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Breastfeeding and Methadone Therapy: The Maternal Experience

Jill R. Demirci, PhD^a, Debra L. Bogen, MD^a, and Yael Klionsky^b

^aUniversity of Pittsburgh School of Medicine, Department of Pediatrics, Pittsburgh, PA, USA

^bTechnion-Israel institute of Technology, Haifa, Israel

Abstract

Background—Despite evidence of low transfer of methadone into breast milk and the potential physical and psychological benefits that breastfeeding offers for methadone-exposed mothers and infants, the rate of breastfeeding initiation in this population is about half that reported nationally. This study describes the perceptions surrounding breastfeeding decisions and management among pregnant and postpartum women taking methadone.

Methods—Seven pregnant women and four postpartum women enrolled in methadone maintenance programs participated in semi-structured, audio-taped interviews and focus groups, respectively, about their breastfeeding experiences. Transcripts were analyzed and coded using qualitative content analysis.

Results—Three major content categories were identified: (1) fears, barriers and misconceptions about breastfeeding while taking methadone; (2) motivation and perceived benefits of breastfeeding; and (3) sources of information, support, and anxiety about general breastfeeding management and breastfeeding while taking methadone. Lack of support from the healthcare community and misinformation about the dangers of combining breastfeeding and methadone therapy represented significant, yet modifiable, barriers to breastfeeding success in methadone-exposed women.

Conclusions—Interventions to increase the prevalence of breastfeeding among women taking methadone should address identified logistical, educational, and psychological barriers and consider inclusion of women themselves, partners, peers, and clinicians. In particular, clinicians who care for methadone-exposed mothers and infants should be educated on therapeutic communication, up-to-date breastfeeding contraindications, and the health benefits of breastfeeding in this population.

Keywords

methadone; substance-related disorders; opioid-related disorders; pregnancy; postpartum period; breast feeding

Correspondence should be addressed to: Jill R. Demirci, PhD, 3414 Fifth Avenue, 3rd Floor, Pittsburgh, Pennsylvania 15213. jvr5@pitt.edu.

AUTHOR CONTRIBUTIONS

Debra Bogen conceptualized the research question and design, participated in data collection, interpretation of results, writing and revisions. Yael Klionsky participated in data analysis and revisions of the manuscript. Jill Demirci was involved in data analysis, interpretation, writing, and revisions.

INTRODUCTION

Breastfeeding is globally recognized as the optimal method of infant feeding through the first one to two years of life.^{1,2} Breastfeeding may have additional benefits for women taking methadone and their infants, including decreased occurrence or severity of neonatal abstinence syndrome (NAS)^{3–5} and improvement of familial social functioning through stress reduction, increased maternal confidence, and enhanced mother-infant bonding associated with a positive breastfeeding experience.⁶ It is plausible that breastfeeding may also prolong the substance-free period in methadone-exposed women, owing to the known risks of illicit drug transfer through breast milk. Thus, breastfeeding promotion could be one cost-effective mechanism to improve the physical and psychological trajectory of methadone exposed mother-infant dyads.

Prior to the mid-1990s, the American Academy of Pediatrics Policy Statement on the transfer of drugs into human milk stated that methadone doses above 20 mg/day were a contraindication to breastfeeding.⁷ However, in their most recent policy statements in 2001 and 2013, methadone at any dose is no longer listed as a breastfeeding contraindication.^{8,9} Recent work has suggested that transfer of methadone through breast milk is small (1–3% of the maternal weight-adjusted dose; equating to significantly less than the dose typically given to infants to treat NAS)¹⁰ and remains relatively negligible even at higher maternal doses.^{5,11–13} Still, breastfeeding initiation among women in methadone treatment programs (who are adherent to treatment and with no contraindications to breastfeeding) is low, with reports ranging from ~24–46%,^{14,15} compared to the national initiation rate of 77%.¹⁶

Women taking methadone may face additional barriers to successful breastfeeding over and above that experienced in the general population. Suggested breastfeeding deterrents include physiological effects of methadone on the infant, idiosyncratic cultural norms among methadone-treated women, and practical and healthcare system barriers. Infants exposed to methadone frequently exhibit hypertonicity, irritability, and disorganized sucking, which can render breastfeeding a challenging experience. Women taking methadone may lack breastfeeding role models within their familial and social networks and may have a lower tolerance for breastfeeding setbacks and discomforts. Women with a history of substance use also disproportionately experience physical and sexual abuse—potentially leading to apprehension regarding skin-to-skin contact and breast exposure necessary for breastfeeding. Within the healthcare system, clinician suspicion of polysubstance use or misinformation about transfer of methadone through breast milk can lead to covert or overt breastfeeding discouragement. Practically, required daily commutes to methadone programs can interfere with early breastfeeding establishment.^{6,15} No published research to date has explored the influence of these or other barriers on breastfeeding behavior. In this analysis, we describe the experiences and perceptions impacting breastfeeding decisions among pregnant and postpartum women taking methadone.

