ARTICLE

A Randomized Trial Assessing the Efficacy of Peer Counseling on Exclusive Breastfeeding in a Predominantly Latina Low-Income Community

Alex K. Anderson, PhD, MPH; Grace Damio, MS, CD-N; Sara Young, MSN, RN, IBCLC; Donna J. Chapman, PhD, RD; Rafael Pérez-Escamilla, PhD

Objective: To assess the efficacy of peer counseling to promote exclusive breastfeeding (EBF) among low-income inner-city women in Hartford, Conn.

Design: Participants recruited prenatally were randomly assigned to either receive support for EBF from a peer counselor plus conventional breastfeeding support (peer counseling group [PC]) or only conventional breastfeeding support (control group [CG]) and followed through 3 months post partum.

Setting: Low-income predominantly Latina community.

Participants: Expectant mothers, less than 32 weeks gestation and considering breastfeeding (N=162).

Intervention: Exclusive breastfeeding peer counseling support offering 3 prenatal home visits, daily perinatal visits, 9 postpartum home visits, and telephone counseling as needed.

Main Outcome Measures: Exclusive breastfeeding rates at hospital discharge, 1, 2, and 3 months post partum (n=135).

Results: At hospital discharge, 24% in the CG compared with 9% in the PC had not initiated breastfeeding, with 56% and 41%, respectively, nonexclusively breastfeeding. At 3 months, 97% in the CG and 73% in the PC had not exclusively breastfed (relative risk [RR]=1.33; 95% CI, 1.14-1.56) during the previous 24 hours. The likelihood of nonexclusive breastfeeding throughout the first 3 months was significantly higher for the CG than the PC (99% vs 79%; RR=1.24; 95% CI, 1.09-1.41). Mothers in the CG were less likely than their PC counterparts to remain amenorrheic at 3 months (33% vs 52%; RR=0.64; 95% CI, 0.43-0.95). The likelihood of having 1 or more diarrheal episode in infants was cut in half in the PC (18% vs 38%; RR=2.15; 95% CI, 1.16-3.97).

Conclusion: Well-structured, intensive breastfeeding support provided by hospital and community-based peer counselors is effective in improving exclusive breastfeeding rates among low-income, inner-city women in the United States.

Arch Pediatr Adolesc Med. 2005;159:836-841

Author Affiliations: Department of Nutritional Sciences, University of Connecticut, Storrs (Drs Anderson, Chapman, and Pérez-Escamilla); Center for Community Nutrition, Hispanic Health Council, Hartford, Conn (Ms Damio); and Hartford Hospital, Hartford, Conn (Ms Young).

ALTHOUGH BREASTFEEDING support and education are being provided by public health and other health care staff to pregnant and nursing mothers, breastfeeding incidence, duration, and exclusivity still remain low among low-income groups, which are over-represented by minority communities in the United States. Breastmilk provides the ideal nutrition for infants[1] and therefore is endorsed as the best and healthiest way to feed them.[2-5] Breastmilk provides significant developmental benefits, decreasing the risk for acute and chronic diseases among infants,[6-11] and offers unique immunologic, psychologic, social, economic, and environmental benefits to the infant and society in general.[4,7,12-16] Thus, the American Academy of Pediatrics recommends that infants in the United States be exclusively breastfed for 6 months after birth followed by the introduction of appropriate complementary foods and continued breastfeeding until at least 12 months of age.[4,7,17] This recommendation is consistent with World Health Organization infant feeding guidelines.[18]

Even though the incidence of breastfeeding is on the increase after many years of decline[19] in the continental United States, it is still short of the proposed levels outlined in *Healthy People 2010* objectives of 75% breastfeeding initiation rate at hospital discharge with 50% of infants still breastfeeding at 6 months and 25% breastfeeding at 12 months.[5,20] Because

there is no national goal stated for exclusive breastfeeding (EBF), it is not surprising that this feeding method has not been actively promoted in the United States.

