

IMPACT OF EDUCATION AND TRAINING ON TYPE OF CARE
PROVIDED BY BREASTFEEDING PEER COUNSELORS

by

ELIZABETH MARIE SULLIVAN

(Under the Direction of Alex Anderson)

ABSTRACT

Background: Studies using breastfeeding peer counselors (BFPCs) have repeatedly shown positive impact on breastfeeding initiation, exclusivity and duration, particularly among low-income mothers, although other studies have not. **Methods:** This cross-sectional study was designed to ascertain the influence of educational attainment and duration of initial training on support and proficiency of BFPCs in communities across the US. Invitations to participate in this online survey were e-mailed to program coordinators of community health organizations who encouraged their BFPCs to participate. A total of 847 BFPCs who participated in the survey with complete data were included in the final data analysis. **Results:** Overall, education was not a significant predictor of support skills used during counseling sessions, but initial training duration did have a positive association with the use of many breastfeeding support skills. **Conclusion:** Further research is needed to examine the content and consistency of training curricula in BFPC programs across the US.

INDEX WORDS: Breastfeeding peer counselor, peer counselor training, breastfeeding, community-based breastfeeding organizations

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DEDICATION

I want to dedicate this work to my family, who have inspired me and encouraged me throughout this entire process. They helped me to realize that it's never too late in life to change your path, and that with passion and perseverance anyone can achieve their dreams. Thanks to Mom and Dad for everything you've done to help me through and by supporting me in every way possible. You've done more for me than you'll ever know, and I love you both so much for being the selfless people you are. And to my sister: you're the best friend a girl could ever have (aside from cats), and our friendship is even more special because you're my little sis. And lastly, to my Mamaw and Papaw: I love and miss you both so much, and I hope that I make you proud.

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CHAPTER 1

INTRODUCTION

Due to the superiority of human milk over other forms of human milk substitutes (HMS) in the early postpartum period, both the American Academy of Pediatrics (AAP) and the American Dietetic Association (ADA) recommend that infants be exclusively breastfed for the first six months of life and then supplemented with appropriate complementary foods for up to 12 months or longer if possible (1-3). The breastfeeding goals set forth in Healthy People 2010 had aimed to increase breastfeeding rates from the 1998 baseline to the 2010 target: the proportion of mothers who breastfeed their babies in early postpartum (from 64% to 75%), at six months (from 29% to 50%), and at one year (from 16% to 25%) as recommended by the AAP (4). In 2009 the Centers for Disease Control and Prevention (CDC) reported that although some specific states, particularly in the west and northeast have met or exceeded those goals, the nation as a whole fell short (5). This has led to retaining the same Healthy People 2010 goals for breastfeeding into the recently released Healthy People 2020 breastfeeding objectives for the country (6). The fact that these objectives have not been met and were retained as goals for the next decade suggest that pregnant and new mothers may not be getting adequate information about the importance of breastfeeding, nor the appropriate support needed for a new mother to be successful in breastfeeding. While certified lactation consultants are extremely valuable resources as knowledgeable breastfeeding supporters, they may not be able to reach all populations, particularly those most in need (low-income, immigrants/minorities and residing in

deprived communities). This is where another form of support may prove vital: breastfeeding peer counselors.

Peer counselors go by many names: peer educators, lay support, community outreach workers, and indigenous health care advisors. The concept of peer counseling was developed as a means of reaching out to educate, support, advise, and counsel individuals in need of help who otherwise do not have access to the mainstream healthcare services using lay persons. Whether that help relates to depression, diabetes management, breastfeeding, HIV/AIDS, nutrition, alcohol abuse, or any other health concern, is determined by the program that implements it. Over the years, studies have shown time and time again that peer counseling is an exceptionally effective means of implementing positive behavioral and lifestyle changes (7-9).

Peer counselors have been used to promote breastfeeding by agencies such as the Expanded Food and Nutrition Education Program (EFNEP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) with great success (10-12). Breastfeeding peer counselors (BFPCs) have been used extensively and effectively to promote breastfeeding in selected communities, especially low-income minority communities who otherwise do not breastfeed. What makes a peer so successful at giving support is her previous experience that she can relate to her client, which in turn helps the client to open up about themselves, creating a rapport. BFPC has repeatedly produced positive outcomes regarding breastfeeding, particularly with regards to increasing the rate of breastfeeding initiation and exclusivity, as well as extending breastfeeding duration (10, 13-15). An individual is not considered a peer counselor without having had personal and first-hand knowledge of that particular experience, and also identifying with the population she is supposed to serve. In many

cases, a peer counselor is recruited from the target population, which allows them to reach people who may otherwise be isolated, underserved, or potentially unaware of the services and information available to them (9).

Sufficient training is imperative to a successful program with positive health outcomes, and in the case of breastfeeding, increasing the proportion of mothers initiating as well as extending the duration of breastfeeding (12, 15-17). As mentioned previously, breastfeeding is an area in which peer counseling has proven to be very effective; however, there is not a standardized training curriculum to assure consistency from program to program. There are differences in knowledge and proficiency between a skilled professional and a peer educator, which can be exacerbated if inadequate training is provided (18). When counseling does not provide capable support in breastfeeding, there is a higher risk of failure in implementing good breastfeeding practices by mothers (19). While extensive research has been done to support the importance of BFPCs, to date there has not been a comprehensive nationwide study to assess the impact of BFPC attributes such as BFPC-education and BFPC-training on the type of care that BFPCs provide. This study would be able to help fill that gap in knowledge.

This research is a cross-sectional study of a convenience sample of BFPCs to examine the association between education and level of training on type of support and proficiency of BFPCs in communities across the United States. The objectives of this project are to determine whether: 1) the education level of BFPCs is associated with the type of training they receive, and 2) the education level and type of training of BFPCs are associated with the type of support they provide to their clients. Ultimately, findings from this study may help to determine if there is the need for a standardized training and credentialing program for BFPCs, which will ensure

consistency between counseling programs across the country as well as encourage continuing education of peer counselors.

Chapter 2 is a review of the literature outlining background information about the statistics and importance of breastfeeding, the use of peer counselors in health promotion, peer counselors in breastfeeding, as well as the details of and differences in training programs for BFPCs. This will lay the groundwork as to the rationale behind this research.

Chapter 3 is a manuscript to be submitted to the *International Breastfeeding Journal*. This chapter includes the methods, results, and discussion of the results obtained from the data analysis.

Chapter 4 presents a summary of the major findings and conclusions for this study.

CHAPTER 2

REVIEW OF THE LITERATURE

Breastfeeding

Due to the superiority of human milk over other forms of human milk substitutes (HMS) in the early postpartum period, both the American Academy of Pediatrics (AAP) and the American Dietetic Association (ADA) recommend that infants be exclusively breastfed for the first six months of life and then supplemented with appropriate complementary foods for up to 12 months or longer if possible (1-3). The breastfeeding goals set forth in the *Healthy People 2010* document had aimed to increase breastfeeding rates from the 1998 baseline to the 2010 target: the proportion of mothers who breastfeed their babies in early postpartum (from 64% to 75%), at six months (from 29% to 50%), and at one year (from 16% to 25%) as recommended by the AAP (4). In 2009 the Centers for Disease Control and Prevention (CDC) reported that although some specific states, particularly in the west and northeast have met or exceeded those goals, the nation as a whole fell short (5). This has led to maintaining the same Healthy People 2010 goals for breastfeeding into the recently released *Healthy People 2020* breastfeeding objectives for the country (6). The fact that these objectives have not been met and are retained as goals for the next decade suggest that pregnant and breastfeeding mothers may not be getting adequate information about the importance of breastfeeding.

Why is breastfeeding so important and human milk considered to be superior to other forms of HMS? As summarized by the American Dietetic Association position paper promoting and supporting breastfeeding, research has shown that in addition to providing optimal nutrition

for infants, there are numerous benefits for the mother as well as the infant for exclusive breastfeeding (3). Human milk contains numerous proteins that cannot yet be mimicked in manufactured formulas, and these not only provide ideal nutrition tailored to the infant's needs, but they also aid in the defense against infectious pathogens as well as promote the physiologic development of the infant's gastrointestinal system (20). These beneficial properties translate to reduced infant morbidity and mortality with lower rates of necrotizing enterocolitis (NEC) (21) and diarrhea (22-23), reduced risk of acute otitis media (24-25), gastrointestinal infections, lower respiratory tract infections (LRTI), asthma, childhood leukemia, sudden infant death syndrome (SIDS)(25), and lower rates of childhood diseases related to hypertension, obesity, and both Type 1 and Type 2 diabetes mellitus (25-32) versus formula-fed infants. Early infant nutrition has also been shown to have an effect on brain development and function, with breastfeeding associated with higher cognitive function (33).

Breastfeeding has positive effects for the mother as well, with evidence showing that breastfeeding mothers are able to return to their pre-pregnancy weight faster than those who formula-feed their infants (3, 34). Other benefits include forming a close bond between mother and baby, faster restoration of the uterus, improved bone density, and decreased risk for Type 2 diabetes, breast and ovarian cancers, and postpartum depression (25).

Possibly one of the most astonishing universal benefits of breastfeeding is the cost-savings. Bartick et al (35) computed the savings to the United States if 90% of US families would act in accordance with the recommendation to exclusively breastfeed for 6 months. The calculations, which take into account direct and indirect costs of preventable infant deaths related to the low rates of breastfeeding in the US, come in at a staggering \$13 billion per year. It could

also prevent an additional 911 deaths from SIDS, NEC, LRTI, and childhood leukemia, asthma, and Type 1 diabetes per year if these objectives were reached.

Barriers to Breastfeeding

With all of the numerous supportive reasons for breastfeeding, why then do so many mothers choose not to do so? Many studies have been conducted to examine the attitudes of mothers behind the lack of initiation and early cessation of breastfeeding, as well as to determine what, if any, beliefs exist about the benefits of breastfeeding (36-40). Because low breastfeeding initiation rates persist in low-income women, Khoury et al (41) conducted a survey of low-income mothers in Mississippi (n = 733) to determine the attitudes, support, and perceived control of breastfeeding. Of the women surveyed, 38% did not initiate breastfeeding. Regarding attitudes toward breastfeeding, mothers were more likely to breastfeed if they believed that it was more healthy for the baby than formula (OR = 4.72) or that it was enjoyable for the mother (OR = 3.18), and less likely to breastfeed if she believed that breastfeeding had no health benefit for the mother (48% less likely) or found it to be an embarrassing act (65% less likely). They also discovered that within the health care system and with social support, mothers were more likely to breastfeed if they had been encouraged to breastfeed by their doctor (OR = 1.69), the delivery room nurse (OR = 2.44), or by a lactation specialist/peer counselor (OR = 2.62). They were also 50% less likely to breastfeed if family members encouraged formula feeding. These findings were confirmed in a study conducted by Brown et al (37). They found that mothers who initiated breastfeeding were less likely to consider breastfeeding to be inconvenient or embarrassing, and more likely to believe it to be better for maternal and infant health. The researchers also discovered that mothers who initiated breastfeeding were more likely to seek

information prenatally from specialist sources (such as International Board-Certified Lactation Consultants, or IBCLC) over family or health professionals, and the same held true for seeking information or support for breastfeeding postpartum.

