RESEARCH ARTICLE

The Joys and Frustrations of Breastfeeding and Rooming-In Among Mothers With Opioid Use Disorder: A Qualitative Study

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ABSTRACT

OBJECTIVES: To investigate perspectives of mothers with opioid use disorder regarding breastfeeding and rooming-in during the birth hospitalization and identify facilitators and barriers.

METHODS: We conducted in-depth qualitative interviews with 25 mothers with opioid use disorder 1–12 weeks after delivery. Grounded theory analysis was used until thematic saturation was reached. Findings were triangulated, with experts in the field and a subset of informants themselves, to ensure data reliability.

RESULTS: Among 25 infant-mother dyads, 36% of infants required pharmacologic treatment, 72% of mothers initiated breastfeeding, and 40% continued until discharge. We identified the following themes: (1) information drives maternal feeding choice; (2) the hospital environment is both a source of support and tension for mothers exerting autonomy in the care of their infants; (3) opioid withdrawal symptoms negatively impact breastfeeding; (4) internal and external stigma negatively impact mothers' self-efficacy; (5) mothers' histories of abuse and trauma affect their feeding choice and bonding; (6) mothers' recovery makes caring for their infants emotionally and logistically challenging; and (7) having an infant is a source of resilience and provides a sense of purpose for mothers on their path of recovery.

CONCLUSIONS: Future interventions aimed at increasing breastfeeding and rooming-in during the birth hospitalization should focus on education regarding the benefits of breastfeeding and rooming-in, supporting mothers' autonomy in caring for their infants, minimizing stigma, and maximizing resilience.

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In the past decade, there has been a significant increase in the prevalence of pregnant women with opioid use disorder (OUD) in the United States and an associated rise in the incidence of neonatal abstinence syndrome (NAS).[1,2] NAS is defined as signs and symptoms of withdrawal that infants develop after in utero exposure to opioids.[3] Nonpharmacologic care, including breastfeeding and rooming-in, are recommended as first-line treatments for NAS during the birth hospitalization[4] and are associated with a reduction in pharmacologic treatment and shorter hospitalizations.[5]

Breastfeeding optimizes opportunities for bonding and has been shown to decrease rates of pharmacologic treatment and length of hospitalization in infants with opioid exposure.[5] Despite this, breastfeeding initiation and continuation among mothers with OUD is markedly lower than that in mothers without OUD.[6] There is limited research on the reasons for this disparity. In a recent qualitative study of 8 mothers with OUD that was focused on infant feeding decisions, the authors found that what mothers had heard about breastfeeding and their beliefs on how their breast milk impacted their infant's health influenced their decision to breastfeed.[7] The barriers and facilitators mothers faced while breastfeeding during the hospitalization was not addressed in this study. Additionally, a descriptive survey study of 30 mothers with OUD revealed that barriers to breastfeeding included lack of education by health providers and mother-infant separation that occurred when infants were cared for in the NICU.[8] A facilitator was intent to breastfeed before or during pregnancy.[8] Because this survey study had only 3 open-ended questions, the depth of the perspectives of mothers with OUD was difficult to assess. Infants with NAS may also have difficulty latching on to the breast,[9,10] and women with OUD experience stigma by health care providers[11,12]; however, the extent to which these issues may impact breastfeeding success among mothers with OUD is poorly understood.

Rooming-in is defined as parent cohabitation with a hospitalized infant, and has been associated with higher rates of breastfeeding, maternal involvement in care, maternal satisfaction, decreased rates of pharmacologic treatment, and shortened hosptializations.[13] In settings where rooming-in is available, the barriers and facilitators to being at the bedside have not been well explored. In a single qualitative study of families of infants with NAS, the authors reported that the physical environment, transportation issues, and mothers' medical needs impacted rooming-in.[14] This study was performed at a large academic center in a rural area at a time when infants with NAS who received pharmacologic treatment were removed from their mothers' rooms and cared for in an open-layout NICU.[14] Mothers' experiences with rooming-in within different models of NAS care (in which infants do not routinely receive treatment in the NICU) or mothers living in urban settings have not been explored.