A number of strategies have been used to promote optimal breastfeeding behaviors but most of these efforts concentrate only around the time of delivery and end at discharge from the hospital.[21,22] Community-based breastfeeding peer counseling has been suggested to be an alternative breastfeeding promotion strategy with support that extends beyond the hospital. The vast majority of published EBF peer counseling randomized controlled trials have been conducted in countries other than the United States. All of these studies have found a positive impact of peer counseling on EBF.[23-27]

Chapman et al[28] recently demonstrated the effectiveness of an existing peer counseling program to increase breastfeeding incidence among low-income women in Hartford, Conn. However, this program did not have any effect on EBF rates.[28] It is therefore possible that a more intensive peer counseling model may be needed to impact EBF rates in low-income communities in the United States.

We therefore conducted this randomized controlled trial to measure the efficacy of community-based peer counseling on EBF rates among low-income mothers residing in the greater Hartford area, who seek obstetrical services at Hartford Hospital.

METHODS

SETTING

The study was conducted in the greater Hartford area of Connecticut, which is composed of 29 towns and cities.[29] This study was a collaboration between the University of Connecticut, the Hispanic Health Council, and Hartford Hospital, and was approved by the Institutional Review Boards of each institution.

STUDY DESIGN

The study was conducted between January 2003 and July 2004. Participants were recruited from the waiting areas of the 3 clinic teams that provide prenatal care to pregnant women at the Women's Ambulatory Health Services Clinic of Hartford Hospital. Participants were randomly assigned to either the intervention or control group by the study field coordinator. Recruited subjects were entered into the database at the end of every week. The SPSS software for Windows was used to randomly assign subjects to study groups. Mother-infant dyads in both groups were followed up through 3 months post partum via phone interviews (**Figure 1**).

RECRUITMENT AND INCLUSION CRITERIA

The study involved a 3-stage screening of participants. First, medical records of all pregnant women attending the prenatal clinic were reviewed on mornings of each of the 4 predetermined days of the week. A list of names of pregnant women and time of appointment within the day were selected if they met the following criteria: (1) 18 years or older; (2) gestational age of 32 weeks or younger; (3) healthy; and (4) absence of any medical condition (such as diabetes, hypertension, HIV/AIDS or using illegal drugs) that is likely to impair successful breastfeeding. Women who met the inclusion criteria for participation based on the medical record review were

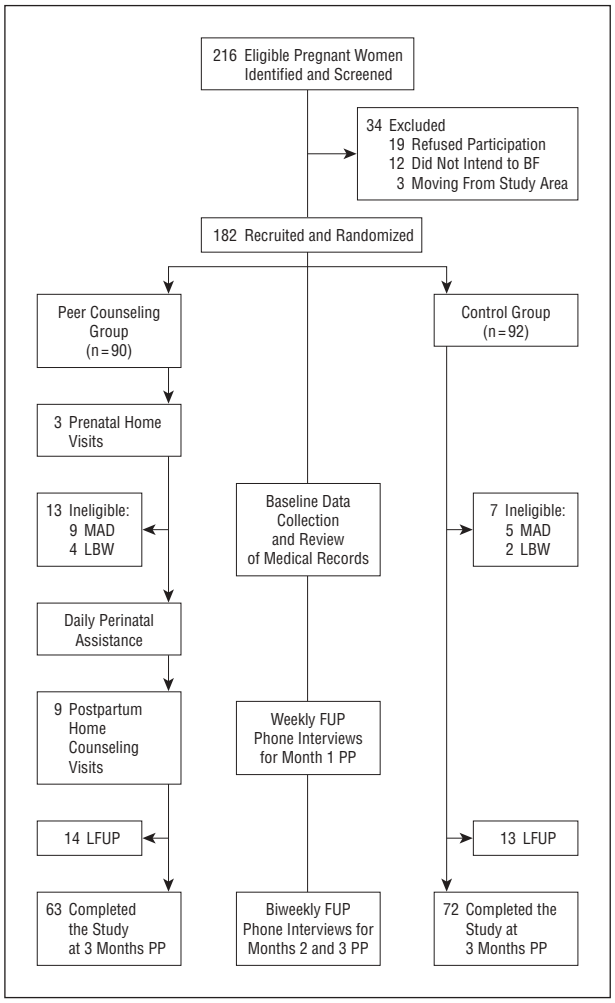

Figure 1. Schematic presentation of study design. FUP indicates follow-up; MAD, missed at delivery or moved from study area; LBW, low birth weight; LFUP, lost to follow-up; and PP, post partum.

