BIRTH SATISFACTION DURING THE EARLY MONTHS OF THE COVID-19 PANDEMIC IN THE UNITED STATES

Elizabeth Mollard, PhD, CNM, WHNP, IBCLC, and Kevin Kupzyk, PhD

Abstract

Purpose: The purpose of this study was to describe birth satisfaction in women who gave birth in U.S. hospitals during the earliest months of the COVID-19 pandemic (March–July 2020).

Study Design and Methods: A cross-sectional survey of 747 postpartum women who gave birth in the United States during the early COVID-19 pandemic was conducted. Participants in the United States were recruited via social media. They completed a questionnaire that included demographic, health, and obstetric experience questions, and the Birth Satisfaction Scale-Revised. Descriptive statistics, t-tests, analysis of variance (ANOVA) models, and nonparametric correlations were performed.

Results: Higher birth satisfaction scores were associated with higher income, marriage, white race, vaginal birth, having a birth partner present, and sufficient support during birth. Factors negatively associated with birth satisfaction were separation from infant, unplanned cesarean birth, neonatal intensive care unit admission, hypertension, preeclampsia, hemorrhage, depression, and anxiety.

Clinical Implications: Presence of birth partners, sufficient birth support, and minimizing separation of mother and infant improve birth satisfaction. Obstetric complications, including unplanned cesarean birth, negatively affect birth satisfaction. There are racial disparities in birth satisfaction. It is critical to develop further interventions to end racism in maternal health care.

Key words: Birth; COVID-19; Maternal health; Patient satisfaction; Postpartum period.
Little is known about the satisfaction of women who gave birth during the COVID-19 pandemic. One study conducted in Italy showed that birth satisfaction was unchanged during the COVID pandemic compared with a prepandemic cohort, although there was an increase in obstetric interventions (Inversetti et al., 2021). Variables that were dissatisfiers both in and outside of a pandemic included epidurals, prolonged active labor, oxytocin, and cesarean birth (Inversetti et al.). Breman et al. (2021) reported patient dissatisfaction with restrictive hospital policies, changes in care, and miscommunication from healthcare providers to childbearing women among women giving birth in the United States early in the pandemic (March to June 2020). For women giving birth during the peak of the pandemic in New York City, COVID-19 positivity, and being a Black or Latina women were associated with lower birth satisfaction (Janevic et al., 2021). Our objective was to describe birth satisfaction in women who gave birth in U.S. hospitals during the earliest months of the COVID-19 pandemic.

**Background**

The COVID-19 pandemic has affected women’s birth experiences (Breman et al., 2021; Burgess et al., 2021). Women giving birth during the pandemic have shown a high likelihood of experiencing a traumatic birth, perinatal mental health disruption, and poor maternal-infant bonding (Hessami et al., 2020; Mayopoulos et al., 2021). During the earliest months of the pandemic, uncertainty about the COVID-19 virus led to severe and restrictive maternity care changes throughout the United States (Breman et al.; Burgess et al.; Davis-Floyd et al., 2020; Peña et al., 2020). To prioritize infection control, hospitals reduced or excluded support persons, required universal masking and COVID testing, excluded doulas as members of the healthcare team, separated infants from mothers with symptoms, modified immediate skin-to-skin contact and early initiation of breastfeeding practices, and encouraged early discharge (Bianco et al., 2020; Bornstein et al., 2020; Breman et al.; Del Rio et al., 2021; Peña et al.). Nurse-to-patient ratios were affected by the rise of COVID-19 patients throughout the hospital, and many nurses were forced to work longer hours and mandatory overtime (Grimm, 2021). Pain control options were affected by anesthesia provider availability and nitrous oxide discontinuation in some settings (Podovei et al., 2020).

Dramatic changes to the maternity care environment affected women’s abilities to make autonomous decisions about their birth and altered their perceptions of safety (Mollard & Wittmaack, 2021). By midsummer of 2020, clinicians, researchers, and other maternal health advocates demanded that, despite necessary restrictions called for by the pandemic, women’s human rights must still be prioritized through respectful maternity care practices (Reingold et al., 2020).

**Birth Satisfaction**

A satisfying birth experience begins a positive trajectory for the mother-infant dyad. Women with satisfying birth experiences feel empowered by childbirth, report higher self-esteem, and are more likely to confidently engage in health-promoting behaviors like breastfeeding (Hinic, 2017). A negative birth experience is associated with impaired maternal-infant bonding and adverse psychological effects, including depression and posttraumatic stress disorder (Bell & Andersson, 2016; Chabbert et al., 2021). A woman’s experience with birth occurring in the hospital affects her long-term perceptions of and future interactions with the healthcare system.