Other research findings indicate that there are a range of reasons why mothers do not initiate or have short duration of breastfeeding; however there are several recurring themes: lack of knowledge or misinformation about the benefits of breastfeeding (for both the infant and the mother), discomfort with the act of breastfeeding, fear of pain/sore nipples, not producing enough milk, embarrassment of exposure in public/negative comments from others, inconvenience, starting back to work or school, and lack of support from the infant's father, maternal grandmother, or other family (36-37, 39-40). Those who choose to breastfeed exhibit characteristic attitudes regarding breastfeeding: an awareness of the benefits of breastfeeding for the baby, a prenatal intention to breastfeed, seeing breastfeeding as a natural and normal way to feed an infant, a desire for a mother-baby bond that can result from breastfeeding, a high level of self-efficacy and persistence with breastfeeding, and having a supportive network of friends and family (36-37, 39, 41-42).

Hospital policies also play a role in whether breastfeeding is initiated, because the majority of medical personnel are not formally trained in breastfeeding education, support, or counseling (43-44), and many hospitals provide new mothers with free samples of formula prior to discharge or give formula to infants without any medical basis during their stay (40, 45). A study conducted by Ogbuanu et al (40) discovered that a greater proportion of the women surveyed did not initiate breastfeeding as a result of their experiences in the hospital: they did not receive a phone number to call for help or breastfeeding support, they received a gift pack of

formula upon discharge from the hospital, they were not taught how to breastfeed during their stay nor received information about breastfeeding, and the babies did not stay in the room with them. A study by Bartick et al (46) confirmed these findings, and outlined ways in which to close the quality gap in breastfeeding care in US hospitals. These barriers to breastfeeding potentially amount to pregnant and new mothers not getting adequate information about the importance of breastfeeding, nor the appropriate support needed for a new mother to be successful in breastfeeding. Some strategies for healthcare professionals to overcome some of these barriers may include: encouragement during prenatal care that consists of childbirth classes that addresses the importance and benefits of breastfeeding, creating a breastfeeding-friendly environment at the clinic or hospital (including attitudes of healthcare staff), have skilled professionals for support during the breastfeeding initiation process, maintain contact after discharge (for assistance and follow-up), and help mothers to network with breastfeeding support groups in their communities (45). While certified lactation consultants are extremely valuable resource as knowledgeable breastfeeding supporters, they may not be able to reach all populations, particularly those most in need (teen mothers, low-income, immigrants/minorities, and those residing in deprived communities). This is where another form of support may prove vital: breastfeeding peer counselors.

Peer counseling for health promotion

Peer counselors go by many names: peer educators, lay support, community outreach workers, and indigenous health care advisors. The concept of peer counseling was developed as a means of reaching out to educate, support, advise, and counsel individuals in need of help who otherwise do not have access to the mainstream healthcare using lay persons. Typically peer

counselors are individuals that have been recruited from the target population and have had prior experience in the area they are offering support and assistance. Whether that support relates to depression in seniors (47), coping with breast cancer (48), diabetes management (7), HIV/AIDS (8), nutrition (9, 49), or any other health concern, is determined by the program that implements it. Peer roles can be very diverse, but overall involves the dissemination of accurate and culturally appropriate information as well as encouragement and emotional support throughout the care process (50). Over the years, studies have shown time and time again that peer counseling is an exceptionally effective means of implementing positive behavioral and lifestyle changes.

Peer counseling for breastfeeding

Peer counselors have been used to promote breastfeeding by agencies such as the Expanded Food and Nutrition Education Program (EFNEP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) with great success (10, 51-52). Breastfeeding peer counselors (BFPCs) have been used extensively and effectively to promote breastfeeding in select communities, especially low-income minority communities who otherwise do not breastfeed. In 2005, Anderson et al (13) published results from a randomized, controlled trial indicating that BFPC positively influences breastfeeding outcomes among low-income Latina and other minority women. Chapman et al (53) performed a systematic review of randomized controlled trials that evaluated the impact of BFPC on breastfeeding initiation, rates, exclusivity, and maternal and child health outcomes. The researchers found that the interventions that included antenatal and frequent perinatal BFPC contact yielded the most success in increasing breastfeeding initiation rates as compared to controls. Chapman et al also discovered

that the interventions that improved breastfeeding duration significantly were those that included ongoing, in-person BFPC support. Breastfeeding exclusivity was found to be most affected by interventions that were designed for BFPCs to specifically promote breastfeeding exclusivity among mothers, although some studies that were not specifically designed to change this behavior also had a positive effect on exclusive breastfeeding rates (not significant). The findings for the maternal and infant health outcomes were similar to the benefits discussed previously in the section above titled ‘Breastfeeding.’

There are many different forms of support that BFPCs can provide: over-the-telephone counseling, internet counseling, leading breastfeeding support group meetings, in-home visitations to mothers, in-hospital postpartum visits, and in-office visits to the counselor as a few examples, with some methods more effective than others in achieving positive breastfeeding outcomes. A search of the literature did not provide any information about the efficacy of internet-based counseling methods specifically for breastfeeding, although there are studies emerging about its use in other aspects of counseling in health care (54-56). With regard to telephone counseling, there have been conflicting reports of efficacy. Wong et al (17) conducted a randomized, controlled trial in Hong Kong with mothers that were breastfeeding their babies at discharge from the hospital after birth, using an intervention of BFPCs providing telephone consultations as a supplement to routine care (n = 100) versus routine care exclusively (n = 100). What they found was that the intervention did not show a significant difference in exclusivity of breastfeeding between the intervention and the control, nor duration at 5 days (87% vs 88% continued breastfeeding), at 3 months (36% vs 40%), or at 6 months (24% vs 31%) follow-up after discharge. In contrast, Dennis et al (57) also tested the efficacy of a telephone-based

counseling intervention by conducting a randomized, controlled trial (n = 256) in Toronto with distinctly different results. The researchers found that at 4, 8, and 12-week follow-ups, the peer support intervention group had 74.2%, 62.9%, and 56.8% (respectively) of mothers exclusively breastfeeding versus 62.9%, 54.8%, and 40.3% in the control group. The discrepancy in results between the two studies could be due to a number of factors including differences in the demographics of the target populations, differences in the nature of the interventions, or the selection process of participants.

Another consideration of breastfeeding counseling methodology is the use of visual aids, such as videotapes, to supplement the positive breastfeeding messages the counselor is attempting to impart on new mothers. A cross-sectional study by Mitra et al (12) and an experimental intervention by Gross et al (58) looked at the efficacy of WIC clinics using videotapes during breastfeeding counseling to promote positive breastfeeding habits. The study by Gross et al (conducted in Maryland) compared a control group (standard WIC infant feeding education) to 3 different intervention groups: use of a motivational breastfeeding video, breastfeeding peer counseling, and BFPC plus the video, with each group at a separate clinic. They found that while breastfeeding rates still declined at 8 and 16 weeks postpartum at all of the clinics, the rates of decline were slower in the intervention clinics than that of the control clinic, with the video-only and BFPC-only groups showing very similar results (58). The study performed by Mitra et al examined the implementation of a breastfeeding-friendly clinic environment, in addition to the use of a breastfeeding promotion video in WIC clinics throughout Mississippi. The researchers found that of the 41 agencies that received the video, 85% of them found it to be an effective counseling measure in addressing barriers to breastfeeding with

mothers. The video was used in a variety of ways, including support group meetings, training of staff and education of other health professionals, or lending to pregnant or breastfeeding WIC participants (12). These studies demonstrate that when used as a supplement to standard BFPC, promotional videos for breastfeeding can be an effective tool for breastfeeding support.

Another important aspect of BFPC that is examined in several studies is the effectiveness of home-based visits. Whether within the United States or abroad, home-based visits have proven to be one of the most effective means for improving breastfeeding exclusivity and duration, particularly with low-income mothers (13, 16, 59-61). Anderson et al performed a randomized, controlled trial (n = 219) in a predominantly Latina, low-income community in Connecticut, that included an intervention of peer counseling that supported exclusive breastfeeding, with 3 prenatal home visits, daily perinatal in-hospital visits, 9 postpartum home visits, and telephone support as needed. Compared to the control group, the mothers in the intervention group were 15 times more likely to have breastfed exclusively throughout the study duration (13). In Bangladesh, Haider et al performed a similar trial (n = 726) also focusing on breastfeeding exclusivity, which included an intervention of 2 prenatal home visits, three early postpartum (first 2 weeks) visits, and home visits every 2 weeks thereafter until 5 months postpartum. An astonishing 70% of mothers in the intervention group breastfed exclusively for 5 months as compared to 6% in the control group (60). Both of these trials included a 40-hour training course for the peer counselors based on the World Health Organization's breastfeeding counseling course. The success of home visits may be due to the inability of many new mothers, particularly low-income mothers, to access traditional healthcare by the normal routes. Peer counseling in the home resolves the need for mothers to find transportation and child care in

order to make an office visit, can often be worked around a mother's schedule, and can help personalize the relationship between the mother and her counselor, which enables rapport and trust.

The concept of peer counseling for breastfeeding promotion applies to international communities as well, with positive breastfeeding outcomes demonstrated via program evaluations and randomized controlled trials in Bangladesh (62), Mexico (63), Korea (64), Philippines (19), Ghana (65), South Africa (66), Australia (67), Pakistan (68), and Brazil (69-70). International organizations such as La Leche League and the Baby-Friendly Hospital Initiative developed by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) (71), both of which employ peer counselors, are dedicated to breastfeeding promotion throughout the world.

In many cases, peer counselors are recruited from the target population, which allows them to reach people who may otherwise be isolated, underserved, or potentially unaware of the services and information available to them (9). What makes a peer so successful at giving support is her previous experience that she can relate to her client, which in turn helps the client to open up about themselves, and creating rapport. An individual is typically not considered a peer counselor without having gained personal and first-hand knowledge of that particular experience, and also identifying with the individual she is suppose to serve. However, that qualification has expanded to encompass fathers as "peer dads," who advocate the benefits of breastfeeding to other new fathers, helping them to become more supportive partners and better fathers (72-73). Raisler (45) found through her research that establishing a personal connection

through a mutually shared experience eased the process of breastfeeding more so than any amount of written material, handouts, or videos.

One of the best ways for peer counselors to enhance breastfeeding promotion is to support the needs of expectant and new mothers: provide realistic expectations of what breastfeeding is like, provide hands-on techniques to help with positioning and latching, give practical and consistent advice on addressing common breastfeeding problems (such as sore nipples or engorgement), acknowledge the feelings and experiences of new mothers, and provide reassurance and encouragement to persevere with breastfeeding when it becomes difficult or inconvenient, providing individualized support to each mother (41, 45, 74-75). They act as a role model for breastfeeding success. In this way, peer counseling has repeatedly produced positive outcomes concerning breastfeeding, particularly with regard to increasing the rate of breastfeeding initiation and exclusivity, as well as extending breastfeeding duration (13-15).

