Perceptions of Primary Care-Based Breastfeeding Promotion Interventions: Qualitative Analysis of Randomized Controlled Trial Participant Interviews

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Abstract

Objective: This study examined women's perceptions and reported effects of routine, primary care-based interventions to increase breastfeeding.

Subjects and Methods: A subsample ($n=67$) of participants in randomized controlled trials (RCTs) completed semistructured exit interviews at 6 months postpartum. RCT arms included the following: (a) routine pre-/postnatal lactation consultant (LC) support (LC group); (b) electronic prompts (EP) guiding providers to discuss breastfeeding during prenatal care visits (EP group); (c) a combined intervention (LC + EP group); and (d) controls. Interview transcripts were coded and analyzed in MAX.qda.

Results: Key findings included the following: (1) Brief, non-directive assessment of feeding via postpartum interviews focused attention upon feeding practices. When coupled with breastfeeding promotion interventions, interviews promoted breastfeeding. (2) The EP and LC interventions were complementary: EPs influenced initiation, while LCs helped overcome barriers and sustain breastfeeding. (3) Prenatal intent to feed both breastmilk and formula was associated with the greatest receptivity to study messages.

Conclusions: Findings underscore the need for interventions across the continuum of care. Trained LCs in prenatal/postpartum settings and prenatal care providers play important complementary roles that, when coupled with brief telephone feeding assessments, may improve breastfeeding rates.

Introduction

WHILE NATIONAL BREASTFEEDING initiation rates are trending upward, duration and exclusivity remain low,¹ particularly among U.S.-born non-Hispanic black and U.S.-born Hispanic women,^{2,3} low-income women,³⁻⁵ and Women, Infants and Children program enrollees.^{6,7} Reviews and meta-analyses find that key facilitators to breastfeeding involve relation-based support⁸ spanning the pre- and postnatal periods⁹⁻¹¹ through multiple modalities.¹⁰ However, providers cite deficits in knowledge, time, and counseling skills as barriers to effective counseling.¹² Conversely, trained International Board of Certified Lactation Consultants (LCs) integrated in primary care are associated with increased breastfeeding duration in a review of the literature.¹³

To test interventions targeting breastfeeding disparities, we conducted two randomized controlled trials (RCTs) of routine prenatal care-based interventions to increase breastfeeding

intensity and duration ["Boosting Breastfeeding in Low-Income, Multi-ethnic Women: A Primary Care Based RCT (BINGO)" and "Provider Approaches to Improved Rates of Infant Nutrition and Growth Study (PAIRINGS)", sponsored by the Albert Einstein College of Medicine of Yeshiva University, among nearly 1,000 multiethnic low- to middle-income women. This article reports findings from the RCTs' 6-month exit interviews. As a qualitative inquiry, it presents participants' perspectives of study participation, utility of the interventions, and intervention effects upon infant feeding.

We sought to answer the following research questions: (1) How did research interviews affect infant feeding practices? (2) Did perceptions of study effects differ by prenatal feeding intention? (3) What were the perceived effects of study interventions (electronic prompts [EP] and/or LC) on breastfeeding knowledge, attitudes, and practices? In a "triangulation of methods," qualitative data were analyzed alongside feeding outcomes.

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The two randomized controlled trials from which data discussed in this article were obtained are registered at <http://clinicaltrials.gov> with registration numbers NCT00619632 and NCT00643253.

Subjects and Methods

Study overview

Details of the RCTs upon which this analysis is based are reported elsewhere.¹⁴ In brief, women were recruited from two medical centers in affiliated prenatal care sites in the Bronx, New York. From 2008 to 2010, these RCTs enrolled English- or Spanish-speaking women, ≥ 18 years old, in the first or second trimester of a singleton pregnancy. Participants were consented, enrolled, and completed a baseline interview at a routine prenatal visit (Table 1). Research assistants conducted follow-up phone interviews, lasting 5–10 minutes, at 1, 3, and 6 months to assess the birth experience (1 month only), frequency of milk, other liquid, and solid feeding in the past 24 hours and 7 days, when and why breastfeeding (if any) was discontinued, and child illnesses.

All study materials were available in English and Spanish. The study was approved by the governing institutional review board.

Interventions

Participants were randomized to one of four treatment groups: (1) EP; (2) LC; (3) EP + LC; or (4) control.

EP. After enrollment, research assistants inserted a series of prompts (EPs) to appear on the participants' electronic medical chart at five upcoming prenatal care visits. The EPs guided providers to ask nonjudgmental questions about women's breastfeeding plans and concerns, understanding of how long/how much to breastfeed, and family supports (Appendix).