Promotion of nonpharmacologic treatment, including breastfeeding and rooming-in for infants with opioid exposure is a public health priority.[15] To develop effective interventions, a better understanding of the barriers and facilitators to breastfeeding and rooming-in is critical. The purpose of this study was to explore the perspectives of mothers with OUD regarding breastfeeding and rooming-in during the birth hospitalization and identify perceptions of facilitators and barriers to these practices.

METHODS

Setting and Participants

We interviewed mothers who were cared for at a large urban safety-net hospital. More than 95% of mothers with OUD who were cared for in this institution received prenatal care at a multidisciplinary prenatal program with obstetrical care, addiction treatment, and mental health services, and 90% were of non-Hispanic white race and ethnicity. Mother-infant dyads with opioid exposure were initially cared for in single-family rooms in the mother-infant unit. If infants required pharmacologic treatment, they were cared for in a central nursery space to allow for cardiac monitoring. When mothers were discharged, infants were transferred to the general pediatrics unit for on-going care, which required 2 patients per room (regardless of need for pharmacologic treatment) and included a bed available for 1 parent to room in. Our institution initiated the eat, sleep, console model of care for infants with NAS in 2016. Since that time, the rate of pharmacologic treatment has been 40%.[16] Our institution has maintained Baby-Friendly designation, as defined by the World Health Organization, since 1999.[17]

In-depth interviews occurred from June 2017 to June 2018. Mothers were approached for participation during the postpartum hospitalization if they met the following study eligibility criteria: (1) English speaking, (2) receipt of medication treatment of OUD with methadone or buprenorphine during pregnancy, (3) eligibility to breastfeed per hospital criteria (negative urine toxicology screen on admission to labor and delivery and, enrollment in a treatment program with adequate prenatal care at least 4 weeks before birth, and absence of extreme social circumstances in which social services maintained custody of the infant at the time of discharge), and (4) infants ≥36 weeks' gestation and medically stable (no hemodynamic instability or need for respiratory support). Interviews occurred 1 to 12 weeks after delivery either during the birth hospitalization, at pediatric clinic visits, or by phone. Mothers received a $30 gift card as an incentive for participation. Enrollment continued until thematic saturation was reached. The institutional review board deemed this study exempt.

Data Collection

In-depth, semistructured interviews were conducted by 2 study team members (M.B.H. and E.M.L.). Interviews lasted 30 to 45 minutes; they were audiotaped and transcribed verbatim. An interview guide consisted of questions and topics based on existing literature (Table 1). Questions were asked in an open-ended format, and the question guide was revised throughout the interview process. Questions regarding mothers' stressors, previous life experiences, symptoms of withdrawal, and

TABLE 1 Probe Questions

	Question
General parenting	Tell me what parenting has been like since your infant was born; what are your fears about parenting?[a] How are you taking care of yourself and the infant? How does taking care of your infant make you feel as a mother in recovery?[a] How has the experience of having an infant compares with other stressful life experiences for you?[a]
Feeding	Feeding infants is a really important part of taking care of them. How has feeding your infant been? Are you breastfeeding or giving formula to your infant? Can you tell me how you came to that decision? We are interested in knowing how mothers learned about breastfeeding. Can you tell me where you learned about breastfeeding? Do you feel that your infant's withdrawal affected his or her ability to be breastfed or formula fed?[a] What has helped you with breastfeeding or formula feeding your infant? What has made it hard to breastfeed or formula feed your infant? (For mothers who are breastfeeding): Our team is doing these interviews so that we can learn new ways to help mothers with their breastfeeding in the future. Are there things that you think would have helped you with your breastfeeding?
Maternal involvement in care and rooming-in	What is (or was) it like when your infant was staying in the same room as you in the hospital? What made it hard or easy? If you were to imagine an ideal environment for caring for your infant in the hospital, what would it look like to you? What have your interactions with the health care team been like while in the hospital?[a]

[a] Added during iterative data analysis.

interactions with the health care team were added over the course of the study to better elaborate on emerging themes. Descriptive demographic and health data were abstracted from the medical record.