Peer counselor training and programs

Sufficient training is imperative to a successful program with positive health outcomes, particularly increasing the proportion of mothers initiating as well as extending the duration of breastfeeding (12-13, 15, 17). According to Raisler (45), BFPC training programs are designed in a way to “orient the peer counselor to program objectives, to promote the attainment of skills that enable the use of their breastfeeding knowledge, and to promote understanding the needs of the target population,” which includes the actual physiology of breastfeeding, hands-on support techniques, positive counseling skills, and cultural understanding. Breastfeeding is an area in which peer counseling has proven to be very effective; however, there is not a standardized training curriculum to assure consistency from program to program. There are differences in

knowledge and proficiency between a skilled professional and a peer educator, which can be exacerbated if inadequate training is provided (18). When counseling does not provide capable support in breastfeeding, there is a higher risk of failure in implementing good breastfeeding practices by mothers (19). The World Health Organization (WHO) has the gold-standard for BFPC training programs at 40 hours duration, although they recommend a minimum of 18 hours with an additional 3 hours of hands-on practice (76). Although both the California Department of Health's WIC-based breastfeeding peer counseling training program (77) and the one offered by La Leche League International (78) are approximately the same in duration at around 20 hours, content can vary with location, program, state, or even country.

Rossman (79) and Chapman et al (53) in their systematic reviews of numerous BFPC programs, demonstrated the variability among the training protocols used by different programs. It was determined in both of these reviews that the duration of training varies from 9 hours to 56 hours, depending upon whether the program was based on World Health Organization model or was developed strictly for research purposes. Bronner et al (51) conducted a national survey of WIC, one of the largest employers of breastfeeding peer counselors, regarding their role at the state and local levels within the organization. Although the findings of Bronner et al support other studies that have established the effectiveness of peer counselors in breastfeeding promotion, they found that there was a lack of consistency in the recruitment, training, and counseling practices of counselors across WIC agencies in the United States.

Advantages to standardized training programs such as those offered by La Leche League or WHO/UNICEF would include ensuring consistent, accurate, and up-to-date information regarding benefits and techniques of breastfeeding passed along from BFPCs to new mothers, as

well as making certain that the counseling techniques used by the BFPCs are appropriate and correct (45). Through training, BFPCs need to acquire science-based practical knowledge about breastfeeding as well as be able to consider their own experiences and beliefs. These will contribute to the development of their interpersonal skills that they will use when counseling new mothers (80).

A potential concern regarding the training of BFPCs is maintaining the balance of being knowledgeable peers to the women they counsel and not becoming too “professionalized,” and losing their peer status and prospective personal connection they may form with mothers (50). The greatness of peer counselors comes from the knowledge they attain through proper training that enhances the knowledge they have gained through experience, which they then share with new mothers.

An interesting study conducted by Smale et al (81) in England looked at breastfeeding education across the spectrum of healthcare practitioners in a hospital setting. The researchers conducted a learning needs analysis of the quality of training to provide breastfeeding support to pregnant and breastfeeding mothers. They interviewed all practitioners that would have any interaction or influence on a mother’s decision or ability to breastfeed, including the women themselves. What they found was that the mothers felt that they received conflicting information at times, particularly when more than one medical staff member was involved. They reported getting the most consistent support and information from the voluntary breastfeeding supporters. Regarding the medical staff’s view of their breastfeeding training, most felt that the information they received was fragmented and very brief, and that they were ill-equipped to give breastfeeding mothers the support that they needed. This group included most of the doctors,

nurses, home-health visitors, and even the midwives, with the exception of the breastfeeding counselors, who reported feeling very comfortable with providing breastfeeding support. There were some members of the staff who had taken it upon themselves to learn more about breastfeeding and providing support, but they were very few in number.

The study by Smale et al is an ideal example of the importance of consistent, standardized training for breastfeeding support. Inconsistent information can lead to confusion and indecision on the part of the mother, or could lead to non-initiation or early cessation of breastfeeding if given ill-informed advice. When counseling does not provide capable support in breastfeeding, there is a higher risk of failure in implementing good breastfeeding practices by mothers (19). While extensive research has been done to examine the importance and effectiveness of BFPCs, to date there has not been a comprehensive nationwide study to assess the impact of BFPC attributes such as BFPC-education and BFPC-training on the type of care that BFPCs provide.

CHAPTER 3
IMPACT OF EDUCATION AND TRAINING ON TYPE OF CARE
PROVIDED BY BREASTFEEDING PEER COUNSELORS¹

¹Sullivan E, Bignell W, Andrianos A, Anderson A, 2010. To be submitted to the *International Breastfeeding Journal*.

Abstract

Background: Studies using breastfeeding peer counselors (BFPCs) have repeatedly shown positive impact on breastfeeding initiation, exclusivity and duration, particularly among low-income mothers. To date, there has not been a comprehensive nationwide study to determine the impact of BFPC attributes such as education level and training on the type of care that BFPCs provide. **Methods:** This was a cross-sectional study of a convenience sample of BFPCs to ascertain the influence of education and level of training on type of support and proficiency of BFPCs in communities across the United States. Invitations to participate in this online survey of BFPCs were e-mailed to program coordinators of WIC, La Leche League and other community-based health organizations who in turn invited and encouraged their BFPCs to participate. Descriptive analysis was used to describe participants (n=847), while bivariate analysis using χ^2 test was used to examine the association between BFPC education and training and breastfeeding support skills. Multivariate logistic regression was used to assess the independent determinants of specific breastfeeding support skills. **Results:** The major findings from the research indicate that overall, educational attainment is not a significant predictor for the curriculum used in their training and types of support used during counseling sessions, but training duration was positively associated with the use of many breastfeeding support skills. Another major influence on counselor support is the type of continuing education they receive after their initial training, with higher likelihood of use of desirable support skills associated with counselors continuing their breastfeeding education at conferences or trainings away from their job sites. **Conclusion:** Further research is needed to examine the content, as well as the consistency of training curricula of BFPC programs. This may show a need for a standardized training curriculum and potential

for a credentialing program for BFPCs across the United States to make BFPCs more proficient and helping achieve the Healthy People 2020 breastfeeding goals for the country.

Introduction

Due to the superiority of human milk over other forms of human milk substitutes (HMS) in the early postpartum period, both the American Academy of Pediatrics (AAP) and the American Dietetic Association (ADA) recommend that infants be exclusively breastfed for the first six months of life and supplemented with appropriate complementary foods for up to 12 months or longer if possible (1-3). The breastfeeding goals set forth in Healthy People 2010 had aimed to increase breastfeeding rates from the 1998 baseline to the 2010 target: the proportion of mothers who breastfeed their babies in early postpartum (from 64% to 75%), at six months (from 29% to 50%), and at one year (from 16% to 25%) (4). In 2009 the Centers for Disease Control and Prevention (CDC) reported that although some specific states, particularly in the west and northeast have met or exceeded those goals, the nation as a whole fell short (5, 82). This has led to retaining the same Healthy People 2010 goals for breastfeeding in the recently released Healthy People 2020 breastfeeding objectives for the country (6). The fact that these objectives have not been met and were retained as goals for the next decade suggest that pregnant and new mothers may not be getting adequate information about the importance of breastfeeding, nor the appropriate support needed for a new mother to be successful in breastfeeding. While certified lactation consultants are extremely valuable resources as knowledgeable breastfeeding supporters, they may not be able to reach all populations, particularly those most in need (low-income, immigrants/minorities and residing in deprived communities). This is where another form of support may prove vital: breastfeeding peer counselors.

Peer counseling for health promotion

Peer counselors go by many names: peer educators, lay support, community outreach workers, and indigenous health care advisors. The concept of peer counseling was developed as a means of reaching out to educate, support, advise, and counsel individuals in need of help who otherwise do not have access to the mainstream healthcare services using lay persons. Whether that help relates to depression, diabetes management, breastfeeding, HIV/AIDS, nutrition, alcohol abuse, or any other health concern, is determined by the program that implements it. Over the years, studies have shown time and time again that peer counseling is an exceptionally effective means of implementing positive behavioral and lifestyle changes (7-9).

Peer counseling for breastfeeding

Peer counselors have been used to promote breastfeeding by agencies such as the Expanded Food and Nutrition Education Program (EFNEP) and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) with great success (10-12). Breastfeeding peer counselors (BFPCs) have been used extensively and effectively to promote breastfeeding in selected communities, especially low-income minority communities who otherwise do not breastfeed. What makes a peer so successful at giving support is her previous personal experience that she can relate to her client, which in turn helps the client to open up about themselves, creating a rapport. BFPC has repeatedly produced positive outcomes regarding breastfeeding, particularly with regards to increasing the rate of breastfeeding initiation and exclusivity, as well as extending breastfeeding duration (10, 13-15). An individual is not considered a peer counselor without having had personal and first-hand knowledge of that particular experience, and also identifying with the population she is supposed to serve. In many

cases, a peer counselor is recruited from the target population, which allows them to reach people who may otherwise be isolated, underserved, or potentially unaware of the services and information available in their community (9).

Differences in training programs

Sufficient training is imperative to a successful program with positive health outcomes, and in the case of breastfeeding, increasing the proportion of mothers initiating as well as extending the duration of breastfeeding (12, 15-17). As mentioned previously, breastfeeding is an area in which peer counseling has proven to be very effective; however, there is not a standardized training curriculum to assure consistency from program to program, although the WHO has recommended training guidelines. There are differences in knowledge and proficiency between a skilled professional and a peer educator, which can be exacerbated if inadequate training is provided (18). When counseling does not provide capable support in breastfeeding, there is a higher risk of failure by mothers in implementing good breastfeeding practices (19). While extensive research has been done to support the importance of BFPCs, to date there has not been a comprehensive nationwide study to assess the impact of BFPC attributes such as BFPC-education and BFPC-training on the type of care that BFPCs provide. This study would be able to help fill that gap in information.

The study examined the association between education and level of training on type of breastfeeding support and proficiency of BFPC to clients in communities across the United States. The objectives of this project are to determine whether: 1) the education level of BFPCs is associated with the type of training they receive, and 2) the education level and type of training of BFPCs are associated with the type of support they provide to their clients.

Methods

Study design and participants

This was a cross-sectional study hosted online through SurveyMonkey[®] of a convenience sample of BFPCs to examine the association between education and level of training on type of support and proficiency of BFPCs in communities across the United States. In all, we received 1,030 responses out of which 183 were excluded, leaving 847 participants included in our final analysis. Participants were para-professionals/lay women 18 years of age or older, and trained to provide breastfeeding education/counseling and support to pregnant and breastfeeding mothers in communities across the United States. Participants were excluded from the study if they indicated they possessed any sort of breastfeeding certification or professional breastfeeding credential, such as Certified Lactation Counselor (CLC) or International Board Certified Lactation Consultant (IBCLC). This was to ensure that the participants were indeed non-professional lay people. Participant data was also excluded from the final analysis if they were missing any demographic information.