METHODS

Pregnant and postpartum women expressing an interest in breastfeeding their child were invited to participate in a study about their breastfeeding experiences while taking

methadone. Individual interviews were conducted between 2005–2006 with pregnant participants in their second or third trimesters (n=7). These women were part of a larger study on methadone pharmacokinetics and were recruited from an outpatient obstetrical clinic at a large, urban teaching hospital. Interviews were conducted at a private location.

Four women in their first year postpartum participated in two small focus groups (2 women per group) between 2008–2009. These women were recruited via advertisements at a local drug treatment center for pregnant women and mothers, and groups were also held at the treatment centers. Institutional Review Board approval was obtained from the University of Pittsburgh to conduct the interviews and focus groups. Both pregnant and postpartum participants signed written informed consent prior to any data collection.

Interviews and focus groups were 60–90 minutes in length and followed a semi-structured interview guide (Table 1) developed by DB with input from experts in breastfeeding medicine, drug addiction medicine, and qualitative methods. Scripts were intended to capture factors influencing women’s decision-making about breastfeeding, obstacles encountered with breastfeeding in the postpartum period, and suggestions for improving postpartum breastfeeding support for mothers taking methadone. Focus groups were conducted by an external qualitative researcher, and interviews were conducted by DB. DB disclosed her clinical expertise in breastfeeding to participants prior to beginning the interviews, but deferred addressing participant breastfeeding questions and concerns until the end of the interview. All groups and interviews were audiotaped, transcribed verbatim, and reviewed for accuracy.

Using qualitative content analysis, transcripts were coded line-by-line for content using constant comparison by two authors (JRD and YK) independently. Individual coding was then compared and organized into sub-categories and major categories by JRD based on the consensual interpretations of both coders. Several interpretative differences at the sub-category level (e.g., “guilt/atonement” as a motivating factor to breastfeed) were resolved through review of original transcripts and discussion by JRD and DB. YK and DB reviewed the final categorical grouping of codes and exemplars in separate consensus meetings with JRD. ATLAS TI was used for coding and data management.

RESULTS

Background data were not collected on the four postpartum women participating in focus groups. Pregnant women ranged in age from 18–45 years (m=27 years), five of the seven were multiparous, and all self-reported race as Caucasian and non-Hispanic. None had previously breastfed. Five reported currently smoking. Of five women with available chart data, two were Hepatitis C positive, and methadone dosages ranged from 60–120 mg/day (m=90 mg/day). All pregnant women intended to breastfeed, and all postpartum women initiated breastfeeding during the postpartum hospitalization. Two postpartum women stopped breastfeeding prior to their intended breastfeeding duration—one during her infant’s postpartum hospitalization and one at approximately three months postpartum.

Three major content categories were identified in the transcripts: (1) fears, barriers and misconceptions about breastfeeding while taking methadone; (2) motivation and perceived benefits of breastfeeding; and (3) sources of information, support and anxiety about general breastfeeding management and breastfeeding while taking methadone.

Fears, barriers and misconceptions

This category encompassed anticipated or experienced negative influences on the decision to initiate and continue breastfeeding, respectively. Among pregnant women, smoking was erroneously viewed as a contraindication to breastfeeding; the possibility of pain, disappointment if the infant were to reject the breast, lack of family support for breastfeeding, and partners' perceived trepidation about transfer of methadone through breast milk also made women hesitant to attempt breastfeeding.

“And I was watching this thing on TLC [The Learning Channel] and the mom got real upset and kind of hurt because her baby wouldn't latch to her... And she got real, real upset. I don't know. I'm just afraid that might happen to me. I know I'd be upset if my baby didn't want my milk. It would just make me feel, I don't know, unwanted, I guess.”