Data Analysis

A grounded theory analysis was used to build on theories from the data through an iterative process of systematic data collection and analysis.[18,19] Each transcript was reviewed by investigators (M.B.H., M.G.P., and E.W.) with expertise in breastfeeding and the care of infants born to mothers with OUD. During the review of the initial transcripts, each reviewer developed a list of codes. The coding structure was discussed and revised as a group before the independent coding of future transcripts. The team met at regular intervals to discuss findings, refine interview questions, and monitor for thematic saturation. To maximize the reliability of the analysis, 2 members of the group reviewed each transcript independently. Disagreements were resolved through discussion. Data collection ended when the group established a set of themes and no new themes were identified. Transcripts were sorted into coded passages by using NVivo software.[20]

In addition to investigator triangulation, as described above, the team ensured data reliability by expert triangulation,[21] whereby experts reviewed the study methodology, coding, and results. Experts were convened on 2 separate occasions and included general pediatricians, neonatologists, an obstetrician, lactation consultants, nurses, and social workers who interact frequently with mothers with OUD during pregnancy and the birth hospitalization as well as pediatric health services researchers with expertise in qualitative analysis. Member checking[21] was also performed, whereby findings were communicated to a subset of mothers to ensure their accuracy and intended meaning.

RESULTS

Participant characteristics are summarized in Table 2. Thirty-six percent of infants received pharmacologic therapy and the median length of hospitalization was 8 days (interquartile range [IQR]: 7–22 days). Among mothers, 100% were of non-Hispanic white race and ethnicity, and the median age was 29 years (IQR: 24–34 years); 60% received methadone and 40% received buprenorphine as an opioid agonist therapy during pregnancy. Seventy-two percent of mothers initiated breastfeeding and 40% continued until discharge. Main themes and subthemes are displayed in Table 3.

Theme 1: Information Drives Maternal Feeding Choice

Mothers reported that information they received about the benefits and risks of breastfeeding for mother-infant dyads exposed to opioids during pregnancy influenced their feeding choice. Information about breastfeeding reported by mothers was both medically accurate and inaccurate. Some mothers reported that they chose to breastfeed because they heard that breastfeeding reduces the severity of the infant's withdrawal and may prevent the need for pharmacologic treatment (representing medically accurate information). Other mothers reported a decision to formula feed because they heard that transmission of methadone or buprenorphine through breastfeeding may increase the severity of infant withdrawal, or mothers reported the inability to breastfeed with hepatitis C (representing medically inaccurate information). Mothers received information from a variety of sources, including pre- and postnatal health care providers; employees of the Supplemental Nutrition Program for Women, Infants, and Children; family; and the media. Both medically accurate and inaccurate information were reported from all sources. Additionally, some mothers commented that they received information about the benefits and role of breastfeeding from health care providers but not the technical aspects of pumping, engorgement, and latching before delivery, which would have been helpful.

Theme 2: The Hospital Environment Is Both a Source of Support and Tension for Mothers Exerting Autonomy in the Care of Their Infants

Many mothers with OUD described the hospital environment as highly supportive and enabling of their ability to feed and care for their infants. Mothers reported that doctors, nurses, and lactation consultants were helpful with technical aspects of feeding care (ie, using a pump and infant latching on to the breast), explaining the medical needs of infants with symptoms of NAS, and providing emotional support.

TABLE 2 Characteristics of 25 Mother-Infant Pairs

Characteristics	Results
Infant	
Gestational age at birth, wk (%)	39 (5)
Length of hospitalization, d (%)	8 (19)
Received pharmacologic treatment, *n* (%)	9 (36)
Age at time of interview, wk (%)	7 (8)
Mother	
Maternal age, y, median (IQR)	29 (24–34)
Non-Hispanic white race and ethnicity, *n* (%)	25 (100)
Delivery mode, *n* (%)	
Vaginal	16 (64)
Cesarean	9 (36)
Opioid agonist treatment during pregnancy, *n* (%)	
Methadone	16 (64)
Buprenorphine	10 (40)
Psychiatric medications during pregnancy, *n* (%)	10 (40)
Hepatitis C–positive, *n* (%)	13 (52)
Nicotine smoking in third trimester, *n* (%)	14 (56)
Initiated breastfeeding, *n* (%)	18 (72)
Continued breastfeeding until 24 h before discharge, *n* (%)	10 (40)

Mothers described the physical environment of the hospital, when single rooms were available for the infant to be in the same room as the mother, as ideal.