subsequently approached by a recruiter to introduce the study. To qualify for participation at this second stage, the woman should have been: (1) considering breastfeeding her newborn; (2) planning to deliver at Hartford Hospital; (3) willing to stay in the study area for at least 3 months after delivery; (4) living in a household earning <185% of the federal poverty level; (5) available to be contacted by telephone; and (6) willing to participate in the study. Women who met the inclusion criteria and agreed to participate signed a written informed consent and responded to questions on demographic as well as past breastfeeding practices. The third stage of screening occurred during postpartum hospitalization to ascertain if both the mother and her infant still qualified for the study. The mother had to be free of any known medical condition that would prevent her from successfully exclusively breastfeeding. For the newborn to be included, he/she had to be: (1) born at term (≥36 weeks gestation); (2) with normal birth weight (≥2.5 kg); (3) with no neonatal medical complications requiring treatment in the neonatal intensive care unit; and (4) with Apgar scores at 1 and 5 minutes greater than or equal to 6.

PEER COUNSELORS

Prior to the start of the study, 2 mothers from the greater Hartford area, who had successfully breastfed a child for no less than 6 months and who had the motivation to help other mothers

breastfeed their infants, were hired. An international board-certified lactation consultant trained these women over 2 weeks using the 40-hour World Health Organization/United Nations Children's Fund Breastfeeding Counseling Training Course[30] and the Hispanic Health Council Breastfeeding Training Manual,[31] while the EBF component was handled by the study field coordinator. The training included theory (anatomy and physiology of the breast and management of breastfeeding), role-plays, and hands-on practice with mother-infant dyads, and communication skills, as well as observing the lactation consultant during routine ward rounds and home visits. The peer counselors were observed for 2 months by the lactation consultant, who assisted women with breastfeeding problems.

CONTROL PROCEDURES

Hartford Hospital staff are trained to provide lactation education and support to mothers who attend the prenatal clinic and deliver at the hospital because it is the only hospital certified by the World Health Organization/United Nations Children's Fund as a Baby-Friendly Hospital in the state of Connecticut. The hospital also provides a breastfeeding warm line that nursing mothers can call 24 hours a day for support and counseling from a staff nurse/lactation consultant during lactation crises after hospital discharge. Women assigned to the control group (CG) only received conventional breastfeeding education prenatally from the Women's Ambulatory Health Services clinic staff. On delivery, they received hands-on breastfeeding assistance and education from the maternity ward nursing staff. If any of these mothers experienced breastfeeding problems requiring assistance beyond that routinely provided by staff nurses, the hospital's lactation consultant on duty was called to assist the patient. The CG participants were therefore treated similarly to all private paying patients who delivered their babies at Hartford Hospital.

INTERVENTION PROCEDURES

Women assigned to the peer counseling group (PC) were offered 3 prenatal home visits, 9 postpartum home visits, and daily in-hospital visits during postpartum hospitalization, from the assigned peer counselor. This was in addition to the routine breastfeeding support and education received by the CG. Peer counselors contacted their clients within a week of assignment to make an appointment for the first prenatal home visit, which normally occurred between the first and second week after enrollment. The second prenatal home visit was scheduled during the first prenatal home visit and occurred before the 36th week, and the third occurred on the 36th week. During these 3 prenatal home visits, the peer counselor reviewed the benefits and reasons for EBF, avoidance of the use of feeding bottles and pacifiers, and tested for inverted nipples. They also reviewed behaviors that impede early initiation and successful breastfeeding and explained why EBF babies do not need water during the first 6 months of life, infant cues for readiness to breastfeed, and proper latch-on technique or positioning. If the woman had a video cassette recorder she was provided with an opportunity to watch a breastfeeding video. The entire family was encouraged to participate in the education, especially the principal person expected to support the woman after delivery.