TABLE 1. DEMOGRAPHICS OF PARTICIPANTS IN TWO RANDOMIZED CONTROLLED TRIALS

Measure	Value
Age (years) [mean (SD)]	29.61 (5.95)
Race/ethnicity	
White/non-Hispanic	5.5 (54)
Black/non-Hispanic	29.9 (296)
Hispanic	57.9 (573)
Asian/Pacific Islander/other	6.8 (67)
Parity	
Nulliparous	40.2 (377)
1	30.8 (290)
2	18.1 (170)
≥ 3	10.9 (102)
Feeding intention (prenatal)	
Breastfeeding only	44.4 (417)
Formula only	7.7 (72)
Both	45.2 (424)
Don't know	2.8 (26)
Nativity status	
U.S. born	67.2 (631)
Non-U.S. born	32.8 (308)
WIC for self at baseline	
Yes	46.4 (436)
Breastfed youngest child	
<1 month	18.4 (81)
1–2 months	17.1 (75)

Data are percentages (*n*) unless indicated otherwise. WIX, Women, Infants and Children program.

LC. Three International Board of Certified LCs followed a protocol consisting of two prenatal visits at the health center coinciding with enrollees' prenatal care provider visit, one hospital visit, and telephone follow-ups to 3 months or until breastfeeding ceased.

Exit interviews

At initial randomization, a random 20% of enrollees were flagged for exit interviews. At the 6-month follow-up interview, research assistants invited flagged participants to complete an exit interview immediately thereafter, with an additional \$5.00 gift card as thanks. Interviews, which ranged from 8 to 12 minutes, were audio-recorded, downloaded in Digital Wave, and transcribed verbatim. Interviews conducted in Spanish were transcribed by native Spanish speakers.

Research assistants conducting exit interviews were masked to treatment group. Open-ended interview items included:

- perception of study purpose
- effect of study participation (vs. targeted interventions) upon feeding
- recall (if any) of prenatal care provider discussions about infant feeding
- recall (if any) of study LC contact, and perceptions of recalled contacts

A research team convened biweekly for approximately 1 year to discuss themes and potential codes and to iteratively develop and revise a detailed codebook, including specific examples of text to include/exclude by code. Two authors coded interviews until they reached 80% inter-rater reliability and then coded interviews until data saturation was reached at 67 interviews.

Interviews were analyzed using MAX.qda software (2007) (VERBI, Berlin, Germany). Using the code-matrix function, the frequencies of code and subcodes were examined overall, as well as by treatment group, parity, and prenatal feeding intention. Code-matrices related to research questions were compared, and general trends were noted in code frequency. Each coded interview segment within the code-matrix was then analyzed to elicit more specific themes and tendencies.

This analysis also used study data from (a) the prenatal baseline questionnaire items pertaining to nativity (U.S.-born vs. foreign-born), age (in years), parity (primiparous or multiparous), and intended feeding in initial weeks (exclusive breastfeeding, mixed [breastfeeding and formula], and exclusive formula feeding) and (b) 1-month follow-up questionnaire items about current infant feeding practices.

Each quote from the exit interview is followed by a brief participant profile: treatment group, parity, age, nativity, prenatal intention, and 1-month feeding data.

Results

The interview effect

Follow-up interviews at 1, 3, and 6 months increased consciousness of feeding practices. For some, interviews reinforced the benefits of breastfeeding and provided encouragement to continue:

P33: At one point, I feel guilty to give up the breastfeeding, 'cause I'm like, oh my God, they're gonna call me and I'm gonna say I stopped breastfeeding. What I gonna say?

—(EP+LC group, multiparous 30 years old, foreign-born, intended exclusive breastfeeding, 1-month mixed)

P172: It [study interviews] made me a little more conscious about it...with my first child I didn't think much of it, but this time around I was wanting to actually give my child more breastmilk and work with it, but with work getting in the way I couldn't really follow through the way I wanted to.

—(EP+LC group, multiparous 31 years old, U.S.-born, intended mixed feeding, 1-month mixed)

B42: It [the study interviews] makes you more interested about breastfeeding and helps you not giving up on the breastfeeding and makes you a little bit more comfortable with breastfeeding.

—(Control group, multiparous 31 years old, foreign-born, intended mixed feeding, 1-month exclusive formula feeding)

The interviews also appeared to influence formula and solid feeding by making participants more aware of food intake and the importance of refraining from early introduction of solids. Interview items about frequency of milk, other liquid, and solid intake in the past 24 hours/7 days were perceived as directive and/or educational, although they were not intended as such:

B23: I learned that breastmilk was very important for the baby's and my health. And also how to give the formula, how many times and how much... I didn't give my baby any food to eat in the first 2 to 3 months. I only gave her formula and breastmilk.