Other mothers reported that the hospital environment was a source of tension that undermined autonomy. Mothers felt that their perspectives were not always acknowledged by health providers. They reported frustrations due to disagreements with providers' view of the subjective signs of infant withdrawal or with decisions made about their infants' care. In situations in which the infants had to be separated temporarily from their mothers for cardiac monitoring while receiving opioid medication, mothers had significant concerns that their infants were not being cared for as they would have wanted. Mothers reported a lack of privacy when they had to share rooms with another family, which negatively impacted mothers' perceived comfort. Finally, mothers commented that the shared rooms made it noisier, which worsened their infants' withdrawal. They noted a lack of comfortable furniture for breastfeeding and doing skin-to-skin care, particularly when recovering from a cesarean delivery.

Theme 3: Opioid Withdrawal Symptoms Negatively Impact Breastfeeding

Mothers reported that difficulty in infant latching, resulting from oral-motor dysregulation (a common symptom of infant opioid withdrawal), negatively impacted breastfeeding success. This made mothers feel stressed, frustrated, and defeated. The majority of infants in the study received formula supplementation because of concerns for weight loss, which, for some mothers, diminished the perceived benefits of exclusive breastfeeding. Mothers felt uninformed and surprised that infant formula supplementation would be needed, and overall, formula supplementation made breastfeeding mothers feel defeated and discouraged.

Theme 4: Feelings of Internal and External Stigma Negatively Impact Mothers' Self-Efficacy

Some mothers expressed internal guilt and shame that their infants' withdrawal and need for prolonged hospitalization occurred because of their history of opioid use. This impacted mothers' ability to exhibit self-efficacy and confidence in caring for their infants.

Mothers had a heightened awareness that external stigmatization among hospital staff may occur. In several instances, it did occur, and mothers said that staff members attended to their infants less often, communicated less, and were more stringent in enforcing hospital rules because of their addiction histories. Perception of unequal treatment made mothers feel frustrated, anxious, and stressed. Conversely, when staff members were not judgmental and treated the mothers as equals, mothers felt respected and empowered, and this greatly enhanced their confidence in caring for their infants. Mothers felt fortunate and grateful toward staff members in these situations.

Theme 5: Mothers' Histories of Abuse and Trauma Affect Their Feeding Choice and Bonding

Mothers with OUD described past traumatic experiences that impacted their ability to care for their infants. Mothers described histories of sexual abuse and trauma that guided decisions not to breastfeed. One mother said that the physical act of breastfeeding incited past emotions related to sexual trauma. Histories of trauma also affected how mothers bonded with their newborns. Mothers described previous stressful experiences that were relived with having a newborn. One mother described great fear and anxiety in caring for her infant because of a worry that the infant would be removed from her custody, as experienced with her previous children.

Theme 6: Mothers' Own Recovery Makes Infant Care Emotionally and Logistically Challenging

Mothers also talked about specific aspects of their own recovery that made it more difficult for them to care for their infants. Mothers had to leave the hospital to travel to methadone clinics for hours a day and visit their own health care providers. These competing demands significantly impacted mothers' ability to be present at the bedside during the hospitalization. Mothers were stressed and anxious about this. Some mothers expressed worry that they may develop postpartum depression and that this would impact caring for their infants.

Theme 7: Having an Infant Is a Source of Resilience and Provides a Sense of Purpose for Mothers on Their Path to Recovery

Mothers noted the positive impact that having an infant had on their self-esteem and motivation to continue on their recovery. Caring for their infant gave mothers a sense of purpose. Related emotions of comfort, bonding, and joy also served as a source of motivation for these mothers to breastfeed and room in.