The assigned peer counselor also visited the mother-infant pair at least once a day starting within 24 hours after delivery and continued for as long as the dyad remained hospitalized. The 9 postpartum home visits were planned as follows: 3 in the first week post partum, 2 in the second week, and 1 per week from weeks 3 to 6 to provide hands-on breastfeeding support and counseling according to the mother's needs. The mothers in the PC had both the beeper and cell phone numbers of the peer counselor to be contacted during lactation crises occurring between scheduled home visits. The content of the postpartum home visits and any phone counseling were based on the specific needs for breastfeeding education and support of the mother-infant pair.

DATA COLLECTION

A bilingual and bicultural research staff member conducted the interviews for data collection with support from the study field coordinator whenever she was not available. Baseline screening data at the time of recruitment consisted of demographic characteristics, pregnancy intentions, parity, previous breastfeeding experience, intended breastfeeding and EBF duration, and eligibility for the Special Supplemental Nutrition Program for Women, Infants, and Children, and the Food Stamp Program.

A second interview and review of medical records occurred during the postpartum hospitalization. Information was obtained on prenatal peer counseling received, breastfeeding class attendance, use of breastmilk substitutes, and partner's level of breastfeeding support. Medical records provided information on duration of labor, anesthesia use, delivery method, maternal and infant anthropometry, gestational age and Apgar scores.

For the follow up, participants were interviewed weekly during the first month and biweekly during the second and third months via the phone, to collect data on infant feeding practices, breastfeeding difficulties, social support system, and onset of lactation (assessed during the first week post partum). Infant morbidity was assessed based on the presence or absence of diarrhea and ear infection. Diarrhea was defined as the infant having 3 or more watery stools within the 24 hours preceding the survey. Information was also obtained on lactational amenorrhea status, assessed by the presence or absence of menses reported by the subject during the biweekly data collection. Blood spotting within the first 2 months post partum was classified as false bleeding.[32] Mothers who never experienced any bleeding between the second and third months post partum were categorized as being amenorrheic. Exclusive breastfeeding was defined using "24-hour" recall (For the past 24 hours, did your baby receive any other food besides breastmilk?), "previous week" recall (Over the past week, how did you feed your baby?), and the "ever given" recall (Did the infant receive any foods other than breastmilk since birth?). All questionnaires used for data collection had previously been tested and used in this community[28] but modified to include specific questions on EBF.

To determine peer counseling coverage across time, the number of home counseling visits made was self reported by the study participants in the weekly and biweekly interviews.

DATA ENTRY AND STATISTICAL ANALYSES

Statistical software SPSS 12.0 (SPSS Inc, Chicago, Ill) was used for data entry and all analyses. The key dependent variable for these analyses was EBF status at hospital discharge, 1, 2, and 3 months post partum using the "previous 24 hours," the "previous week," and at 3 months the "ever given" recall definitions. We used χ^2 analysis to test if there were significant differences between groups in sociodemographic and biomedical factors. This test was also used to compare the following outcomes between the groups and across time: EBF and any breastfeeding, onset of lactation, lactational amenorrhea, and infant morbidity. Analysis of variance was used to determine between-group differences in gestational age at delivery, infant birth weight and birth length, as well as Apgar scores. Because of the