Questionnaire development and testing

A structured questionnaire consisting of 35 questions was developed to collect information about employment status (paid or volunteer, benefits, pay rate, agency/organization), training information (course duration, continuing education, hands-on practice), counseling skills (hands-on, demonstrations, active listening, referrals to IBCLC when needed), counseling settings (face-to-face, by phone, internet, mail, group sessions, in the hospital, home visits), topics discussed during counseling (breastfeeding problems and solutions, pumping and storage of breast milk, solutions for working mothers, maternal nutrition, child health, medications

during breastfeeding), management and care of cases, experience, education, demographics, and race/ethnicity (counselors and clients) of BFPCs. The principal investigators, in consultation with a psychometrician familiar with breastfeeding education and BFPC training program curricula, reviewed and developed the survey tool. As this survey was a first of a kind, an extensive review of the literature and many interviews with BFPC program managers and trainers were conducted. The draft survey was subsequently reviewed by several experts, representing various disciplines including human lactation, education, dietetics and nursing. The draft questionnaire was pilot tested with practicing community-based breastfeeding counselors (N=11) for content validity. These same community-based breastfeeding counselors also participated in an in-depth interview to ascertain the literacy level and appropriateness of tasks (counseling and management). After further review of the draft questionnaire, the investigators came to a consensus and finalized the survey for distribution to participants.

Survey distribution

Invitations with a link to the survey hosted by SurveyMonkey[®] were e-mailed to program coordinators of WIC, La Leche League, Cooperative Extension, Early Head Start, Healthy Start, Gift Project, Connect One Chicago, Breastfeeding Heritage and Pride of the Hispanic Health Council (Hartford, CT), Doulas of North America, Nursing Mothers Council, and Nursing Mothers Network, who all provide community-based breastfeeding counseling services. These programs, using lay women and para-professionals that receive some training in breastfeeding education/support and are paid or are volunteers, were identified through initial literature review and personal conversations with experts in the field of breastfeeding during our survey development. The program coordinators of the above mentioned programs across the United

States then invited and encouraged their BFPCs to participate. Besides the initial email invitation to program coordinators, two email reminders were also sent to coordinators to encourage their BFPCs to complete the survey online through SurveyMonkey®. Email invitations were sent to program leaders in the 50 states, District of Columbia and Puerto Rico. Consent of participants was obtained through clicking “Yes” to the first question, “I agree to participate in this survey,” after reading a consent script describing the survey and the responsibility of the respondent. Completed surveys were captured by SurveyMonkey® and downloaded by the researchers for analysis. All methods and procedures were approved by the University of Georgia Institutional Review Board.

Statistics

All data was downloaded from SurveyMonkey and imported to SPSS for Windows (version 17.0) for coding and all analysis. Descriptive statistics were used to describe our participants, with results presented as percentages and charts. Bivariate analysis using χ^2 test was used to examine the association between breastfeeding support skills, and BFPC education level and type of training received. Due to the categorical nature of the data, logistic regression was used to assess determinants of specific breastfeeding support skills. Univariate logistic regression was performed on each of the dependent variables with each of the independent variables. The independent variables that were found to be significant for each of the dependent variables were incorporated into the multiple logistic regression models. Independent variables primarily consisted of demographic information, initial breastfeeding training curriculum, and continuing breastfeeding education, while the dependent variables chosen were those that we determined to best represent different aspects of counseling: hands-on support skills, face-to-face counseling,

positive counseling skills, and referrals to healthcare professionals, in addition to hands-on practice during training. A p -value of $\leq .05$ was used as the criterion for statistical significance.

Results

Participant characteristics

Table 3.1 presents the characteristics of the survey participants. Of the counselors surveyed, 9.7% reported that they had no college education, while 31.3% attended college but did not graduate and 59.0% have completed college. Regarding their training to become breastfeeding peer counselors, the majority of counselors (58.8%) reported that their training consisted of several courses/classes over time, 20.5% a training that was greater than 20 hours, 12.5% received a training ranging from 10-20 hours, and the remaining 8.1% receiving a training lasting less than 10 hours in duration. Sixty-one percent of respondents (61.0%) stated that their training did include hands-on practice or observing mothers and babies feeding up close. A little over a third (38.1%) of counselors declared that they continued their breastfeeding education by going to conferences and trainings away from their jobs, 40.0% at their job/organization, 7.7% go to a conference once a year, 9.4% study on their own time, while the remaining 4.7% have had no continuing education since the initial breastfeeding training.

Most of the participants (35.2%) were between 30-39 years while 5.4% reported to be 60 years or older (see Table 3.1). The counselors self-identified their race/ethnicities as follows: 74.9% white/Caucasian, 10.9% Latino/Hispanic, 7.6% black/African American, 2.0% multiracial American, 0.6% Asian American, 0.8% Native American and the remaining 3.3% falling into other categories. In contrast, the reported race/ethnicities of the clientele served by the counselors were as follows: 45.3% white/Caucasian, 18.0% Latino/Hispanic, 16.6%

black/African American, 10.3% multiracial American, 5.4% Asian American, 2.3% Native American and the remaining 2.0% as other than those listed. Almost two-thirds of the participants reported to be paid counselors (27.9% paid full-time, 35.9% paid part-time), while 36.2% said to be volunteer/unpaid counselors. Over 70.0% of the participating counselors reported to have 12 months or more personal experience breastfeeding a child or children, while 8.4% did not have any personal experience breastfeeding a child (Table 3.1). Over half (52.1%) of the participants reported to have at least five years experience as either paid or volunteer breastfeeding counselors assisting pregnant and nursing mothers, while 9.9% have been breastfeeding counselors for less than one year. A majority of the counselors reported to have an IBCLC on-site (30.7%) or within five miles radius (30.8%) for referral of clientele in situations where they encounter a client with significant lactation problems beyond their skill level and needing an expert counsel and support.

Appendix A Table 1 presents information on selected counseling techniques employed by the participants. A majority of the participants have never counseled a mother face-to-face in a hospital environment be it in the maternity unit (49.6%) or the neonatal intensive care unit (69.1%). Most counselors (63.9%) reported to have no contact with clients after regular working hours. Almost half of the participants never plan/teach prenatal breastfeeding classes (46.9%) or lead breastfeeding support group meeting (43.8%), while over two-thirds (66.7%) never plan/teach back to work/school breastfeeding classes.

Bivariate analysis

We examined the associations between participants' educational attainment (Table 3.2, Figs A1 - A3) as well as duration of breastfeeding training curricula (Table 3.3, Figs A4 – A7) and a number of variables. Duration of initial breastfeeding training and receiving some hands-on practice during this training did not differ significantly by participant educational attainment ($p > .05$). However, the type of breastfeeding continuing education used was significantly different by educational attainment ($p = .025$). Half of those with no college education reported that they attended conferences or trainings away from their job/organization, while 39.0% received continuing education trainings at their job/organization, and 2.4% reported to study on their own time or have had no continuing education since their initial training. Of those that completed college, the largest proportion stated that they received continuing education at their job/organization (43.2%), while 34.2% attended off-site conferences, and 10.6% studied on their own time. There was no significant association between the use and frequency of hands-on support (helping mother to position baby at the breast, observe mother breastfeed her baby, and correct baby's poor latch to the breast) during counseling sessions, or face-to-face counseling at place of work/organization and education of participants. Use of client-centered counseling skills with pregnant and breastfeeding mothers was found to be significantly associated with education level of participants ($p = .002$) with about 90% of those with no college education and some college education using these skills unlike their counterparts with a college degree.

Regarding other skills or support provided by counselors (Table 3.2), there was a significant positive association between educational attainment and counseling mothers via the internet ($p < .001$), leading breastfeeding support group meetings ($p = .005$), discussing sex and

family planning options during breastfeeding with new mothers ($p = .014$), and discussing when to introduce complementary foods to babies ($p = .004$). There was a significant negative association between educational attainment and whether counselors reported reading instructions and writing out forms for clients who have trouble doing so ($p < .001$), identifying social service needs ($p = .001$) and referring mothers to social service agencies ($p = .003$), as well as referring mothers to community resources such as WIC, food banks, or job training programs ($p = .001$).

We observed a significant association between type of training received and hands-on practice during training (Table 3.3) with a majority (70.7%) of those whose training involved several courses/classes over time also receiving hands-on practice during training ($p < .001$). All of the variables related to hands-on support given to mothers during counseling were found to be significantly associated with training duration ($p < .001$ for all), with longer training duration being positively associated with more frequent use of each skill: help mother position baby at the breast, observe mother breastfeed her baby, and correct baby's poor latch to the breast. There was also a significant positive association of longer training duration with frequency of counseling mothers face-to-face at the counselor's place of work/organization ($p < .001$) as well as referral of mothers to a healthcare professional including IBCLC for additional support ($p = .007$). The use of client-centered counseling skills was not found to be significantly associated with duration of initial training to become a counselor (Table 3.3).

We also observed a significant positive association between training duration and whether participants lead a breastfeeding support group meeting ($p < .001$), plan and teach back-to-work/school breastfeeding classes ($p < .001$), refer mothers to social service agencies ($p = .050$) as well as community resources ($p = .024$), and discuss topics such as sex and family

planning options, and when to introduce complementary foods to babies with breastfeeding mothers ($p < .001$) (Table 3.3).

Logistic regression

In the univariate logistic regression analysis we observed that participants with no college education behaved differently in the use of a number of critical but important counseling skills or techniques compared to their counterparts who completed college. For example, those who had no college education were less likely than those with a college degree to teach tongue exercise for babies with latch problems (OR = 0.53, 95% CI = 0.32, 0.89), to lead breastfeeding support group meetings (OR = 0.61, 95% CI = 0.38, 0.98), or to refer mothers to a community-based breastfeeding support groups (OR = 0.31, 95% CI = 0.15, 0.64). Conversely, those with no college education were more likely than those with a college degree to counsel mothers face-to-face at work/organization (OR = 2.68, 95% CI = 1.05, 6.83), to refer mothers to a community resource such as WIC (OR = 2.78, 95% CI = 1.17, 6.58), to use client-centered counseling skills when working with pregnant and breastfeeding mothers (OR = 2.05, 95% CI = 1.03, 4.11), to identify social service needs for mothers such as housing or food (OR = 2.00, 95% CI = 1.15, 3.48), or to refer mothers to social service agencies (OR = 2.18, 95% CI = 1.12, 4.23).

Educational attainment was not a significant predictor of whether or not counselors received hands-on practice during their initial breastfeeding training to become a counselor. There was however, a positive association of training duration with the likelihood of having hands-on practice during training: those who received less than 10 hours of training were 82% less likely than those who received several classes over time (Table 3.4). Proximity of IBCLC to the counselors place of work/organization was also a significant predictor for hands-on practice

during the training, with the highest odds (OR = 4.49) for those counselors with an IBCLC at their work site. Age and past personal breastfeeding experience were both positively associated with receiving hands-on practice during their initial training, with more personal breastfeeding experience lending to higher odds than those with the least or no personal breastfeeding experience.