A woman’s satisfaction with her birth is multifaceted and personal (Martin & Fleming, 2011). Birth satisfaction is affected by previous life experiences, culture, education, and temperament. Birth satisfaction is affected by stress levels and preparation for childbirth (Hinic, 2017; Miron-Shatz & Konheim-Kalkstein, 2020). Birth dissatisfaction has been associated with obstetric interventions and complications during birth including emergency cesarean birth, postpartum hemorrhage, instrumental birth, and poor infant status (Falk et al., 2019).

**Study Design and Methods**

We conducted a cross-sectional survey of postpartum women who gave birth in the United States during the first 5 months of the COVID-19 pandemic.

**Sample**

Inclusion criteria were women 18 years of age or older, who gave birth in a U.S. hospital after March 1, 2020, who could read and write in English.

**Recruitment**

To recruit participants, we created a Facebook page for the study. From this page, we created advertising posts (Figures 1-2 Supplemental Digital Content at http://links.lww.com/MCN/A73) and paid $540 to have the posts “boosted” on
Facebook and Instagram. We selected our audience to include; Location: Living in the United States, Age: 18–43, Gender: Female; People Who Match Interests: Parents: New Parents. Posts also were shared by groups and individuals on social media.

**Procedures**

Before beginning the study, minimum sample size was determined to be 385 participants. This number was calculated using the Qualtrics survey research sample size calculator (Qualtrics, Provo, UT) using number of women who gave birth in the United States in the most recent year with published data (Martin et al., 2019). Sample size was calculated with a confidence level of 95% and a 5% margin of error.

Institutional Review Board approval was obtained and participants were recruited to complete the questionnaire hosted on the secure REDCap platform. After informed consent was obtained, participants reported demographic and health information (e.g., diabetes, hypertension), questions about obstetric history (e.g., birth method, obstetric complications like shoulder dystocia), if they had a support person present, whether they felt they had enough birth support, if they were separated from their infant, information about their infant such as if the infant was admitted to the neonatal intensive care unit (NICU), and the 10-item Birth Satisfaction Scale-Revised.

### Table 1. Demographics and Descriptive Data of Participants (*N* = 747)

| Marital Status              | *N* | Percent |
|-----------------------------|-----|---------|
| Married                     | 612 | 81.9    |
| Divorced or separated       | 5   | 0.6     |
| Single (never married)      | 34  | 4.6     |
| Widowed                     | 1   | 0.1     |
| Committed relationship      | 95  | 12.7    |

| Race/Ethnicity              | N   | Percent |
|-----------------------------|-----|---------|
| White, non-Hispanic         | 641 | 85.8    |
| Black, non-Hispanic         | 11  | 1.5     |
| Asian                       | 19  | 2.5     |
| Hispanic                    | 63  | 8.4     |
| Other                       | 13  | 1.7     |

| Education                   | *N* | Percent |
|-----------------------------|-----|---------|
| 9–11th grade                | 8   | 1.1     |
| High school graduate/GED    | 81  | 10.8    |
| Vocational/Technical school | 25  | 3.3     |
| Associate degree/some college | 141 | 18.9 |
| Bachelor’s degree           | 251 | 33.6    |
| Advanced degree             | 241 | 32.3    |

| Employment Status           | *N* | Percent |
|-----------------------------|-----|---------|
| Full-time                   | 370 | 49.5    |
| Part-time                   | 68  | 9.1     |
| Not employed                | 309 | 41.4    |

| Household Income            | *N* | Percent |
|-----------------------------|-----|---------|
| Less than $30,000           | 89  | 11.9    |
| $30,001–$50,000             | 107 | 14.3    |
| $50,001–$70,000             | 122 | 16.3    |
| $70,001–$100,000            | 176 | 23.6    |
| Greater than $100,000       | 253 | 33.9    |

| Type of Birth               |    | Percent |
|-----------------------------|----|---------|
| Vaginal                     | 523| 70      |
| Planned cesarean            | 96 | 12.9    |
| Unplanned cesarean          | 128| 17.1    |

|                  | Mean | SD  |
|------------------|------|-----|
| Age              | 30   | 4.9 |
| Birth Satisfaction Scale Total | 27.8 | 6.5 |
| BSSR—Labor-related Stress | 9.9  | 3.4 |
| BSSR—Women’s Personal Attributes | 4.5  | 2.2 |
| BSSR—Quality of Care | 13.5 | 2.5 |

Relationships between BSS-R outcomes and key demographic and birth-related variables were assessed using *t*-tests and analysis of variance (ANOVA) models.
Results
Between May and July 2020, the paid advertisements reached 73,696 people and 6,497 people engaged with (read) the ads. Of those, 1,622 women clicked on the REDCap survey link and 885 postpartum women aged 18–43 who gave birth between March 1 and July 9, 2020 participated in the study. This number far exceeded the required minimum sample size due to success of the paid ads. There was at least one participant from each U.S. state and there were no oversampled regions. The BSS-R come was associated with higher BSS-R (rs = .137, p < .01), quality-of-care (rs = .108, p = .031), labor-related stress (rs = .077, p < .05), and women’s personal attributes (rs = .127, p < .01). Table 2 shows how employment, marital status, and race were associated with birth satisfaction in our study.