Table 1. Baseline Sociodemographic and Biomedical Characteristics of 135 Women

Characteristics	No. (%) PC	No. (%) CG
Maternal age, y		
<20	6 (9.5)	12 (16.7)
20-30	43 (68.3)	48 (66.7)
≥30	14 (22.2)	12 (16.7)
Marital status		
Married/cohabiting	25 (39.7)	19 (26.4)
Single	38 (60.3)	53 (73.6)
Race/ethnicity		
Hispanic	51 (81.0)	46 (63.9)
Black	9 (14.3)	15 (20.8)
Caucasian	1 (1.6)	9 (12.5)
Other	2 (3.1)	2 (2.8)
Highest level of education		
<High school	20 (31.8)	27 (37.5)
High school graduate	23 (36.4)	22 (30.6)
>High school	20 (31.8)	23 (31.9)
Preferred language		
English	26 (41.3)	50 (69.4)
Spanish	32 (50.8)	20 (27.8)
Both English and Spanish	5 (7.9)	2 (2.8)
Parity		
Primiparous	35 (55.6)	35 (48.6)
Multiparous	28 (44.4)	37 (51.4)
Pregnancy intention		
Surprise	46 (73.0)	61 (84.7)
Wanted later	19 (30.2)	39 (54.2)
Previous BF experience*	25 (89.3)	29 (78.4)
Planned BF duration, mo		
<6	10 (20.4)	24 (46.2)
6-12	37 (75.5)	26 (50.0)
>12	2 (4.1)	2 (3.8)
Employment status		
Full-time	7 (11.1)	7 (9.7)
Part-time	15 (23.8)	21 (29.2)
Unemployed	41 (65.1)	44 (61.1)
WIC participation	58 (92.1)	64 (88.9)
Mean ± SD birth weight, kg	3.39 ± 0.43	3.46 ± 0.46
Mean ± SD birth length, cm	50.44 ± 2.12	51.32 ± 2.31
Mean ± SD onset of lactation, d	3.59 ± 1.60	3.29 ± 1.44

Abbreviations: BF, breastfeeding; CG, control group; PC, peer counseling group; WIC, Special Supplemental Nutrition Program for Women, Infants, and Children.
*Among multiparae.

lack of association of EBF with the variables unequally distributed between the groups at baseline (preferred language of interview, planned pregnancy, intended duration of breastfeeding, and infant birth length), we report bivariate results. Analyses were completed on an intention to treat basis. Results are expressed as relative risk (RR) of nonexclusive breastfeeding of mothers in the PC in relationship to mothers in the CG, and considered significant if the 95% confidence interval (CI) excludes unity.

RESULTS

SAMPLE CHARACTERISTICS

Of the 182 mothers who gave their consent to be enrolled into the study prenatally, 162 were eligible at delivery; of these eligible women, 135 successfully completed the 3-month follow-up of the intervention, representing an attrition rate of 16.7% (Figure 1). There were no significant differences in the baseline characteristics between respondents excluded from the final analysis and those who completed the 3-month follow-up (data not shown).

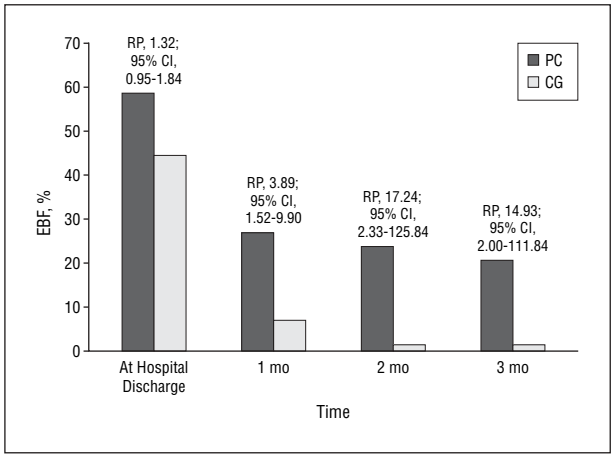

Figure 2. Relative probability (RP) of exclusive breastfeeding since birth of intervention group relative to control group. CI indicates confidence interval; CG, control group; EBF, exclusive breastfeeding; PC, peer counseling group; RP, relative probability.

Table 1 shows the participant characteristics in both groups. With the exception of preferred language of interview, pregnancy intentions, planned breastfeeding duration, and infant birth length, there were no significant between-group differences in sociodemographic characteristics at baseline (Table 1). The majority of respondents in both groups were between 20 and 30 years old at delivery, and most of them were single or unmarried (Table 1). Over two thirds of mothers in both groups had no more than a high school education and were unemployed at baseline. Past breastfeeding experience was similar in both groups (Table 1).

COUNSELING COVERAGE

Coverage by the peer counselors ranged from 56 (88.9%) of 63 for the prenatal home visits to 40 (63.5%) of 63 at week 6 post partum. The average total duration of the prenatal home visits and in-hospital visits was 2.6±1.9 hours and 2.2±2.0 hours, respectively. Approximately 3% of mothers in the CG reported having received breastfeeding counseling from the existing hospital's peer counseling service during postpartum hospitalization at the maternity ward. Four mothers in the PC declined to see the study peer counselor.