For providing hands-on support to mothers during counseling sessions in the form of help position baby at the breast, observe breastfeeding and correct a poor latch at the breast, all had very similar determinants. Duration of training was significantly associated with these hands-on skills, as was past personal breastfeeding experience and duration of helping breastfeeding mothers (Tables 3.5 - 3.7). Participants who reported continuing their breastfeeding education with trainings at their job, at off-site conferences, or studied on their own time were four or more times more likely to practice these skills than were those who had no additional continued education after their initial training. College education was again not a significant predictor for any of these hands-on support skills.

Training duration was again positively associated with participants counseling mothers face-to-face at their place of work. Counselors who attend conferences away from their jobs for continuing education were four times more likely to counsel face-to-face and five times more likely to use client-centered counseling skills than those who have not had any continuing education since their initial breastfeeding trainings (Tables 3.8 – 3.9). Interestingly, participants who did not attend or complete college were found to be twice as likely to use client-centered skills, and those who did not have any college education were more than twice as likely to

counsel face-to-face with mothers at work/organization compared to their counterparts who have completed college.

For referral of mothers to healthcare professionals (such as IBCLC, midwives, or physicians) when there is a need for more support beyond the capabilities and knowledge of the counselor, having an IBCLC on-site was the best predictor (OR = 7.82) (Table 3.10). Also, counselors who continued their breastfeeding education with one conference a year, trainings at their job site, or those that attended conferences away from the job were more likely to make referrals to an IBCLC than those who have not had any continuing breastfeeding education since their initial training. Participants who were trained with a curriculum < 10 hours in duration, with less personal (1 - 4 months) or professional (less than one year) breastfeeding experience were less likely to refer mothers to a healthcare professional for additional breastfeeding support than their counterparts. Educational attainment was not a significant predictor of whether participants made any of these referrals (Table 3.10).

In our multivariate logistic regression analysis, duration of the training curricula used by the breastfeeding peer counselor program and proximity of IBCLC to the place of work/organization were significant independent predictors for counselors having hands-on practice during their training to become breastfeeding peer counselors after adjusting for other potential covariates. Compared to counselors whose training curricula was made up of several classes over time, those whose training involved any of the other training curricula were less likely to have had any hands-on practice during their initial breastfeeding peer counselor training (Table 3.12) in the order, less than 10 hours (OR = 0.22, 95% CI = 0.12, 0.39), 10-20 hour course (OR = 0.2, 95% CI = 0.19, 0.46), then more than 20 hours (OR = 0.55, 95% CI = 0.38,

0.80). Counselors who had access to IBCLC at their work site were more likely to have had hands-on practice during their training, with this likelihood decreasing as the distance to the nearest IBCLC increased with respect to the counselors place of work/organization (Table 3.11).

After controlling for potential confounding factors, duration of training, continuing breastfeeding education, and experience as a counselor were significant independent predictors for participants to observe mothers breastfeed their babies during counseling sessions. Again, counselors whose training was shorter in duration were less likely, as compared to those whose training included several classes over time and with less than 15 years as a peer counselor, to observe actual breastfeeding episode during their counseling sessions (Table 3.12). For counselors to correct a poor latch by the baby at the breast in our multivariate logistic regression (Table 3.13), continued breastfeeding education and personal breastfeeding experience and race/ethnicity of counselors were the significant independent predictors in the presence of other covariates. For example, participants who continued their breastfeeding education by attending conferences or trainings away from their job/organization were over six times more likely as compared to their counterparts who have not had any form of continuing education to correct a poor latch by the baby at the breast (Table 3.13). Also less likely to correct poor latches are those with less than 24 months of cumulative personal breastfeeding experience as compared to those with more than 24 months. Counselors identifying themselves as Latino/Hispanic or white/Caucasian were more likely than other racial/ethnic groups to correct a poor latch by the baby at the breast during counseling sessions (Table 3.13).

Training duration was found to be a significant independent predictor for face-to-face counseling by participants at their place of work. Participants who received < 10 hours of initial

training were 82% less likely (OR = 0.18; 95% CI: 0.09, 0.36), 10-20 hours (OR = 0.41; 95% CI: 0.22, 0.77) and > 20 hours (OR = 0.41; 95% CI: 0.25, 0.68) than their counterparts who reported initial breastfeeding training comprising of several classes over time after adjusting for other covariates. Continuing breastfeeding education was also a significant independent predictor for the use of client-centered counseling skills after adjusting for important covariates. Participants who reported attending conferences/training for continuing education were more likely to use client-centered counseling skills than those who have not had any form of continuing education since their initial breastfeeding training. For example, those who attended conferences/trainings away from their job were five times (OR = 5.06; 95% CI: 2.19, 11.69), attended one conference a year were over four times (OR = 4.70; 95% CI: 1.64, 13.45), attended training at job were almost three times (OR = 2.96; 95% CI: 1.31, 6.71) more likely to use client-centered counseling skills, while participants studying on their own time as their form of continuing education (OR = 1.47; 95% CI: 0.60, 3.60) did not make any difference compared to their counterparts who have not received any continuing education since their initial breastfeeding training. Educational attainment of the counselor was not a significant independent predictor for any of the counseling skills employed by participants in this study.

Discussion

This study explored the impact of breastfeeding peer counselor education and breastfeeding training on the type of care that they provide to the pregnant and breastfeeding mothers they serve. To the best of our knowledge, this is the first comprehensive study to examine the characteristics and proficiencies of breastfeeding peer counselors across the United States. The major findings from the research indicate that overall, educational attainment of

breastfeeding peer counselors is not a significant predictor for the type of curricula used for their training or types of support used during counseling sessions. Duration of initial breastfeeding training/curriculum does have a positive association with the practice of many breastfeeding support skills. Another major predictor of counselor support is the type of continuing breastfeeding education counselors receive after their initial training, with higher likelihood of use of desirable support skills associated with counselors continuing their breastfeeding education at conferences or trainings away from their job sites.

The majority of the counselors that were surveyed reported having completed college (59.0%), while the remainder either attended but did not complete college (31.3%) or had no college education (9.7%). Typically, peer counselors are chosen from the target populations they are attempting to serve, and in the case of breastfeeding peer counseling, programs (such as WIC and EFNEP) are targeted at low-income and minority women who have a higher tendency to not breastfeed and often have little education (13, 52, 61, 83). However, several other agencies (such as La Leche League International, the Baby-Friendly Hospital Initiative through WHO/UNICEF, the Massachusetts Breastfeeding Coalition, and the Hispanic Health Council and the Hartford Hospital Breastfeeding Heritage and Pride Program) target women from all walks of life (83). Bronner et al (51) conducted a national WIC peer counselor survey that comprised 663 respondents from 37 states and reported that 59.5% of peer counselors had either attended or completed college, while the median years of education for WIC participants was 12 years which is slightly different from the findings from this survey. This shows that WIC counselors generally have lower educational level compared to the average breastfeeding counselor in the United States. Much like education, we also found the distribution of race/ethnicities of the

BFPCs in breastfeeding support programs across the US was different from the race/ethnicities of the clientele they serve. While the majority (74.9%) of the counselors surveyed identified their race/ethnicities as white/Caucasian, 45.3% of the clientele they serve were white/Caucasian. This is an indication that counselors generally serve more minority groups (Table 3.1). Bronner et al (51) reported similar results in their WIC survey, with 70% of peer counselors identifying themselves as Caucasian and 44% of the clientele pool being Caucasians, which is consistent with our findings. There were some interesting findings from our research regarding frequencies of specific support skills with regard to educational attainment that may speak to the relatability of counselors to their clientele. Surprisingly, a higher proportion of counselors that completed college reported that they never planned or taught a back to work/school breastfeeding class, read instructions or directions for clients who were unable to read well, wrote out forms for clients who could not do so, identified social service needs such as housing, encouraged or made referrals to social service agencies, nor referred mothers to community resources. Similar associations were observed in the univariate logistic regression in which counselors with higher educational attainment were less likely to offer the above mentioned services to their clients compared to their counterparts with lower educational attainment. Although, providing these services is not a requirement of the counselors' job description, it is an important way of building rapport with clients. When working with lower-income and minority mothers, such as with WIC or EFNEP clients and those from inner-cities, the inability of counselors to identify with their clients may cause a disconnect in the counselor's ability to identify breastfeeding barriers and needs of the mothers compared to someone who would be more demographically similar to their clients with regard to cultural understanding, and understanding the challenges that accompany

living below the poverty line or being a minority. To the best of our knowledge, this is the very first national survey of breastfeeding counselors that has examined the association between the educational attainment of counselors and the types of breastfeeding support they provide pregnant and nursing mothers. The role of education in the type of training received as well as type and content of support provided by counselors to clients is very important to understand as different programs struggle with what should be the minimum level of education when it comes to peer counselors.

Although a majority (79.3%) of the participants in the current study reported the curriculum used for their initial breastfeeding training was within the minimum duration of 20 hours recommended by the WHO, only 55.8% reported their training included hands-on practice which is a requirement by the WHO (76). Most importantly, 70.7% of participants who reported their initial training to consist of several courses/classes over time included hands-on practice, while only 37.1% of those whose training was less than 20 hours in duration had hands-on practice. This finding suggests that while the different training curricula for the many breastfeeding peer counselor programs may provide similar basic content, more advanced training techniques such as providing hands-on practice may only occur in longer duration training curricula that occur over several classes, since they would have more time to cover more topics and do this more extensively. Bronner et al (51) reported in their national WIC survey that the most common topics covered in BFPC training were breastfeeding benefits, common breastfeeding problems, latching on, pumping and storing breastmilk, and counseling techniques. There was no mention in the study of whether WIC included hands-on practice as a part of their training curriculum. The lack of hands-on practice in their training curriculum may probably be a

reason for the low breastfeeding rates as well as duration among WIC recipients compared to non-WIC recipients even after the introduction of breastfeeding peer counseling services into the WIC program. Providing hands-on practice during the training of counselors as recommended by the WHO is an important way of building the self-confidence of counselors to be able to effectively work with their clients providing hands-on support during counseling.

Chapman et al (53) performed a systematic review of BFPC intervention programs, and one aspect of the review was to take a closer look at the training of the counselors. Of the 16 studies examined regarding training, only five confirmed the use of hands-on practice during training, while the others did not specify at all whether hands-on practice was part of the training curricula. In addition, the scope of training protocol for BFPCs participating in the programs ranged anywhere from nine hours in duration to over 40 hours. Two studies used the WHO/UNICEF 40-hour model as their basis for training that included hands-on practice (13, 62), one utilized the WHO 18-hour course (23), two used La Leche League curricula that included hands-on practice (59, 63), and seven of the remaining studies included a training duration of 20 hours or more, but with limited details about the actual training protocol (53). This inconsistency in training of peer counselors between programs could explain why many efforts to improve breastfeeding rates have been only partially successful in the United States (84-85). In our univariate logistic regression analysis, we found that counselors whose initial breastfeeding training consisted of twenty hours or less in duration were less likely to have had hands-on practice during their training than those who have had their training in the form of several courses/classes over time. This was also found to be a significant independent predictor of having hands-on practice during training in the multivariate logistic regression analysis.