—(EP group, primiparous 29 years old, foreign-born, intended mixed feeding, 1-month mixed)

B482: I think I remember you asking me how many ounces and I know that if you give 'em too much that you guys probably say that's probably too much or you should try this or try that.

—(Control group, multiparous 44 years old, U.S.-born, intended mixed feeding, 1-month mixed)

P132: It kept me aware of actually what her intake was and what the intake wasn't.

—(Control group, multiparous 33 years old, U.S.-born, intended exclusive breastfeeding, 1-month mixed)

Treatment group (EP and/or LC) participants appeared to focus more on how the interviews affected breastfeeding rather than food intake. This may reflect these treatment groups' greater difficulty (vs. controls) in distinguishing the "assessment" nature of the interviews from the interventions.

Study effects by prenatal feeding intention

Almost half (29/67, 44%) intended to exclusively breastfeed for at least 1 month, whereas 37 (55%) intended mixed feeding. Only one intended to exclusively formula feed because of use of a contraindicated medication. Among those intending to exclusively breastfeed, about half indicated that

the study did not affect their decision to initiate breastfeed because they were already committed to doing so:

P132: I'd say no because I had already planned on nursing if it was possible for me to nurse.... So my mind was already made up.

—(Control group, multiparous 33 years old, U.S.-born, intended exclusive breastfeeding, 1-month mixed)

For the other half of women intending to exclusively breastfeed at baseline, breastfeeding knowledge and support provided by EP and/or LC interventions reinforced this intention. Thus, women who intended to exclusively breastfeed still benefited from interventions:

B263: It helped me to be more comfortable with breastfeeding and just knowing that it's better for the baby than formula.

—(EP group, multiparous 29 years old, U.S.-born, intended exclusive breastfeeding, 1-month exclusive breastfeeding)

B423: Hearing information about, you know, good things about breastfeeding, it encouraged me to actually want to continue to breastfeed and give him breastmilk.

—(EP+LC group, multiparous 33 years old, U.S.-born, intended exclusive breastfeeding, 1-month mixed)

Women intending to mixed feed (as opposed to those intending to exclusively breastfeed) provided particularly strong evidence of study effect on feeding intentions. Assuming that mixed-feeding intentions reflect some ambivalence towards breastfeeding, then interventions appeared to shift the balance towards breastfeeding among these women:

B222: I decided to actually breastfeed. I was at a point that I didn't think I was going to breastfeed. Also, because I was gonna be going back to work. But with the study and deciding not to go back to work I decided I would breastfeed and it's good for her so I'm happy.

—(EP+LC group, primiparous 23 years old, U.S.-born, intended mixed feeding, 1-month mixed)

For some women intending to mixed feed, the LC clearly shifted the balance:

B423: It made a difference in how much breastmilk I gave him. It made me want to pump, made me pump more, and every time I seen one of the representatives they always encouraged me continue doing it 'cause it was what was best for him, and I did.

—(EP+LC group, multiparous 33 years old, U.S.-born, intended exclusive breastfeeding, 1-month mixed)

Perception of EP and LC intervention effects

EP intervention: influence on breastfeeding knowledge and attitudes. The EPs, albeit brief, prompted providers to discuss breastfeeding benefits in some detail. By contrast with the Control group, the EP group participants perceived their providers as more supportive of breastfeeding and recalled more detailed provider discussion of breastfeeding benefits

(e.g., protection against ear infections). Controls recalled more generic comments, such as "Breast is best," and perceived provider support for breastfeeding less strongly:

B482: She was more leaning towards breastfeeding cause she said you know the babies come out more healthier, they have less ear infections and colds or whatever you know she kept drilling that in my head.

—(EP group, primiparous 25 years old, U.S.-born, intended exclusive breastfeeding, 1-month mixed)

B122: [He said] breastmilk is best.

—(Control group, multiparous 31 years old, foreign-born, intended exclusive breastfeeding, 1-month mixed)

The trials were designed with the hypothesis that the white coat "imprimatur" of the EPs would complement the labor-intensive, relationship-based, and practical assistance of the LCs. Indeed, the EP+LC group recalled the most specifics about breastfeeding benefits, suggesting that the two interventions reinforced each other:

B222: Breastfeeding is best.... It's better for the baby. They don't get as many ear infections, if any. It helps with obesity.