“My husband doesn't want me to breastfeed, because he worries about the methadone in the breast milk. [The baby] is going to go through withdrawals and is going to be addicted to my breast milk, as my husband would say... And I'm trying to convince him. Like I try to make everything seem so much better than it is about the breast milk. I don't want him to see my fears... I won't express that. I won't let him know anything like that, because I want to be confident... you know, I'm going to breastfeed and that's it. Underneath I'm scared crapless.”

“My sister is like, ‘why would you want to breastfeed? There's all these formulas. The baby will be fine if you just give him a bottle. What about when you go back to work?’... nobody's actually on my side about the breastfeeding. Everybody's kind of like, ‘Why do you want to breastfeed?’ There's a lot of negativity. They're probably like ‘Why?’, you know... It's nice when I go to [name of drug treatment program] and I have support of other women who are like, ‘Yeah, I'm breastfeeding’... But at home, it's going to be uncomfortable at first, I guess, until everyone gets used to the idea of me breastfeeding.”

Among *both* postpartum and pregnant women, barriers to breastfeeding included the following: (1) worry about transfer of Hepatitis C through breast milk; (2) perceived or anticipated lack of time to devote to breastfeeding due to other responsibilities and children; (3) concern about having enough breast milk or “drying up”; (4) potential for or actual infant latching problems (note that women did not attribute latching issues to NAS, but rather as a common issue faced by breastfeeding women in general); and (5) apprehension that the infant might “OD” (overdose) or become “high” on methadone transferred through breast milk.

“I don't want her to be all high or nothing, you know, because I am on a high dose [of methadone].”

“But I also in the back of my head, I keep thinking about it because no one has ever told me—[I’ve] heard of lot of stories of babies OD’ing on methadone. I never [seen it], so I don’t know. But it still sticks in the back of my head. I don’t know why.”

“I guess the hepatitis was a main reason [for my uncertainty about breastfeeding]. Because I definitely didn’t want my baby to get that. My stupid mistakes going over to them.”

Motivation and perceived benefits

Pregnant and postpartum women’s motivation to breastfeed included general benefits to her and her child’s health, the potential for enhanced bonding, and convenience.

“I knew that [breastfeeding] was beneficial. It would be beneficial to me as far as faster recovery. You know, it’s healthy for me, healthy for the baby...”

“I hope it works, because people have told me the antibodies from me will help the baby, and the nutrients are more in breast milk than in formula.”

“Well, I think that breastfeeding, you don’t have to deal with bottles. I mean unless you pump and you work. It’s way better. I mean you don’t have to sit there and clean the bottles. Less time there. So I really just think overall breastfeeding is way better than bottle-feeding.

Women also breastfed or planned to breastfeed as atonement for early pregnancy ambivalence or as a means to assuage guilt and mitigate infant discomfort associated with withdrawal symptoms. Women believed that withdrawal could be lessened through the “nutrients” in breast milk, the “closeness” inherent in at-breast feeds, or the small amount of methadone transferred through breast milk.

“At first, because of my situation –I was on drugs, so I kind of didn’t have a feeling about being pregnant....And I felt bad because I didn’t have that connection right off with him. And I just feel he needs the extra love and everything....And he’s going to go through so much because of me. And I’m going to give him everything that I can give him—no matter what, to try to make him feel comfortable and adapt into the world.”

“Even though it’s like the baby won’t be getting my whole dose, at least she’ll get some to where it will calm her down. And basically that’s what I want. I don’t want her to suffer because of my addiction.”

“I was talking to this one girl and she said don’t let anyone else hold the baby the first couple of weeks, especially methadone babies. Because her baby left the [hospital] the day after she [was discharged from the] hospital, and she was the only one that held the baby the first couple of days...[the baby] felt more secure with her mom. She said letting everyone hold [the baby], it’s kind of like -- her withdrawal symptoms probably would have been worse. I don’t know if that’s true or not, but that’s what I’m going to do. And with breastfeeding, he’ll have to be with me a lot.”

“I think the nutrition and -- I don't know, like the closeness with the mother and the baby. I think that will help him a lot [with withdrawal symptoms].”

“You know, even with my oldest son, I never really gave [breastfeeding] a chance. I let him try it one time, and I didn't like it so it never happened again. But I mean right now I'm trying to do what's best for my baby, because if my breast milk will help her from her withdrawals, then that's what I'm going to do.”