DISCUSSION

In this qualitative study, we provide insights into the perspectives of mothers with OUD during the birth hospitalization and identify

TABLE 3 Themes and Subthemes

Themes and Subthemes	Interview Quotes
Information drives maternal feeding choice	
Medically accurate information	"The OBGYN doctor said it would help the withdrawal…. I wanted to do anything extra that I could do to help her…so I breastfed her."
Medically inaccurate information	"I do not breastfeed because of babies being on methadone, or Subutex. It gets inside of the breast…. If he's already detoxed, and you get it done and over with, why would I give him breastmilk that has methadone or whatever left inside of it, so he has to detox later on?"
The hospital environment is both a source of support and tension for mothers exerting autonomy in the care of their infants	
Supportive staff	"It really makes me feel good, too, that, like, the doctors and the nurses have told me I've been doing, like, their words were, 'A phenomenal job.' And then, the doctor said that, you know, he does perfect when he's with me, and then, he's like, she's the one that said it, she was like, 'He's perfect when he's with you, which means you're doing a phenomenal job.'"
Supportive physical environment	"The dim lighting, the skin to skin, me getting to hold him a lot, being in the room with him, I get to sing to him, he gets that bond with me early on, and I'm able to comfort him a lot better than I would be if he was just in the NICU."
Unsupportive staff	"I want the best for my baby, so when they're not taking my wishes into consideration, it's just kind of, like, disheartening"; "I did feel judged, and I did feel like they implemented the rules strictly with me, but with that other family, it was a little more flexible. Why? It shouldn't be like that. It was really hurtful."
Unsupportive physical environment	"He's not being, like, held enough in the nursery"; "Comfortability was a little off because we shared the room, and I get along with most people, but the person that we had around was not very pleasant."
Opioid withdrawal symptoms negatively impact breastfeeding	
Difficulty latching	"He would latch, and he would suck, but it would be intermittent; it wasn't regular. And then, it started slowly deteriorating after that. … He was on the bottle; he didn't even want my breast anymore. So, that was, like, really upsetting, and I cried"; "I wish I could have done breastfeeding. When I was in the hospital, it took 1 time of using the bottle, and after that 1 time, it seemed like it was a lot harder for her to latch on."
Formula supplementation for weight loss	"Even if I did a perfect job breastfeeding…he would need supplementation"; "What's the point if they are going to add formula to my breastmilk?"
Feelings of failure	"You feel defeated"; "I tried my best and couldn't do it. I bawled my eyes out. I felt like a failure"; "He just didn't want my breast anymore; I felt awful. It was really upsetting, and I cried."
Feelings of internal and external stigma negatively impact mothers' self-efficacy	
Internal	"It's my fault she's like this"; "I was crying my eyes out…. I felt so guilty that my daughter had to go over there in the first place."
External	"It's not a good feeling when you know you're being judged by the people who are supposed to help you"; "The mother being treated with respect is very important because she needs to believe in herself so she can take care of the baby."
Mothers' histories of abuse and trauma affect their feeding choice and bonding	
Sexual abuse	"It [deciding not to breastfeed] has to do with me being molested as a kid. I just don't like being touched up there"; "Of course being abused affects how willing you are to breastfeed."
History of trauma	"You're traumatized, and there's just no way you're going to be able to breastfeed"; "I've been through hell, and there's no way that doesn't affect how I deal with the stress of having a baby"; "I know what it is like to be cold and alone, and I never want him to feel that way"; "I couldn't spend time with my older son when he was a baby…. He was taken away. I worry about the same thing happening again"; "The stress of it impacts our parenting, and it is a snowball effect."

TABLE 3 Continued

Themes and Subthemes	Interview Quotes
Mothers' recovery makes caring for their infants emotionally and logistically challenging	"Because you're dealing with your own addiction, and you're dealing with your own problems…but then again, I am a mother, and I chose to have him, so you're going to deal with both sides at the same time"; "It makes it harder because I have to go to the clinic every single morning. Babies aren't always predictable; I have to get him and make sure he's fed and clean and stuff before I leave and hopefully put him back to sleep before I go"; "I'm going to have to bring him to the clinic with me and expose him to a lot of germs and the cold"; "The postpartum is scary because you just don't want to be around your child."
Having an infant is a source of resilience and provides a sense of purpose for mothers on their path to recovery	"I never thought I would get the chance because of my addiction and the road I was going down, and it still feels like a dream"; "It's [having a baby] more motivating to continue, and it's a reminder of why I'm still here."