Having hands-on practice during training is a measure of providing the BFPCs with self-efficacy and building their self-confidence in being able to perform these tasks with new mothers during counseling sessions. We examined the association between duration of initial BFPC training and use of specific hands-on support techniques during counseling, such as helping mothers to position babies at the breast and correcting poor latches by babies at the breast. For each of these, there was a significant positive association of training duration with percentage of BFPCs that utilized these forms of hands-on support while counseling new mothers. In addition, counselors whose initial breastfeeding training consisted of several courses over time were almost twice as likely to utilize hands-on support techniques (those mentioned previously in this paragraph) during counseling sessions as their counterparts. Raisler (45) performed a qualitative study that investigated the perceptions of mothers participating in Michigan WIC Programs concerning their experiences with breastfeeding peer counselors. She found that the technical assistance provided by BFPCs most frequently reported and most valued by the mothers was that of hands-on support in the form of helping with latching and positioning the baby at the breast. Our data shows the significance of a comprehensive initial training to ensure the improvement in counselor self-efficacy that can potentially translate to the use of more effective counseling skills such as hands-on support.

Continuing breastfeeding education of BFPCs is also an important aspect of increasing counselor efficacy. This ensures that the BFPCs receive up-to-date, accurate, and relevant information, as well as an opportunity for counselors to improve their own breastfeeding support skills or even learn new ones. In our regression analysis, we found that those who continued their education, particularly in the form of participating in conferences or trainings away from

the job site, were much more likely than their counterparts who did not continue their breastfeeding education to provide hands-on support during counseling sessions. Those who reported continuing their breastfeeding education as part of trainings at the job site or studying on one's own were also more likely to report the use of these techniques. Additionally, those who went to off-site conferences or trainings for their continuing education were more likely than all of their counterparts to use client-centered support skills as well as counsel mothers face-to-face at their place of work. This was also an independent predictor for counselors correcting poor latches by babies at the breast during counseling sessions. Chapman et al (53) examined the efficacy of different formats of BFPC counseling interventions with new mothers, particularly higher-intensity interventions (often including numerous pre- and post-natal home or clinic visits) versus lower-intensity interventions (often centered on telephone-based counseling and fewer in-person visits) and their effects on different aspects of improving breastfeeding rates. What the researchers found was that overall, telephone-based counseling methods were among the least effective counseling techniques in improving breastfeeding initiation, duration, and exclusivity (53). This suggests that face-to-face counseling, whether in mothers' homes, in a clinic, or in BFPC office settings are instrumental for reinforcing positive breastfeeding habits in new mothers.

Another consideration is what the scope of practice is for BFPCs. On the scope of practice, one of the variables we examined was whether BFPCs referred mothers to healthcare professionals, such as IBCLC, midwives, or physicians, which would be important when a mother's needs for more support were beyond the capabilities and knowledge of the BFPC. We found that the best predictor of these referrals was having an IBCLC on-site, as well as other

BFPC characteristics such as longer initial breastfeeding training duration and continuing education with training either away from or at the job site showing a higher likelihood of referral. The literature is very limited on the involvement or supervision of IBCLC on BFPC counseling. A study by Gross et al (10) that examined the different types of breastfeeding interventions in WIC clinics across Maryland, found that in the clinics where BFPCs were used in WIC counseling, the BFPCs were not only trained, but also supervised by IBCLC on staff. In those clinics, the BFPCs were the primary contact and support for mothers, with the IBCLC available if needed for advanced assistance. Two separate randomized, controlled trials conducted in Connecticut that examined the efficacy of BFPC on improving breastfeeding outcomes in low-income Latina communities utilized IBCLC for training the BFPCs used in the interventions as well as having the IBCLC available as a resource for the BFPCs should the need arise, such as complicated lactation problems (13, 59). Meier et al (86), in their qualitative evaluation of BFPC in WIC clinics in Michigan, reported that the counselors responded that their job was not only to provide breastfeeding assistance, but to provide emotional support to the mothers as well as serve as a resource for referrals to other services. Raisler (45), who also examined the role of BFPC in Michigan WIC clinics, reported in her study that counselors were able to recognize potential lactation complications, such as mastitis or plugged ducts during hands-on support, and provide immediate referrals to medical staff or IBCLC to attend to the problem before they become severe. BFPCs with appropriate training and supervision should have confidence in their abilities, yet know their limitations. In this way, BFPCs play a crucial role as liaisons between pregnant and breastfeeding mothers, and the traditional healthcare, when

help may not be sought by the mother if left without the support of a BFPC leading to premature breastfeeding cessation.

There are some limitations to this study. First, there is not a way to determine a response rate to this survey, since the number of people to whom the survey was ultimately forwarded to, as well as the number of BFPCs in the United States is not known. Also, all the data were self-reported by the BFPCs with no way to ascertain their validity or otherwise. There was not a “Not Applicable” response provided on the survey, so if a question did not apply to the respondent, she could have left the question blank (leading to exclusion from the final data analysis) or potentially responded inappropriately such as “NEVER”. Lastly, there was not a question included in the survey pertaining to the region, state or location of the respondent; hence the data could not be analyzed by state or locality. This information may have been useful in comparison to known breastfeeding trends, which differ by region of the country.

Besides the limitations, mentioned above, this study also has many strengths. We had a very large sample size to work with (847 respondents with complete data), and this gave us a higher statistical power to detect small differences between groups that would not be possible with a smaller sample size. We were also able to distribute the survey nationwide, to all 50 states as well as the District of Columbia and Puerto Rico, and across the BFPC program spectrum by including program coordinators of WIC, La Leche League, Cooperative Extension, Early Head Start, Healthy Start, Gift Project, Connect One Chicago, Doulas of North America, Nursing Mothers Council, and Nursing Mothers Network, therefore allowing us to generalize our findings to breastfeeding counselors across the United States.

Conclusions

This is the very first comprehensive nationwide study to examine the association between BFPC attributes such as BFPC-education and BFPC-training on the type of care and support that BFPCs provide. This research provides preliminary data that allows the examination of particular BFPC attributes that may have the greatest effect on the type of support they provide to pregnant and breastfeeding mothers. Educational background of counselors is not a determinant of the type of training they receive to become peer counselor. Different programs utilize different training curricula for their counselors, with differences in content and duration. We observed a strong association between duration of training, content of training curriculum and the types of support BFPCs provide their clients. Our findings call for breastfeeding peer counselor programs across the country to consider adopting a training curriculum that is capable of providing counselors the needed competencies to make them more efficient in serving their clients. Also, there is the need for breastfeeding peer counselor programs to encourage and support their counselors to seek continuing education as a means of updating their breastfeeding knowledge and proficiency. Having all of these in place could assist in reaching the Healthy People 2020 breastfeeding goals for the country.

Table 3.1: Characteristics of breastfeeding counselors across the United States (N = 847)

	n	%
Age		
Under 30 years	139	16.4
30-39 years	298	35.2
40-49 years	202	23.8
50-59 years	162	19.1
Over sixty years	46	5.4
College education		
Did not attend college	82	9.7
Attended but did not complete college	265	31.3
Completed college	500	59.0
Counselor race/ethnicity		
Asian American	5	0.6
Black/African American	64	7.6
Latino/Hispanic American	92	10.9
Native American	7	0.8
Multiracial American	17	2.0
White/Caucasian	634	74.9
Other	28	3.3
Position of breastfeeding work		
Paid full-time	236	27.9
Paid part-time	304	35.9
Volunteer	307	36.2
Training duration		
< 10 hour course	69	8.1
10-20 hour course	106	12.5
>20 hour course	174	20.5
Several classes over time	498	58.8
Training included hands-on practice?		
Yes	517	61.0
No	330	39.0
Continuing education		
One conference a year	65	7.7
Training at job	339	40.0
Conferences and training away from job	323	38.1
Study on own time	80	9.5
No additional training or education	40	4.7

	n	%
Place of work or volunteer		
Non-WIC public health	128	15.1
Healthy Start	50	5.9
Hospital	28	3.3
WIC	224	26.4
Breastfeeding support group (like LLL)	259	30.6
Doula	11	1.3
Other	147	17.4
Work setting		
Rural: < 10,000 people	124	14.6
Small city: 10-100,000 people	240	28.3
Medium city: 100-500,000 people	191	22.6
Urban large city: >500,000 people	179	21.1
Suburban near a medium or large city	113	13.3
How close is the nearest IBCLC for referral?		
IBCLC at site	260	30.7
< 5 miles	261	30.8
6-25 miles	244	28.8
26-50 miles	47	5.5
>50 miles	35	4.1
Past personal breastfeeding experience		
Did not breastfeed	71	8.4
1-4 months	37	4.4
5-6 months	25	3.0
6-12 months	87	10.3
12-24 months	445	52.5
>24 months	182	21.5
Duration helping breastfeeding mothers		
< 1 year	84	9.9
1-4 years	322	38.0
5-9 years	191	22.6
10-15 years	104	12.3
>15 years	146	17.2

Table 3.2: Association of counseling characteristics and educational attainment (N = 847)

	No college education n (%)	Did not complete college n (%)	Completed college n (%)	p-value
<i>Training of counselors:</i>				
Training duration				NS
< 10 hour course	8 (9.8)	24 (9.1)	37 (7.4)	
10-20 hour course	10 (12.2)	31 (11.7)	65 (13.0)	
>20 hour course	10 (12.2)	59 (22.3)	105 (21.0)	
Several classes over time	54 (65.9)	151 (57.0)	293 (58.6)	
Training included hands-on practice?				NS
Yes	51 (62.2)	154 (58.1)	312 (62.4)	
No	31 (37.8)	111 (41.9)	188 (37.6)	
Continuing education				.025
One conference a year	5 (6.1)	21 (7.9)	39 (7.8)	
Training at job	32 (39.0)	91 (34.3)	216 (43.2)	
Conferences and training away from job	41 (50.0)	111 (41.9)	171 (34.2)	
Study on own time	2 (2.4)	25 (9.4)	53 (10.6)	
No additional training or education	2 (2.4)	17 (6.4)	21 (4.2)	
<i>Hands-on support for mothers during a counseling session:</i>				
Help mother to position baby at the breast?				NS
Never	15 (18.3)	27 (10.2)	64 (12.8)	
Did do	67 (81.7)	238 (89.8)	436 (87.2)	
Observe mother breastfeeding her baby?				NS
Never	6 (7.3)	23 (8.7)	36 (7.2)	
Did do	76 (92.7)	242 (91.3)	464 (92.8)	
Correct a baby's poor latch at the breast?				NS
Never	24 (29.3)	58 (21.9)	125 (25.0)	
Did do	58 (70.8)	207 (78.1)	375 (75.0)	
<i>Face-to-face sessions with mothers:</i>				
Counsel mothers face-to-face at your place of work?				.052
Never	5 (6.1)	29 (10.9)	74 (14.8)	
Did counsel	77 (93.9)	236 (89.1)	426 (85.2)	