Sources of information, support and anxiety

This category comprised the individuals and entities women viewed as conduits of knowledge or opinions about general breastfeeding management or breastfeeding in the context of methadone exposure. Women's own mothers were generally seen as purveyors of experiential breastfeeding knowledge and support, while partners were cited alternately as sources of support or anxiety about the decision to breastfeed. Some women displayed ambivalence toward breastfeeding, owing to their desire to include fathers in the bonding or parental responsibilities associated with infant feedings.

“You know, and I would feel bad if [my partner] wanted to take part in feeding the baby and here I am breastfeeding. I could always pump, you know.”

Friends were viewed as helpful regarding general breastfeeding management tips, although methadone use and its possible effects on breastfeeding were not specifically disclosed or discussed. Peers in drug treatment programs offered a sense of camaraderie about breastfeeding while taking methadone, but they also amplified women's anxieties about their infants becoming “addicted to” or high from methadone in breast milk.

“I told my friends I was breastfeeding, but they didn't know about the methadone, because I don't want them knowing. I was asking them like their opinion -- or not opinion, but like helpful hints, tips to help her latch on and stuff like that.”

“I like going to [name of drug treatment program]. It makes me feel comfortable seeing other women in the same kind of situation. All of us have different stories. It feels kind of good to know, you know what I mean, I'm not the only one out there that's pregnant and on methadone and it feels good to be able to talk about the breastfeeding with other people who have the same kind of ifs and buts like I do. And I don't have to worry about are they going to be like, ‘oh you're crazy for taking [methadone while breastfeeding], you know.’ ”

“I'm in the [name of drug treatment] program. It's all pregnant women and women who just delivered and so forth, so we kind of like feed off each other. Get information off of each other. Like if one has asked their doctor questions, [they share the information]...which some of them misconstrue things because when I re-ask the question, they're like, ‘No, that's not true.’ Like one of the women told me that you have to wean the baby off of breast milk because of the methadone in the breast milk. You can't just stop giving them breast milk. And I was worried about that. Is he going to go through withdrawal off my breast milk because I'm on methadone? ... And there's a lot of women [in the program] who their baby didn't

have no withdrawal symptoms. You know, they were home in seven days. I think that's great. I'm so scared that my baby's going to be opposite."

Within the healthcare community, women obtained information and misinformation about breastfeeding while taking methadone through WIC counselors and internet resources. Prenatal providers rarely addressed breastfeeding and were perceived to "not know much" about breastfeeding. Pediatricians, however, were seen as a trusted resource for breastfeeding information. Nurses in drug treatment and transitional infant care programs were thought to be knowledgeable and helpful with breastfeeding, but postpartum women were outspoken about the lack of breastfeeding support from hospital-based nurses. Women described these nurses as undermining their breastfeeding efforts, not taking the time to help with breastfeeding, not being interested in breastfeeding, or unknowledgeable about breastfeeding among women and infants exposed to methadone.

"The nurses in the NICU got [my baby] up to the point where she was screaming and then [a nurse] would say, 'Okay, try and breastfeed her the first time.' And she was so excited that [my baby] couldn't even latch on. And [the nurse] did that purposely so that she would give her formula. She wouldn't let me change her diaper. She wouldn't let me hold her. She wouldn't let me do anything. And whenever I finally said I want to breastfeed her, [the nurse] just to show me, she just said 'Okay, take [your breast] out,' and she just put the baby's head there and that was it. She walked out of the room."

"And I don't think a lot of those nurses are used to having women on methadone come in, and so they thought I was a bad mother and they wanted to give her formula...I was pumping constantly so that they wouldn't have to give her formula, but the first 2 or 3 days I wasn't getting a lot so they'd have to supplement her."

"I had a couple [nurses] when I pumped my milk and I wasn't [present] at the hospital...they would not look at my paper [indicating feeding preference] and they would just give the baby formula. And they would be like, 'Oh, I forgot.' "

DISCUSSION

Despite the AAP's statement that methadone is not a contraindication to breastfeeding, the potential benefits of breastfeeding for methadone-exposed dyads, and study participants' intentions to breastfeed, our results indicate that women taking methadone face opposition, stigma, misinformation, and logistical barriers that impact their decision to initiate breastfeeding and persevere through early challenges. While some of the identified obstacles are not unique to women taking methadone (e.g., lack of family support, inadequate lactation education and assistance, apprehension about breastfeeding time commitments),¹⁷⁻²⁰ participants in our study often experienced these issues more acutely and faced more cumulative breastfeeding barriers compared to women in the general population. Among these, lack of support from the healthcare community and misinformation about the dangers of combining breastfeeding and methadone therapy represent significant, yet modifiable, barriers to breastfeeding success.