IMPACT OF INTERVENTION

At hospital discharge, 17 (24%) of 72 mothers in the CG compared with 6 (9%) of 63 in the PC had not initiated breastfeeding (RR=2.48; 95% CI, 1.04-5.90), with the number of nonexclusive breastfeeding being 40 (56%) out of 72 and 26 (41%) out of 63 (RR=1.35; 95% CI, 0.94-1.93), respectively. There was no significant difference

Table 2. Group Incidence and Relative Risk of Nonexclusive Breastfeeding Across Time

	Previous 24 Hours' Recall EBF Definition			Previous Week's Recall EBF Definition			Since Birth Recall EBF Definition		
	CG (%)	PC (%)	RR (95% CI)	CG (%)	PC (%)	RR (95% CI)	CG (%)	PC (%)	RR (95% CI)
1 mo	66/72 (91.7)	41/63 (65.1)	1.41 (1.16-1.71)	66/72 (91.7)	42/63 (66.7)	1.38 (1.14-1.66)	67/72 (93.1)	46/63 (73.0)	1.27 (1.08-1.50)
2 mo	69/72 (95.8)	45/63 (71.4)	1.34 (1.14-1.58)	69/72 (95.8)	47/63 (74.6)	1.29 (1.10-1.50)	71/72 (98.6)	48/63 (76.2)	1.29 (1.12-1.49)
3 mo	70/72 (97.2)	46/63 (73.0)	1.33 (1.14-1.56)	70/72 (97.2)	47/63 (74.6)	1.30 (1.12-1.51)	71/72 (98.6)	50/63 (79.4)	1.24 (1.09-1.41)

Abbreviations: CG, control group; CI, confidence interval; EBF, exclusive breastfeeding; PC, peer counseling group; RR, relative risk.

between the control and intervention groups in the rate of not breastfeeding at 3 months (46 [63.9%] of 72 vs 32 [50.8%] of 63; RR=1.26; 95% CI, 0.93-1.70).

Mothers in the PC were 15 times more likely than their CG counterparts to have EBF throughout the study (**Figure 2**). The rate of nonexclusive breastfeeding in the CG was significantly higher compared with the PC at months 1, 2, and 3, respectively, using the "previous 24 hours" or the "previous week" recall definitions. At 3 months post partum, 71 (98.6%) of 72 mothers were not exclusively breastfeeding their infants since birth in the CG compared with 50 (79.4%) of 63 in the PC (RR=1.24; 95% CI, 1.09-1.41) (**Table 2**). Mothers in the CG were more likely than those in the PC to have their menses return at 3 months post partum (48 [66.7%] of 72 vs 30 [47.6%] of 63; RR=1.4; 95% CI, 1.03-1.90). Risk of experiencing 1 or more diarrhea episodes during the study was higher in CG infants than their PC counterparts (27 [37.5%] of 72 vs 11 [17.5%] of 63; RR=2.15; 95% CI, 1.16-3.97).

COMMENT

Findings from this study indicate that the use of trained community-based peer counselors, within the context of a Baby Friendly Hospital, is a very efficacious approach to promote EBF in the United States.

Results from our study show that EBF rates across time were significantly and substantially higher in the intervention group. Furthermore, these findings held irrespective of which EBF definition was used. Our results are in agreement with similar randomized, controlled trials conducted in other countries.[23-27] The only 2 randomized studies conducted in the United States using a peer counseling approach to promote breastfeeding did not focus on EBF. The study by Pugh et al[33] used a team of a community health nurse and a peer counselor to provide breastfeeding support to the intervention group in addition to routine care. The authors reported higher rates of any breastfeeding at 3 and 6 months among the intervention than the control group, but there was no significant effect on EBF. The other study by Chapman et al[28] also reported increased breastfeeding incidence among low-income mothers who received peer counselor support compared with their control counterparts, but there was no impact on EBF. The rate of breastfeeding initiation found in this study is similar to that found by Chapman et al[28] in their study evaluating the effectiveness of a peer counseling program in the target community. The lack of significance in the rates of EBF reported by Chapman et al[28] could be attributed to the content and lower intensity of their peer counseling support as the focus was to promote any breastfeeding. The EBF rates seen in our study are further validated by the significantly higher proportion of lactational amenorrhea at 3 months post partum reported among mothers in the PC compared with mothers in the CG as well as decreased infant diarrhea incidence.