—(EP+LC group, primiparous 22 years old, U.S.-born, intended mixed feeding, 1-month mixed)

B103: He said that if you...go for breastfeeding it goes directly to the child and he also that when you breastfeeding it also prevents you to have another child too early....He also explained to me that it's very beneficial on the part of the kids, their immune system is better things like that.

—(EP+LC group, multiparous 35 years old, foreign-born, intended exclusive breastfeeding, 1-month mixed)

LC intervention and comfort with breastfeeding. LCs provided practical knowledge about breastfeeding specifics (e.g., colostrum), mechanics (e.g., latching and positioning), and daily strategies for managing breastfeeding that went beyond the EP-guided discussions by providers. All but one LC group participant (27/28) reported receiving useful information about breastfeeding benefits and mechanics, particularly during and after their hospital stay:

B493: I liked [the meetings with the LC] a lot, 'cause she had a booklet and she would sit there and be like this is what happens and explain it to me. 'Cause she had 5 sons and told me what her experience was and you know she showed me; this is what you produce, the colostrum is the beginning first 3 days, and told me how I felt.

—(LC group, multiparous 31 years old, U.S.-born, intended mixed feeding, 1-month mixed)

B22: She was very good at explaining. Like how you have to hold the baby. Especially for mothers who are having the baby for the first time. And they explain everything about the breastfeeding. And the problems associated with the breastfeeding. And how we can deal with that, you know.

—(EP+LC group, primiparous 38 years old, foreign-born, intended exclusive breastfeeding, 1-month exclusive breastfeeding)

LC support in establishing and maintaining breastfeeding. LC group women offered the strongest, most concrete reports of how the study affected feeding, especially in the first few days. Particularly for women who intended mixed feeding at baseline, LC help in early establishment of breastfeeding likely prevented exclusive formula feeding:

B222: The nurses were actually telling me "oh, give her some formula. You know she's still hungry. You're not producing enough yet." And [the LC] just kind of put my mind at ease, like, you know, nobody produces that much in the beginning. And, it's gonna take a little while. But it's better for them. She helped me. Showed me how to position the baby.

—(EP+LC group, primiparous 23 years old, U.S.-born, intended mixed feeding, 1-month mixed)

The LC was seen as an ally in breastfeeding, especially when women were faced with lack of encouragement from family or hospital staff. In these cases, LC support bolstered women's confidence in their decision to breastfeed:

P172: Um, I liked meeting with [the LC]....She came and visited me in the hospital, which was a big help.... I was originally planning to breastfeed but it was just nice knowing that somebody was there, because even though people know that breastmilk is the best, my family wasn't as supportive of it as I initially assumed they would be. So, it was just nice, just having somebody in my corner to kinda be there....

—(EP+LC group, multiparous 31 years old, U.S.-born, intended mixed feeding, 1-month mixed)

LCs also provided hands-on training and encouragement, especially for women facing breastfeeding difficulties. Of the nine women in an LC group who reported difficulties with breastfeeding mechanics while in hospital, all reported the influence of LCs in addressing this issue. Seven of nine (77.7%) were still breastfeeding at 1 month, and three of nine were exclusively breastfeeding:

B222: She [the LC] had an impact because when I first started I didn't think I was gonna continue with it because it was so hard the first couple of days in the hospital. But after I seen her the last day I was there it was good. She helped me a lot. So, I felt better about breastfeeding.

—(EP+LC group, primiparous 23 years old, U.S.-born, intended mixed feeding, 1-month mixed)

B322: I remember when I was feeling worried and frustrated that he was fussy and was not latching on.... She told me to give him a little milk first from bottle, then have him latch. Cause he was having trouble latching, and I kept trying and trying and I did not give up on the breastfeeding.

—(LC group, primiparous 37 years old, U.S.-born, intended mixed feeding, 1-month mixed)

LCs' accessibility across the continuum of care, by phone and in person, supplied the expertise and encouragement needed to navigate potential barriers to continued breastfeeding. In the 6-month qualitative exit interview, fewer women in an LC group cited maternal medication or low milk production as a barrier to breastfeeding in the first weeks or months after birth, compared with the EP-only and Control groups:

B162: Every time I was breastfeeding, I would get depressed so I had to call her.... I left a message and she called me right back.

—(EP+LC group, multiparous 31 years old, foreign-born, intended exclusive breastfeeding, 1-month exclusive breastfeeding)

B493: She met with me one on one and taught me how the baby latches on.... And even if I had any questions they gave me their cell phone numbers where I could reach them and they could help, which I think is great.... She came and visited in me right after [the birth], she came twice. She brought a pump and showed me how to use it. And even afterwards, she would call me to check on me to see everything was okay.