<i>Counseling skills used:</i>				
Use client-centered counseling skills with pregnant and breastfeeding women?				.002
Never	10 (12.2)	34 (12.8)	111 (22.2)	
Did use	72 (87.8)	231 (87.2)	389 (77.8)	
<i>Referral to a healthcare professional (includes IBCLC):</i>				
Refer mother to health care professionals?				NS
Never	3 (3.7)	5 (1.9)	9 (1.8)	
Did refer	79 (96.3)	260 (98.1)	491 (98.2)	
<i>Other services or skills:</i>				
Counsel mothers using the internet?				< .001
Never	49 (59.8)	119 (44.9)	176 (35.2)	
Did counsel	33 (40.2)	146 (55.1)	324 (64.8)	
Lead a breastfeeding support group meetings?				.005
Never	42 (51.2)	133 (50.2)	196 (39.2)	
Did lead	40 (48.8)	132 (49.8)	304 (60.8)	
Plan and teach a back to work/school breastfeeding classes?				< .001
Never	53 (64.6)	151 (57.0)	361 (72.2)	
Did plan and teach	29 (35.4)	114 (43.0)	139 (27.8)	
Read instructions or directions for clients who are unable to read well?				< .001
Never	20 (24.4)	64 (24.2)	224 (44.8)	
Did read	62 (75.6)	201 (75.8)	276 (55.2)	
Write out forms for clients who cannot do so?				< .001
Never	30 (36.6)	117 (44.2)	318 (63.6)	
Did write	52 (63.4)	148 (55.8)	182 (36.4)	
Identify social service needs (such as housing or food)?				.001
Never	18 (22.0)	66 (24.9)	180 (36.0)	
Did identify	64 (78.0)	199 (75.1)	320 (64.0)	
Encourage or make referrals to social service agencies?				.003
Never	11 (13.4)	43 (16.2)	126 (25.2)	
Did encourage	71 (86.6)	222 (83.8)	374 (74.8)	
Refer mothers to community resources (such as WIC or food bank)?				.001
Never	6 (7.3)	24 (9.1)	90 (18.0)	
Did refer	76 (92.7)	241 (90.9)	410 (82.0)	
Discuss sex and family planning options during breastfeeding with mothers?				.014
Never	21 (25.6)	51 (19.2)	70 (14.0)	
Did discuss	61 (74.4)	214 (80.8)	430 (86.0)	

Discuss with breastfeeding mothers: when to introduce solids to the baby?				.004
Never	10 (12.2)	12 (4.5)	19 (3.8)	
Did discuss	72 (87.8)	253 (95.5)	481 (96.2)	
Refer breastfeeding mothers to community-based breastfeeding support groups (like LLL)?				.004
Never	12 (14.6)	20 (7.5)	25 (5.0)	
Did do	70 (85.4)	245 (92.5)	475 (95.0)	

Table 3.3: Association of counseling characteristics and duration of training (N = 847)

	A training or course <10 hours n (%)	10-20 hour training or course n (%)	A training or course >20 hours n (%)	Several trainings or courses over time n (%)	p- value
<i>Training of counselors:</i>					
Training included hands-on practice?					< .001
Yes	21 (30.4)	44 (41.5)	100 (57.5)	352 (70.7)	
No	48 (69.6)	62 (58.5)	74 (42.5)	146 (29.3)	
<i>Continuing education</i>					
Continuing education					< .001
One conference a year	5 (7.2)	15 (14.2)	12 (6.9)	33 (6.6)	
Training at job	15 (21.7)	36 (34.0)	81 (46.6)	207 (41.6)	
Conferences and training away from job	11 (15.9)	29 (27.4)	61 (35.1)	222 (44.6)	
Study on own time	19 (27.5)	15 (14.2)	15 (8.6)	31 (6.2)	
No additional training or education	19 (27.5)	1 (10.4)	5 (2.9)	5 (1.0)	
<i>Hands-on support for mothers during a counseling session:</i>					
Help mother position baby at the breast?					< .001
Never	15 (21.7)	27 (25.5)	25 (14.4)	39 (7.8)	
Did do	54 (78.3)	79 (74.5)	149 (85.6)	459 (92.2)	
Observe mother breastfeed her baby?					< .001
Never	12 (17.4)	22 (20.8)	13 (7.5)	18 (3.6)	
Did do	57 (82.6)	84 (79.2)	161 (92.5)	480 (96.4)	
Correct baby's poor latch at the breast?					< .001
Never	26 (37.7)	41 (38.7)	39 (22.4)	101 (20.3)	
Did do	43 (62.3)	65 (61.3)	135 (77.6)	397 (79.7)	
<i>Face-to-face sessions with mothers:</i>					
Counsel mothers face-to-face at your place of work?					< .001
Never	17 (24.6)	18 (17.0)	34 (19.5)	39 (7.8)	
Did do	52 (75.4)	88 (83.0)	140 (80.5)	459 (92.2)	
<i>Counseling skills used:</i>					
Did you use client-centered counseling skills with pregnant and breastfeeding women?					NS
Never	18 (26.1)	16 (15.1)	34 (19.5)	87 (17.5)	
Did do	51 (73.9)	90 (84.9)	140 (80.5)	411 (82.5)	

<i>Referral to a healthcare professional (includes IBCLC):</i>					
Refer mother to health care professionals?					.007
Never	5 (7.2)	1 (0.9)	1 (0.6)	10 (2.0)	
Did do	64 (92.8)	105 (99.1)	173 (99.4)	488 (98.0)	
<i>Other services or skills:</i>					
Counsel mothers using the internet?					NS
Never	35 (50.7)	48 (45.3)	64 (36.8)	197 (39.6)	
Did counsel	34 (49.3)	58 (54.7)	110 (63.2)	301 (60.4)	
Lead breastfeeding support group meetings?					< .001
Never	54 (78.3)	53 (50.0)	75 (43.1)	189 (38.0)	
Did lead	15 (21.7)	53 (50.0)	99 (56.9)	309 (62.0)	
Plan and teach back to work/school breastfeeding classes?					< .001
Never	61 (88.4)	74 (69.8)	119 (68.4)	311 (62.4)	
Did plan and teach	8 (11.6)	32 (30.2)	55 (31.6)	187 (37.6)	
Read instructions or directions for clients who are unable to read well?					.013
Never	27 (39.1)	47 (44.3)	75 (43.1)	159 (31.9)	
Did read	42 (60.9)	59 (55.7)	99 (56.9)	339 (68.1)	
Write out forms for clients who cannot do so?					.010
Never	35 (50.7)	61 (57.5)	114 (65.5)	255 (51.2)	
Did write	34 (49.3)	45 (42.5)	60 (34.5)	243 (48.8)	
Identify social service needs (such as housing or food)?					NS
Never	22 (31.9)	41 (38.7)	60 (34.5)	141 (28.3)	
Did identify	47 (68.1)	65 (61.3)	114 (65.5)	357 (71.7)	
Encourage or make referrals to social service agencies?					.050
Never	14 (20.3)	29 (27.4)	46 (26.4)	91 (18.3)	
Did encourage	55 (79.7)	77 (72.6)	128 (73.6)	407 (81.7)	
Refer mothers to community resources (such as WIC or food bank)?					.024
Never	13 (18.8)	23 (21.7)	27 (15.5)	57 (11.4)	
Did refer	56 (81.2)	83 (78.3)	147 (84.5)	441 (88.6)	
Discuss sex and family planning options with breastfeeding mothers?					< .001
Never	15 (21.7)	32 (30.2)	34 (19.5)	61 (12.2)	
Did discuss	54 (78.3)	74 (69.8)	140 (80.5)	437 (87.8)	

Discuss with breastfeeding mothers: when to introduce solids to the baby?					< .001
Never	11 (15.9)	4 (3.8)	5 (2.9)	21 (4.2)	
Did discuss	58 (84.1)	102 (96.2)	169 (97.1)	477 (95.8)	
Refer breastfeeding mothers to community-based breastfeeding support groups (like LLL)?					.072
Never	9 (13.0)	9 (8.5)	7 (4.0)	32 (6.4)	
Did do	60 (87.0)	97 (91.5)	167 (96.0)	466 (93.6)	

Table 3.4: Univariate logistic regression: Determinants of hands-on practice during training

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.18	0.11, 0.31	< .001
10-20 hour course	106	0.29	0.19, 0.45	< .001
>20 hour course	174	0.56	0.39, 0.80	.001
Several classes over time	498	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	4.49	2.10, 9.60	< .001
< 5 miles	261	2.69	1.26, 5.71	.010
6-25 miles	244	4.08	1.91, 8.73	< .001
26-50 miles	47	3.22	1.28, 8.08	.013
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	0.45	0.26, 0.79	.005
1-4 months	37	0.38	0.18, 0.77	.008
5-6 months	25	0.45	0.20, 1.06	.066
6-12 months	87	0.67	0.39, 1.12	NS
12-24 months	445	0.86	0.60, 1.24	NS
>24 months	182	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.15	0.08, 0.28	< .001
1-4 years	322	0.26	0.16, 0.41	< .001
5-9 years	191	0.54	0.33, 0.89	.016
10-15 years	104	0.86	0.47, 1.58	NS
>15 years	146	1.00		
College education				
Did not attend college	82	0.99	0.61, 1.61	NS
Attended but did not complete college	265	0.84	0.62, 1.13	NS
Completed college	500	1.00		
Work setting				
Rural: < 10,000 people	124	0.77	0.45, 1.31	NS
Small city: 10-100,000 people	240	0.67	0.42, 1.07	.091
Medium city: 100-500,000 people	191	0.64	0.39, 1.04	.069
Urban large city: >500,000 people	179	0.78	0.48, 1.29	NS
Suburban near a medium or large city	113	1.00		

Age				
Under 30 years	139	0.28	0.13, 0.59	.001
30-39 years	298	0.43	0.21, 0.88	.020
40-49 years	202	0.65	0.31, 1.36	NS
50-59 years	162	0.65	0.30, 1.37	NS
Over sixty years	46	1.00		
Counselor race/ethnicity				
Black/African American	64	0.40	0.17, 0.96	.040
Latino/Hispanic American	92	0.60	0.26, 1.37	NS
Multiracial American	17	1.08	0.29, 4.10	NS
White/Caucasian	634	0.50	0.24, 1.04	.063
Other	40	1.00		

Table 3.5: Univariate logistic regression: Determinants of helping mothers position baby at the breast during counseling