One limitation of this randomized study is that it was not a double-blind study and the interviewer knew the study hypotheses. However, steps were taken to prevent interviewer bias by asking questions regarding peer counselor contact at the very end of each follow-up interview session. The attrition rate in this study was not excessive (16.7%) but could have resulted in attrition bias even though the characteristics of dropouts was similar to those completing the follow-up.

In conclusion, our results show that breastfeeding peer counseling is a highly efficacious method for promoting EBF among inner-city women in the United States. This is remarkable as the community studied is known for its exceedingly low rates of EBF and strong preference toward feeding formula even if they choose to breastfeed their infants.[28,34] We have shown in this study the great potential of promoting EBF among low-income women through peer counseling in the United States. However, further studies are needed to determine the cost-effectiveness of EBF peer counseling in this country.

Accepted for publication: March 8, 2005.
Correspondence: Alex K. Anderson, PhD, MPH, 261 Dawson Hall, Department of Foods and Nutrition, University of Georgia, Athens, GA 30602 (anderson@fcs.uga.edu).
Funding/Support: This study was supported by the Centers for Disease Control and Prevention (Atlanta, Ga) through a subcontract by the Association of Teachers of Preventive Medicine.
Acknowledgment: We thank the lactation consultant Aleja Rosario, peer counselors Nelida Traveglini and Juana Acuna, and interviewer Candra Carr. We also thank the administrative support provided by Lisa Phillips throughout the study. Our greatest thanks go to all mother-infant dyads who participated in this study.

REFERENCES

1. Dewey KG, Heinig MJ, Nommsen LA, Peerson JM, Lonnerdal B. Growth of breast-fed and formula-fed infants from 0 to 18 months: the DARLING Study. *Pediatrics*. 1992;89:1035-1040.