OBGYN, obstetrics-gynecology.

the perception of barriers and facilitators of breastfeeding and rooming-in that may serve as future intervention targets. Overall, mothers experienced internal and external stigma yet simultaneously felt joy and a sense of purpose and responsibility in caring for their infants. Breastfeeding initiation was influenced by information received about the specific benefits and risks of breastfeeding in the setting of opioid use, and many women reported incorrect information, which dictated their feeding choice. Breastfeeding success was influenced by hospital provider support, infant withdrawal symptoms, and past traumatic experiences. Rooming-in was facilitated by hospital policies allowing for infants to be at the bedside and was hindered by competing demands related to mothers' addiction treatment.

In this study, we explored the perspectives of mothers with OUD during the birth hospitalization. Similar to McGlothen et al,[7] we also found that the information mothers heard about breastfeeding informed their feeding choice; with this finding, the importance of accurate maternal education on the role of breastfeeding is reiterated. Mothers in our study also expressed frustration and surprise with the need for formula supplementation and difficulty with infant latching, as a consequence of NAS. This reveals the importance of education for mothers that includes preparation for the need for formula supplementation and difficulty with infant latching. Future investigation regarding the short- and long-term risks and benefits of formula supplementation as it relates to infant weight trajectories and breastfeeding will also guide future education interventions. Oral-motor dysfunction observed in NAS has not been well characterized nor have approaches to support mothers who are breastfeeding infants with NAS exhibiting oral-motor dysfunction. Like Jansson et al,[22] we also found that past sexual abuse negatively impacted mothers' decision to breastfeed. Previous research has revealed a strong link between history of sexual trauma and substance use[23,24] with ~45% of pregnant women reporting a history of sexual abuse.[25] In our experience, discussions about past sexual trauma are neglected when counseling mothers with OUD about breastfeeding. In this study, we highlight the importance of consideration of this issue when developing breastfeeding promotion interventions in this vulnerable population.

Similar to Atwood et al,[14] we found that any separation of the infant from the mother at any stage of the birth hospitalization, competing medical demands by the mother, and logistical transportation issues impacted mothers' ability to remain at the bedside. These data can be used to emphasize the importance of hospital policies to minimize mother-infant separation during the birth hospitalization and of assistance with transportation as key aspects of future interventions to maximize rooming-in.

We found that internal and external stigma played a large role in mothers' self-efficacy to care for their infants. Self-efficacy, or confidence in one's ability to perform, is a critical factor in infant care practices, such as breastfeeding continuation,[26] and promotion of self-efficacy is a key mechanism used to enhance mothers' role in infant care.[27,28] Internal and external stigmatization have been previously described among mothers of OUD.[11,28] Our finding that mothers had a heightened awareness to stigmatization and felt empowered when they felt that they were not being judged by hospital staff reveals the importance of interventions in which stigmatization is addressed directly in staff training and counseling of mothers.[12]

Strengths of this qualitative study include the recruitment of mothers who did and did not attempt breastfeeding, which allowed for the examination of a breadth of feeding perspectives. However, we restricted our sample to mothers who were eligible to breastfeed at our institution, which meant that participants received opioid agonist treatment in prenatal care. Mothers not eligible to breastfeed (who used illicit drugs at the time of delivery or who did not receive opioid agonist treatment during prenatal care) may have had different perspectives that we did not capture. This may have limited perspectives of the range of mothers with OUD. Our sample also came from a single, urban, Baby-Friendly–designated hospital that specializes in multidisciplinary care for mother-infant dyads with opioid exposure and endorses many breastfeeding support practices, which also might have limited the

perspectives that we captured. All participants were of non-Hispanic white race and ethnicity, and breastfeeding rates vary across races and ethnicities, independent of OUD.[29] Variability in the timing and setting of interviews might have led to recall bias in which mothers further removed from hospitalization might have forgotten details of their hospitalization. It is also possible that mothers who were interviewed while their infant was still hospitalized might have been reluctant to criticize care while still in contact with health providers. The possibility of socially desirable responses, therefore, cannot be discounted.

CONCLUSIONS

Targeted interventions that support the needs of mothers with OUD during the infant hospitalization with breastfeeding and rooming-in are urgently needed. With the findings of this qualitative study, we suggest that future intervention targets include the promotion of maternal education in the benefits and technical challenges of breastfeeding an infant with opioid withdrawal symptoms, of hospital policies and environments that minimize mother-infant separation and allow for privacy, and of maternal self-efficacy by the provision of nonjudgmental care that supports mothers' autonomy.

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