (5.45) | 91 (33.09) | 169 (61.45) |
| 10 (5.56) | 51 (24.44) | 119 (70.00) |
| 11 (6.08) | 65 (35.91) | 105 (58.01) |
| Positive social interactions due to social distancing and/or quarantining |
| Not at all concerned | Highly concerned | Mildly/moderately concerned |
| 105 (38.46) | 132 (48.35) | 36 (13.19) |
| 58 (32.22) | 102 (56.67) | 20 (11.11) |
| 91 (49.73) | 72 (39.34) | 20 (10.93) |

Table 4
Responses relating to the impact of the COVID-19 pandemic on ability to bond with the baby.

| How informed do you feel about the health risks of COVID-19 as they relate to your pregnancy and delivery? (prepartum respondents) N (%) |
|---------------------------------------------------------------------------------------------------------------------------------|
| Not at all informed | Slightly informed | Moderately informed | Very informed | Extremely informed |
| 23 (11.33) | 60 (33.50) | 58 (28.57) | 38 (18.72) | 16 (7.88) |
| Were the medical staff caring for you during your labor and delivery wearing full personal protective equipment (PPE)(e.g. mask, gloves, eye protection)? (postpartum respondents) N (%) |
| Yes | No | Unsure |
| 46 (74.19) | 12 (19.35) | 4 (6.45) |
| If yes, how did you feel about this? N (%) |
| Distressed/afraid | Not bothered by it | Pleased/comforted | Other |
| 1 (2.13) | 25 (53.19) | 19 (40.43) | 2 (4.26) |
| Do you feel that your ability to bond with your baby has been impacted by COVID-19? N (%) |
| Not at all | Yes, slightly | Yes, moderately | Yes, very/extremely |
| 42 (67.74) | 11 (17.74) | 7 (11.29) | 2 (3.23) |
| Do you feel that your family or friends’ abilities to bond with your baby have been impacted by COVID-19? N (%) |
| Not at all | Yes, slightly | Yes, moderately | Yes, very/extremely |
| 0 (0.00) | 6 (9.68) | 8 (12.90) | 48 (77.42) |
Eliem, Sage; Independent Data Safety and Monitoring Committee: Janssen (Johnson& Johnson), Novartis; Steering Committee for Educational Activities: Medscape; educational activities: WebMD. Speaking/ Honoraria: None. Royalty/patent, other income: None.

Lee S. Cohen:
24 months.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jenhuspsych.2021.10.006.

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