Discussion
We conducted a cross-sectional study of 747 postpartum women who gave birth in U.S. hospitals during the first 5 months of the COVID-19 pandemic to describe birth satisfaction during this unprecedented time. We found relationships between birth satisfaction and demographics, maternal health, and birth experience.

Demographics
Demographic variables associated with birth satisfaction in our study were higher income, marriage, and white race. White and married women tended to have higher overall birth satisfaction on all scales except labor-related stress. Education and employment were not associated with overall birth satisfaction.

Our findings differ from Hinic (2017), which found no difference between BSS-R scores and participant demographic factors. Employment was unstable during the time of study, and...
though employment and education were not related to overall BSS-R, they were related to lower women's personal attributes scores. This may mean that education and employment improve inherent traits like confidence and preparedness, which may transfer to a more satisfying birth (Miron-Shatz & Konheim-Kalkstein, 2020).

Women of color had lower birth satisfaction in our study, similarly to Breman et al. (2021) and Janevic et al. (2021) who found that Black and Latina women had reduced birth satisfaction during the COVID-19 pandemic. These findings are consistent with Hamm et al. (2019) that previously reported racial disparities in birth satisfaction. In addition to the ongoing racial health disparities in maternal health, women of color were disproportionately affected by COVID-19 as well as tension occurring throughout the United States related to systemic racism during the study period (Jones, 2021; Woodworth et al., 2020).

Maternal Health
Maternal health complications can affect a woman’s birth experience. Unlike in Janevic et al. (2021), COVID-19 positivity was not related to overall birth satisfaction in our study, although our sample of COVID-positive individuals was relatively small. This may indicate that though having the COVID-19 infection causes stress and affects other outcomes, the overall birth experience can still be preserved when a woman is ill.

Other maternal health factors that were negatively associated with birth satisfaction were hypertension, preeclampsia, hemorrhage, depression, and anxiety. Hypertension, preeclampsia, and hemorrhage were not related to quality-of-care scores in our study which may indicate that care intensity increases when serious medical events occur, thus not affecting quality-of-care satisfaction scores. Women’s self-identified depression or anxiety was associated with lower overall birth satisfaction and lower subscale scores. Previous research has shown relationships between depression and anxiety and lower birth satisfaction (Bell & Andersson, 2016).

Birth Experience
Having a birth partner present, perception of sufficient support during birth, and vaginal birth were associated with improved birth satisfaction. Birth experience variables negatively associated with birth satisfaction included unplanned cesarean birth, separation from infant, and NICU admission.

The average BSS-R total score was lowest among women who gave birth without a birth partner (M = 22.1, SD = 6.1) when compared with all other variables in our study. Women in our study who had no birth partner present or felt they had insufficient support had lower overall birth satisfaction and lower subscales relative to those who had a partner or felt supported. Support has been associated with birth satisfaction in previous work; however, policies that limited partners and other support due to the pandemic may have made this issue more widespread (Attanasio et al., 2014).

Women who were separated from their infant or had an infant admitted to the NICU had lower birth satisfaction and lower scores on all subscales. Previous literature

### TABLE 3. BIRTH SATISFACTION BY BIRTH TYPE

| Measure          | Birth type | N  | Mean | SD  | F-Test        | V vs. PC | V vs. UC | PC vs. UC |
|------------------|------------|----|------|-----|---------------|----------|----------|-----------|
| **BSS-R**        | V          | 523| 28.6 | 6.5 | F(2, 744) = 31.61, p < .001 | 0.941    | <.001    | <.001     |
|                  | PC         | 96 | 28.4 | 5.8 |               |          |          |           |
|                  | UC         | 128| 23.8 | 5.7 |               |          |          |           |
| **LRS**          | V          | 523| 10.2 | 3.4 | F(2, 744) = 33.19, p < .001 | 0.309    | <.001    | <.001     |
|                  | PC         | 96 | 10.7 | 2.9 |               |          |          |           |
|                  | UC         | 128| 7.7  | 2.9 |               |          |          |           |
| **WPA**          | V          | 523| 4.8  | 2.1 | F(2, 744) = 33.86, p < .001 | 0.008    | <.001    | 0.002     |
|                  | PC         | 96 | 4.1  | 2.1 |               |          |          |           |
|                  | UC         | 128| 3.2  | 2.0 |               |          |          |           |
| **QOC**          | V          | 523| 13.6 | 2.5 | F(2, 744) = 4.52, p = .011 | 0.973    | 0.008    | 0.113     |
|                  | PC         | 96 | 13.6 | 1.9 |               |          |          |           |
|                  | UC         | 128| 12.9 | 2.8 |               |          |          |           |