It is important that obstetric and pediatric healthcare providers understand current guidelines for breastfeeding amongst methadone-exposed women and offer these women non-discriminatory and supportive counsel regarding common breastfeeding barriers and concerns they may face. For example, clinicians should seek to preemptively negate erroneous beliefs that Hepatitis C, smoking, and methadone use are contraindications to breastfeeding. Ways to include family members and partners in this education should also be considered, as these individuals' opinions were often added sources of anxiety for women.

It should be stressed that Hepatitis C is a blood-borne pathogen with no documented cases of transmission via breast milk, and caution need only be exercised if a mother develops an open lesion on her breast.²¹ While pregnant and postpartum women should be counseled in ways to reduce or quit smoking due to the association of tobacco with decreased breast milk volume and adverse fetal and neonatal outcomes (e.g., sudden infant death syndrome), they should also understand that the potential health benefits of breastfeeding likely outweigh the risks of tobacco products passing into breast milk.^{9,22} Clinicians should also seek to dispel women's fears that infants can "OD" on methadone—emphasizing the proportionately small transfer of methadone through milk,¹⁰ the poor correlation between maternal methadone dose and severity of NAS symptoms,^{5,11–13,23–25} and the mechanisms through which breastfeeding can potentially protect against NAS development (e.g., skin-to-skin contact; small transfer of methadone through breast milk).^{26–28} It is equally imperative that clinicians communicate to women the infant health risks of unprotected sex (and HIV contraction), alcohol use, and illicit drugs while breastfeeding, as these substances pass readily into breast milk.^{9,21}

Despite the potential for NAS symptomatology to complicate or discourage breastfeeding (e.g., problems with latching/suck, positioning at breast),⁶ we did not find this to be the case in our study. Rather, these issues were viewed as normal breastfeeding issues, which could be dealt with through supplementation with formula or breast milk via bottle; breastfeeding was largely viewed as a mechanism to provide comfort to the infant through the withdrawal process. While these findings are encouraging, formula supplementation and exclusive, long-term "pumping" can compromise milk production through insufficient removal of milk from the breast. Among women whose infants develop NAS, referral to a lactation consultant to assist in achieving at-breast feeds may be prudent.

Similar to childbearing women within the general population, participants identified peers as influential in their breastfeeding decisions. Breastfeeding peer support programs have been demonstrated to increase rates of breastfeeding initiation, duration, and exclusivity,^{29–31} and they may be particularly beneficial for women sharing unique breastfeeding concerns, such as those taking methadone. While peer breastfeeding support can take many forms, including one-to-one assistance, group meetings, or telephone-based support, the most effective programs include some level of breastfeeding training and oversight by healthcare professionals, support that is provided as soon after birth as possible, and peer assistants who are of the same sociocultural background as the mothers they are counseling.³² As one potential mechanism to improve breastfeeding rates in methadone-exposed women, future research or quality improvement programs might consider the feasibility and effectiveness of peer-based lactation support in the context of community methadone treatment programs

and/or facilities caring for infants exhibiting NAS symptoms (e.g., NICUs, special care/transitional nurseries).

Limitations of this study include the small convenience sample of women and recruitment from a single geographical area, which limits generalizability of findings. In addition, we interviewed pregnant and postpartum women at only a single time-point; lack of prospective data introduces the possibility of recall bias. All participants also expressed an interest in breastfeeding; women taking methadone who intend to formula feed or who are less committed to breastfeeding may have differing breastfeeding concerns and be less engaged in the health care system. Breastfeeding promotion efforts for this group would thus require alternate approaches. Finally, we did not survey clinicians about their interactions with methadone-exposed mother-infant dyads; their experiences and opinions may offer additional insight into feasible interventions in the prenatal and postpartum settings.

Findings from this study contribute to our knowledge base surrounding the barriers, preferred and available sources of information and support, and motivating factors influencing breastfeeding in pregnant and postpartum women taking methadone compared to women in the larger population. This may provide a starting point for the design of future interventions seeking to improve breastfeeding initiation and continuation among methadone-exposed mother-infant dyads.