—(LC group, multiparous 31 years old, U.S.-born, intended mixed feeding, 1-month mixed)

Discussion

At 6 months postpartum, we explored participants' perceptions of the study's effect upon feeding knowledge, attitudes, and behaviors. Simply asking women about infant feeding increased their consciousness of feeding practices, replicating results from prior work.¹⁵ However, those in a treatment group (EP and/or LC) focused more on how the interviews affected breastfeeding, while controls emphasized food intake. Results thus suggest that brief standardized assessments of feeding by staff from the mother or child's medical home, in conjunction with provider-expressed support for breastfeeding, may support and increase breastfeeding.

Women intending to combine breastmilk with formula reported the strongest study effects upon feeding attitudes and knowledge of breastfeeding benefits. Thus, interventions for these women, 45% of the sample, may forestall exclusive formula feeding. Strong statements in support of LCs suggest that this intervention, in particular, may have "shifted the balance" for these women. Of women who intended to exclusively breastfeed at baseline, those enrolled in an EP and/or LC group were more likely to report a study influence on breastfeeding than controls, suggesting that interventions are potent even among those intending to exclusively breastfeed.

Providers tend to underestimate their influence upon infant feeding,¹⁶ which can be significant,¹⁷ particularly when adequately trained.¹⁸ EPs bolstered this influence by encouraging providers to offer concrete details about breastfeeding benefits as part of routine and continuous prenatal care. Those in the EP-only group cited an even stronger provider influence upon breastfeeding than those in the EP+LC group, but this may reflect, comparatively, the latter groups' greater recollection of the ongoing, intensive LC intervention versus the (prenatal only) EP intervention. Indeed, the EP+LC group was most able to recall specific breastfeeding benefits at the 6-month exit interview. By contrast, recall by controls of provider support was tepid and tended toward generic comments, such as "Breast is best."

LC group participants provided frequent, strong, and detailed statements about how the LCs facilitated breastfeeding initiation and duration. All but one voluntarily recalled useful advice or technical assistance from the study LC. The primary reasons for early weaning are concerns about milk supply or quality and latching difficulties; both reflect a lack of skilled, personalized lactation support.¹⁹ Our results bear this out.

Those in an LC group were least likely to cite low milk supply or contraindicated maternal medications as a barrier to breastfeeding, and all LC group participants who experienced difficulty with breastfeeding mechanics in the hospital were still breastfeeding at 1 month.

Limitations of this study include the potential for recall and social desirability biases and the limited data on what transpired during the EP interventions. Regarding recall bias, we note participants' recall of nongeneric, specific details (e.g., reports of LCs researching whether acetaminophen was consistent with breastfeeding). With regard to social desirability, although participants expressed some negative opinions, we imagine some were not shared with us. In addition, provider notes about the EP encounters were brief—often only a signature that they had addressed the EP. Still, the detailed prenatal discussion recalled by those in the EP groups, and the EP groups' greater likelihood of reporting provider support for breastfeeding, lead us to assume that the EPs were delivered as planned.

Conclusions

Although low-income minority women are often aware of breastfeeding benefits and express the desire to breastfeed, sociocultural and practical challenges lead to ambivalence in practice.^{19,20} Our findings affirm women's perceptions of the utility of combined prenatal and postpartum provider and LC interventions in reinforcing breastfeeding intention and duration, especially when faced with lack of support from family or medical professionals,²¹ and in addressing early postpartum lactation difficulties.²² They thus underscore the need for breastfeeding interventions across the continuum of care.

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Disclosure Statement

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Appendix

TABLE A1. ELECTRONIC PROMPT QUESTIONS

Prenatal visit	Electronic prompt question
1	1. What are your plans for breastfeeding? 2. What are your concerns about breastfeeding? 3. What have you heard about how long and how much to breastfeed? Clarify: 6 months, only breastmilk, is the goal.
2	4. What have you heard about breastfeeding and infant health? Clarify: Babies fed all breastmilk for 6 months have less respiratory and stomach illness, may also reduce risk of overweight later.
3	5. What ideas about feeding babies are specific to your family or culture? 6. If you breastfed before, do you have any concerns from this experience? 7. How does your partner/family feel about you breastfeeding? 8. How have your breasts changed since you've been pregnant?
4	9. Do you have concerns about how medications, or any smoking, alcohol, or substance abuse might affect breastfeeding?
5	10. Who will help out at home after the baby is born? 36 weeks encourage breastfeeding best practices: <ul style="list-style-type: none"> • Immediate skin-to-skin contact • Limit mom/baby separation (room in)