Note. V = vaginal birth; PC = planned cesarean birth; UC = unplanned cesarean birth; BSS-R = Birth Satisfaction Scale Revised; LRS = Labor Related Stress Subscale; WPA = Women’s personal attributes subscale; QOC = Quality of care subscale.
supports that immediate contact with the newborn is an important variable for birth satisfaction (Hinic, 2017; Kahalon et al., 2021; Martin & Fleming, 2011). Of note is that our study had a high number of infants admitted to the NICU (15.5%) relative to the most recent data on average NICU admission in 2019 (9.3%; Martin et al., 2021). Although maternal infant separation and NICU admission have been shown to affect birth satisfaction prior to our study, these may have been more common occurrences during the pandemic (Reingold et al., 2020).

Similar to previous research including Inversetti et al. (2021) who studied birthing women during the pandemic, our findings showed that women who had a vaginal birth had higher birth satisfaction on all subscales and overall, in contrast to women with an unplanned cesarean birth (Falk et al., 2019; Hamm et al., 2019; Kahalon et al., 2021; Karlström, 2017). Hamm et al. (2019) found that cesarean birth resulted in women being three times more likely to be unsatisfied than those who had a vaginal birth. Not all birth satisfaction studies have shown differences in birth satisfaction by birth modality, so it is possible that having a cesarean birth during the pandemic was more dissatisfying for women (Barbosa-Leiker et al., 2015; Hinic, 2017). Cesarean birth increases medical complexity and length of hospital stay which was a concern during the early months of the pandemic and may have affected women’s experiences (Bornstein et al., 2020). Although women with a planned cesarean had lower BSS-R scores than women with a vaginal birth, they had slightly better labor-related stress scores. This is perhaps related to the controlled circumstances of a planned cesarean, which may not have been altered relative to prepandemic practices (e.g., all personnel mask in the operating room).

Limitations and Future Research
This study was limited by the cross-sectional retrospective design, participant self-selection, social media recruitment, and lack of diversity in participants. Lack of racial diversity limited the analyses. Providing the survey in English limited our sample to English-speaking participants. Due to the large sample size, we were more likely to find statistically significant differences between variables. Many of our results may have been unrelated to the pandemic. Future research should focus on prospective and longitudinal designs and use a sample more representative of the general population.

Clinical Implications
Like nearly every other element of human life, birthing environments were affected by the COVID-19 pandemic. The COVID-19 pandemic changed the experience of birthing for women and made it challenging for nurses working in maternity care units. Even in pandemic conditions, labor support remains critical to birth satisfaction. Our findings support the negative impact of obstetric and neonatal complications on birth satisfaction, which may have been compounded by the difficulties of giving birth in a hospital during the pandemic.

Although our sample was not representatively diverse, our results showed racial disparities in birth satisfaction. This adds to the large body of research indicating that women of color are experiencing racial disparities in every facet of maternal health care. Women of color were disproportionately affected by COVID-19, exacerbating preexisting racial maternal health disparities. Further work needs to be done to end racism and promote an equal, high-quality birth experience for women of color, which will in turn promote birth satisfaction.

Pandemic-related maternity care should include the safe presence of birth partners and other support structures including doulas. Staffing ratios for nurses, midwives, and physicians should remain adequate even during a pandemic to ensure patients have access to the support and health care they desire or need. Although it was more common to separate infants from mothers early in the pandemic for potential symptoms of COVID-19, this was largely discontinued, and maternity care units should continue to advocate for mother infant togetherness when possible (Reingold et al., 2020).

Evidence-based initiatives to reduce cesarean birth, such as the Supporting Vaginal Birth Collaborative, should be implemented in hospitals and continue to be promoted throughout a pandemic (Rosenstein et al., 2021). Overall, best practices in maternal and infant care should continue during a pandemic with only minor modifications to reduce infection transmission.

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Elizabeth Mollard, Assistant Professor, University of Nebraska Medical Center, College of Nursing – Lincoln Division, Lincoln, NE. Dr. Mollard can be reached via email at Elizabeth.Mollard@ummc.edu