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References

1. World Health Organization and Fifty-Fifth World Health Assembly. Provisional agenda item 13.10: Infant and young child nutrition-global strategy on infant and young child feeding. 2002:A55/15.
2. American Academy of Pediatrics Section on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics*. 2012; 129(3):e827–841. [PubMed: 22371471]
3. Abdel-Latif ME, Pinner J, Clews S, Cooke F, Lui K, Oei J. Effects of breast milk on the severity and outcome of neonatal abstinence syndrome among infants of drug-dependent mothers. *Pediatrics*. 2006; 117(6):e1163–1169. [PubMed: 16740817]
4. Arlettaz R, Kashiwagi M, Das-Kundu S, Fauchere J, Lang A, Bucher H. Methadone maintenance program in pregnancy in a Swiss perinatal center (II): neonatal outcome and social resources. *Acta Obstet Gynecol Scand*. 2005; 84(2):145–150. [PubMed: 15683374]
5. Jansson LM, Choo R, Velez ML, et al. Methadone maintenance and breastfeeding in the neonatal period. *Pediatrics*. 2008; 121(1):106–114. [PubMed: 18166563]
6. Jansson LM, Velez M, Harrow C. Methadone maintenance and lactation: a review of the literature and current management guidelines. *J Hum Lact*. 2004; 20(1):62–71. [PubMed: 14974702]

7. American Academy of Pediatrics Committee on Drugs. The transfer of drugs and other chemicals into human milk. *Pediatrics*. 1994; 93(1):137–150. [PubMed: 8265310]
8. American Academy of Pediatrics Committee on Drugs. Transfer of drugs and other chemicals into human milk. *Pediatrics*. 2001; 108(3):776–789. [PubMed: 11533352]
9. Sachs HC. Committee on Drugs. The transfer of drugs and therapeutics into human breast milk: an update on selected topics. *Pediatrics*. 2013; 132(3):e796–e809. [PubMed: 23979084]
10. National Library of Medicine. [Accessed July 11, 2013.] Drugs and Lactation Database (LactMed). Methadone drug levels and effects. 2013. <http://toxnet.nlm.nih.gov/cgi-bin/sis/search/f?./temp/~VsJ5MY:1>
11. Geraghty B, Graham EA, Logan B, Weiss EL. Methadone levels in breast milk. *J Hum Lact*. 1997; 13(3):227–230. [PubMed: 9341416]
12. Bogen DL, Perel JM, Helsel JC, Hanusa BH, Thompson M, Wisner KL. Estimated infant exposure to enantiomer-specific methadone levels in breastmilk. *Breastfeed Med*. 2011; 6(6):377–384. [PubMed: 21348770]
13. Jansson LM, Choo RE, Harrow C, et al. Concentrations of methadone in breast milk and plasma in the immediate perinatal period. *J Hum Lact*. 2007; 23(2):184–190. [PubMed: 17478871]
14. McCarthy JJ, Leamon MH, Parr MS, Anania B. High-dose methadone maintenance in pregnancy: maternal and neonatal outcomes. *Am J Obstet Gynecol*. 2005; 193(3 Pt 1):606–610. [PubMed: 16150249]
15. Wachman EM, Byun J, Philipp BL. Breastfeeding rates among mothers of infants with neonatal abstinence syndrome. *Breastfeed Med*. 2010; 5(4):159–164. [PubMed: 20658895]
16. Centers for Disease Control and Prevention. [Accessed February 25, 2013.] Breastfeeding report card-United States. 2012. <http://www.cdc.gov/breastfeeding/pdf/2012BreastfeedingReportCard.pdf>
17. Arora S, McJunkin C, Wehrer J, Kuhn P. Major factors influencing breastfeeding rates: Mother's perception of father's attitude and milk supply. *Pediatrics*. 2000; 106(5):E67. [PubMed: 11061804]
18. Graffy J, Taylor J. What information, advice, and support do women want with breastfeeding? *Birth*. 2005; 32(3):179–186. [PubMed: 16128971]
19. Ahluwalia I, Morrow B, Hsia J. Why do women stop breastfeeding? Findings from the Pregnancy Risk Assessment and Monitoring System. *Pediatrics*. 2005; 116(6):1408–1412. [PubMed: 16322165]
20. U. S. Department of Health and Human Services, Office of the Surgeon General. The Surgeon General's Call to Action to Support Breastfeeding. Washington, DC: 2011.
21. American Academy of Pediatrics. Transmission of infectious agents via human milk. In: Pickering, LK., editor. *Red Book: 2012 Report of the Committee on Infectious Diseases*. 29. Elk Grove Village, IL: American Academy of Pediatrics; 2012. <http://aapredbook.aappublications.org/content/1/SEC70/SEC77/SEC79.body> [Accessed October 11, 2013.]
22. Goldade K, Nichter M, Nichter M, Adrian S, Tesler L, Muramoto M. Breastfeeding and smoking among low-income women: results of a longitudinal qualitative study. *Birth*. 2008; 35(3):230–240. [PubMed: 18844649]
23. Bakstad B, Sarfi M, Welle-Strand GK, Ravndal E. Opioid maintenance treatment during pregnancy: occurrence and severity of neonatal abstinence syndrome. A national prospective study. *Eur Addict Res*. 2009; 15(3):128–134. [PubMed: 19332991]
24. Kuschel CA, Austerberry L, Cornwell M, Couch R, Rowley RSH. Can methadone concentrations predict the severity of withdrawal in infants at risk of neonatal abstinence syndrome? *Arch Dis Child Fetal Neonatal Ed*. 2004; 89(5):F390–393. [PubMed: 15321955]
25. Seligman NS, Salva N, Hayes EJ, Dysart KC, Pequignot EC, Baxter JK. Predicting length of treatment for neonatal abstinence syndrome in methadone-exposed neonates. *Am J Obstet Gynecol*. 2008; 199(4):396.e391–397. [PubMed: 18928986]
26. McQueen KA, Murphy-Oikonen J, Gerlach K, Montelpare W. The impact of infant feeding method on neonatal abstinence scores of methadone-exposed infants. *Adv Neonatal Care*. 2011; 11(4):282–290. [PubMed: 22123351]
27. Pritham UA, Paul JA, Hayes MJ. Opioid dependency in pregnancy and length of stay for neonatal abstinence syndrome. *J Obstet Gynecol Neonatal Nurs*. 2012; 41(2):180–190.