2. World Health Organization. The optimal duration of exclusive breastfeeding: results of a WHO systematic review. *Indian Pediatr*. 2001;38:565-567.
3. Institute of Medicine. *Nutrition During Lactation*. Washington, DC: National Academy Press; 1991.
4. American Academy of Pediatrics, Work Group on Breastfeeding. Breastfeeding and the use of human milk. *Pediatrics*. 1997;100:1035-1039.
5. US Department of Health and Human Services. *Healthy People 2010*. Washington, DC: US Government Printing Office; 2000.
6. Birch E, Birch D, Hoffman D, Hale L, Everett M, Uauy R. Breast-feeding and optimal visual development. *J Pediatr Ophthalmol Strabismus*. 1993;30:33-38.
7. American Academy of Pediatrics, Work Group on Breastfeeding. Breastfeeding and the use of human milk. *Breastfeed Rev*. 1998;6:31-36.
8. Dewey KG, Heinig MJ, Nommsen-Rivers LA. Differences in morbidity between breastfed and formula fed infants. *J Pediatr*. 1995;126:696-702.
9. Florey CD, Leech AM, Blackhall A. Infant feeding and mental and motor development at 18 months of age in first born singletons. *Int J Epidemiol*. 1995; 24(suppl):S21-S26.
10. Hanson LA, Wiedermann U, Ashraf R. Effects of breastfeeding on the baby and on its immune system. *Food Nutr Bull*. 1996;17:384-389.
11. Lanting CI, Fidler V, Huisman M, Touwen BC, Boersma ER. Neurological differences between 9-year-old children fed breast-milk or formula-milk as babies. *Lancet*. 1994;344:1319-1322.
12. Bonuck K, Arno PS, Memmott MM, Freeman K, Gold M, Mckee D. Breastfeeding promotion interventions: good public health and economic sense. *J Perinatol*. 2002;22:78-81.
13. Ball TM, Bennett DM. The economic impact of breastfeeding. *Pediatr Clin North Am*. 2001;48:253-262.
14. Tuttle CR, Dewey KG. Potential cost savings for Medi-Cal, AFDC, Food Stamps, and WIC programs associated with increasing breast-feeding among low-income Hmong women in California. *J Am Diet Assoc*. 1996;96:885-890.
15. Montgomery DL, Splett PL. Economic benefit of breast feeding infants enrolled in WIC. *J Am Diet Assoc*. 1997;97:379-385.
16. Ball TM, Wright AL. Health care costs of formula feeding in the first year of life. *Pediatrics*. 1999;103(Suppl):870-876.
17. American Academy of Pediatrics. Breastfeeding and the use of human milk. *Pediatrics*. 2005;115:496-506.
18. World Health Organization. Global strategy for infant and young child feeding. Available at: http://www.unicef.org/media/files/gs_infant_feeding_text_eng.pdf. Accessed June 22, 2005.
19. Ryan AS. The resurgence of breastfeeding in the United States. *Pediatrics*. 1997; 99:1-5.
20. Breastfeeding practices: results from the 2003 National Immunization Survey [press release]. Atlanta, Ga: Centers for Disease Control and Prevention; August 11, 2004.
21. Popkin BM, Canahuati J, Bailey PE, O'Gara C. An evaluation of a national breastfeeding promotion program in Honduras. *J Biosoc Sci*. 1991;23:5-21.
22. Sikorski J, Renfrew MJ, Pindoria S, Wade A. Support for breastfeeding mothers. *The Cochrane Database of Systematic Reviews* [serial online]. June 20, 2003.
23. Morrow AL, Lourdes Guerrero M, Shults J, et al. Efficacy of home-based peer counseling to promote exclusive breastfeeding: a randomized controlled trial. *Lancet*. 1999;353:1226-1231.
24. Haider R, Ashworth A, Kabir I, Huttly SRA. Effect of community-based peer counselors on exclusive breastfeeding practices in Dhaka, Bangladesh: a randomized controlled trial. *Lancet*. 2000;356:1643-1647.
25. Haque MF, Hussain M, Sarkar AK, Hoque MM, Anjuman Ara F, Sultana S. Breastfeeding counseling and its effect on the prevalence of exclusive breast feeding. *J Health Popul Nutr*. 2002;20:312-316.
26. Jenner S. The influence of additional information, advice and support on the success of breastfeeding in working class primiparas. *Child Care Health Dev*. 1988; 14:319-328.
27. Dennis CL, Hodnett E, Gallop R, Chalmers B. The effect of peer support on breastfeeding duration among primiparous women: a randomized controlled trial. *CMAJ*. 2002;166:21-28.
28. Chapman DJ, Damio G, Young S, Perez-Escamilla R. Effectiveness of breastfeeding peer counseling in a low-income, predominantly Latina population: a randomized trial. *Arch Pediatr Adolesc Med*. 2004;158:897-902.
29. Capital Region Council of Government. *Atlas of Minority and Low-Income Populations in the Capitol Region*. Hartford, Conn: Capital Region Council of Government; 2003.
30. World Health Organization/United Nations Children's Fund. *Breastfeeding Counselling: A Training Course*. Geneva, Switzerland: World Health Organization and United Nations Children's Fund; 1993.
31. Damio G, Hill N, Lebron E. *Breastfeeding: Heritage and Pride*. Hartford, Conn: Hispanic Health Council; 1995.
32. Perez A, Labbok MH, Qeenan JT. Clinical study of the lactational amenorrhoea method for family planning. *Lancet*. 1992;18:968-970.
33. Pugh LC, Milligan RA, Frick KD, Spatz D, Bronner Y. Breastfeeding duration, costs, and benefits of a support program for low-income breastfeeding women. *Birth*. 2002;29:95-100.
34. Perez-Escamilla R, Himmelgreen D, Segura-Millan S, et al. Prenatal and perinatal factors associated with breast-feeding initiation among inner-city Puerto Rican women. *J Am Diet Assoc*. 1998;98:657-663.