28. Pritham UA. Breastfeeding promotion for management of neonatal abstinence syndrome. *J Obstet Gynecol Neonatal Nurs*. 2013; 42(5):517–526.
29. Britton C, McCormick FM, Renfrew MJ, Wade A, King SE. Support for breastfeeding mothers. *Cochrane Database Syst Rev*. 2007; (1):CD001141. [PubMed: 17253455]
30. Chung M, Raman G, Trikalinos T, Lau J, Ip S. Interventions in primary care to promote breastfeeding: an evidence review for the U.S. Preventive Services Task Force. *Ann Intern Med*. 2008; 149(8):565–582. [PubMed: 18936504]
31. Fairbank L, O'Meara S, Renfrew MJ, Woolridge M, Sowden AJ, Lister-Sharp D. A systematic review to evaluate the effectiveness of interventions to promote the initiation of breastfeeding. *Health Technology Assessment (Winchester, England)*. 2000; 4(25):1–171.
32. Centers for Disease Control and Prevention. Strategies to prevent obesity and other chronic diseases: The CDC guide to strategies to support breastfeeding mothers and babies. Atlanta: U. S. Department of Health and Human Services; 2013.

TABLE 1

Excerpts From Interview and Focus Group Scripts

| EXCERPTS FROM INTERVIEW SCRIPT | EXCERPTS FROM FOCUS GROUP SCRIPT |
|---|--|
| Do you have other children? If yes, how did you feed them? Did you ever try breastfeeding? Tell me about that experience. | Tell me about your decision to breastfeed. (PROBES: Any barriers you faced prenatally, in the hospital, postpartum?; facilitators, influences) |
| Can you tell me about how you're planning to feed your baby? What kinds of things are affecting your decision? | Did anyone give expressed or pumped milk, for bottle-feeding, or anyone who wanted to? What do you think/know about this? |
| What are some good things you've heard about breastfeeding/formula feeding? What are some bad things you've heard about breastfeeding/ formula feeding? | Tell me about any breastfeeding challenges you faced--how did you deal with those? What might you suggest for overcoming these barriers? |
| What have you heard about breastfeeding and methadone? From whom? What about your own feelings about breastfeeding and methadone? | We'd like to help more women taking methadone make the decision to breastfeed. What would you like to see in a breastfeeding education/support program? What would be helpful things to include? Who would be the best person to deliver it? |
| About how long do you think you will give your baby breast milk? If you have not decided, what do you think will impact your decision? | |