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.31	0.16, 0.59	< .001
10-20 hour course	106	0.25	0.14, 0.43	< .001
>20 hour course	174	0.51	0.30, 0.87	.013
Several classes over time	498	1.00		
Continuing education				
One conference a year	65	3.84	1.43, 10.27	.007
Training at job	339	3.81	1.84, 7.87	< .001
Conferences and training away from job	323	4.29	2.06, 8.97	< .001
Study on own time	80	6.64	2.31, 19.08	< .001
No additional training or education	40	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	0.83	0.28, 2.49	NS
< 5 miles	261	0.89	0.30, 2.69	NS
6-25 miles	244	1.00	0.33, 3.03	NS
26-50 miles	47	0.88	0.23, 3.40	NS
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	0.40	0.19, 0.83	.014
1-4 months	37	0.32	0.13, 0.75	.009
5-6 months	25	0.86	0.23, 3.13	NS
6-12 months	87	0.81	0.37, 1.78	NS
12-24 months	445	0.99	0.56, 1.73	NS
>24 months	182	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.08	0.03, 0.22	< .001
1-4 years	322	0.18	0.07, 0.47	< .001
5-9 years	191	0.49	0.17, 1.39	NS
10-15 years	104	0.33	0.11, 1.01	.051
>15 years	146	1.00		
College education				
Did not attend college	82	0.66	0.35, 1.22	NS
Attended but did not complete college	265	1.29	0.80, 2.08	NS
Completed college	500	1.00		

Work setting				
Rural: < 10,000 people	124	0.71	0.35, 1.45	NS
Small city: 10-100,000 people	240	1.26	0.64, 2.48	NS
Medium city: 100-500,000 people	191	1.39	0.67, 2.85	NS
Urban large city: >500,000 people	179	0.99	0.49, 1.98	NS
Suburban near a medium or large city	113	1.00		
Age				
Under 30 years	139	0.24	0.05, 1.06	.060
30-39 years	298	0.30	0.07, 1.30	NS
40-49 years	202	0.35	0.08, 1.56	NS
50-59 years	162	0.34	0.08, 1.53	NS
Over sixty years	46	1.00		

Table 3.6: Univariate logistic regression: Determinants of observing mothers breastfeed their babies during counseling

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.18	0.08, 0.39	< .001
10-20 hour course	106	0.14	0.07, 0.28	< .001
>20 hour course	174	0.46	0.22, 0.97	.041
Several classes over time	498	1.00		
Continuing education				
One conference a year	65	6.46	2.11, 19.80	.001
Training at job	339	7.07	3.27, 15.28	< .001
Conferences and training away from job	323	9.12	4.08, 20.41	< .001
Study on own time	80	10.23	3.09, 33.87	< .001
No additional training or education	40	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	1.27	0.41, 3.90	NS
< 5 miles	261	1.40	0.45, 4.34	NS
6-25 miles	244	2.29	0.70, 7.47	NS
26-50 miles	47	2.90	0.50, 16.84	NS
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	0.39	0.16, 0.97	.043
1-4 months	37	0.33	0.11, 0.97	.043
5-6 months	25	1.54	0.19, 12.50	NS
6-12 months	87	0.64	0.25, 1.64	NS
12-24 months	445	0.92	0.45, 1.89	NS
>24 months	182	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.10	0.04, 0.28	< .001
1-4 years	322	0.36	0.14, 0.95	.038
5-9 years	191	2.22	0.52, 9.45	NS
10-15 years	104	0.58	0.17, 1.95	NS
>15 years	146	1.00		
College education				
Did not attend college	82	0.98	0.40, 2.41	NS
Attended but did not complete college	265	0.82	0.47, 1.41	NS
Completed college	500	1.00		

Work setting				
Rural: < 10,000 people	124	0.41	0.15, 1.09	.074
Small city: 10-100,000 people	240	0.65	0.25, 1.68	NS
Medium city: 100-500,000 people	191	0.70	0.28, 2.08	NS
Urban large city: >500,000 people	179	0.78	0.28, 2.14	NS
Suburban near a medium or large city	113	1.00		
Age				
Under 30 years	139	0.26	0.03, 2.04	NS
30-39 years	298	0.23	0.03, 1.76	NS
40-49 years	202	0.48	0.06, 3.86	NS
50-59 years	162	0.19	0.03, 1.46	NS
Over sixty years	46	1.00		
Counselor race/ethnicity				
Black/African American	64	1.31	0.33, 5.20	NS
Latino/Hispanic American	92	1.59	0.42, 5.98	NS
Multiracial American	17	0.83	0.14, 5.05	NS
White/Caucasian	634	1.36	0.46, 3.97	NS
Other	40	1.00		

Table 3.7: Univariate logistic regression: Determinants of correcting a poor latch by the baby at the breast during counseling

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.42	0.25, 0.72	.001
10-20 hour course	106	0.40	0.26, 0.63	< .001
>20 hour course	174	0.88	0.58, 1.34	NS
Several classes over time	498	1.00		
Continuing education				
One conference a year	65	5.10	2.17, 11.98	< .001
Training at job	339	5.14	2.59, 10.21	< .001
Conferences and training away from job	323	6.75	3.36, 13.53	< .001
Study on own time	80	5.35	2.35, 12.17	< .001
No additional training or education	40	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	1.20	0.55, 2.63	NS
< 5 miles	261	1.16	0.53, 2.54	NS
6-25 miles	244	1.41	0.64, 3.11	NS
26-50 miles	47	1.31	0.48, 3.55	NS
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	0.30	0.16, 0.55	< .001
1-4 months	37	0.22	0.10, 0.46	< .001
5-6 months	25	0.53	0.20, 1.37	NS
6-12 months	87	0.54	0.29, 0.99	.046
12-24 months	445	0.73	0.47, 1.14	NS
>24 months	182	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.21	0.11, 0.40	< .001
1-4 years	322	0.32	0.19, 0.56	< .001
5-9 years	191	0.61	0.33, 1.12	NS
10-15 years	104	0.56	0.28, 1.11	.094
>15 years	146	1.00		
College education				
Did not attend college	82	0.81	0.48, 1.35	NS
Attended but did not complete college	265	1.19	0.83, 1.70	NS
Completed college	500	1.00		

Work setting				
Rural: < 10,000 people	124	0.76	0.42, 1.37	NS
Small city: 10-100,000 people	240	0.98	0.58, 1.67	NS
Medium city: 100-500,000 people	191	1.03	0.59, 1.79	NS
Urban large city: >500,000 people	179	0.84	0.48, 1.46	NS
Suburban near a medium or large city	113	1.00		
Age				
Under 30 years	139	0.42	0.18, 0.98	.044
30-39 years	298	0.64	0.29, 1.43	NS
40-49 years	202	0.71	0.31, 1.64	NS
50-59 years	162	0.86	0.36, 2.01	NS
Over sixty years	46	1.00		
Counselor race/ethnicity				
Black/African American	64	2.04	0.89, 4.72	.094
Latino/Hispanic American	92	2.09	0.96, 4.57	.064
Native American	7	3.45	0.85, 13.93	.082
White/Caucasian	634	2.47	1.29, 4.75	.007
Other	40	1.00		

Table 3.8: Univariate logistic regression: Determinants of face-to-face counseling at work or volunteer site

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.26	0.14, 0.49	< .001
10-20 hour course	106	0.42	0.23, 0.76	.004
>20 hour course	174	0.35	0.21, 0.58	< .001
Several classes over time	498	1.00		
Continuing education				
One conference a year	65	1.04	0.37, 2.95	NS
Training at job	339	1.12	0.47, 2.66	NS
Conferences and training away from job	323	4.07	1.56, 10.61	.004
Study on own time	80	0.64	0.24, 1.66	NS
No additional training or education	40	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	0.78	0.22, 2.70	NS
< 5 miles	261	0.55	0.16, 1.89	NS
6-25 miles	244	0.52	0.15, 1.80	NS
26-50 miles	47	2.11	0.33, 13.36	NS
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	1.81	0.71, 4.59	NS
1-4 months	37	1.89	0.54, 6.60	NS
5-6 months	25	4.00	0.52, 30.86	NS
6-12 months	87	2.25	0.89, 5.69	.087
12-24 months	445	0.96	0.59, 1.56	NS
>24 months	182	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.41	0.18, 0.93	.032
1-4 years	322	0.51	0.26, 0.99	.048
5-9 years	191	0.65	0.31, 1.36	NS
10-15 years	104	0.84	0.35, 2.03	NS
>15 years	146	1.00		
College education				
Did not attend college	82	2.68	1.05, 6.83	.040
Attended but did not complete college	265	1.41	0.89, 2.24	NS
Completed college	500	1.00		

Work setting				
Rural: < 10,000 people	124	2.75	1.20, 6.32	.017
Small city: 10-100,000 people	240	1.40	0.76, 2.57	NS
Medium city: 100-500,000 people	191	1.84	0.94, 3.59	.074
Urban large city: >500,000 people	179	1.21	0.64, 2.28	NS
Suburban near a medium or large city	113	1.00		
Age				
Under 30 years	139	0.84	0.32, 2.22	NS
30-39 years	298	0.97	0.39, 2.43	NS
40-49 years	202	1.02	0.39, 2.63	NS
50-59 years	162	1.47	0.54, 4.03	NS
Over sixty years	46	1.00		
Counselor race/ethnicity				
Black/African American	64	2.14	0.54, 8.51	NS
Latino/Hispanic American	92	2.05	0.59, 7.15	NS
Multiracial American	17	2.29	0.25, 21.19	NS
White/Caucasian	634	0.84	0.32, 2.20	NS
Other	40	1.00		

Table 3.9 Univariate logistic regression: Determinants of use of client-centered counseling skills

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.60	0.33, 1.08	.087
10-20 hour course	106	1.19	0.67, 2.13	NS
>20 hour course	174	0.87	0.56, 1.35	NS
Several classes over time	498	1.00		
Continuing education				
One conference a year	65	2.67	1.01, 7.08	.049
Training at job	339	1.30	0.63, 2.67	NS
Conferences and training away from job	323	5.11	2.32, 11.26	< .001
Study on own time	80	0.94	0.41, 2.15	NS
No additional training or education	40	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	0.80	0.27, 2.41	NS
< 5 miles	261	0.50	0.17, 1.46	NS
6-25 miles	244	0.45	0.15, 1.34	NS
26-50 miles	47	0.74	0.20, 2.75	NS
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	2.44	1.08, 5.48	.031
1-4 months	37	1.98	0.73, 5.40	NS
5-6 months	25	2.27	0.65, 7.95	NS
6-12 months	87	2.68	1.24, 5.79	.012
12-24 months	445	1.27	0.84, 1.93	NS
>24 months	182	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.88	0.44, 1.76	NS
1-4 years	322	0.87	0.52, 1.45	NS
5-9 years	191	0.89	0.51, 1.56	NS
10-15 years	104	1.14	0.57, 2.25	NS
>15 years	146	1.00		
College education				
Did not attend college	82	2.05	1.03, 4.11	.042
Attended but did not complete college	265	1.94	1.28, 2.94	.002
Completed college	500	1.00		

Work setting				
Rural: < 10,000 people	124	1.18	0.64, 2.20	NS
Small city: 10-100,000 people	240	1.08	0.63, 1.85	NS
Medium city: 100-500,000 people	191	1.74	0.96, 3.15	.068
Urban large city: >500,000 people	179	1.93	1.05, 3.57	.036
Suburban near a medium or large city	113	1.00		
Age				
Under 30 years	139	0.81	0.28, 2.33	NS
30-39 years	298	0.51	0.19, 1.33	NS
40-49 years	202	0.44	0.16, 1.18	NS
50-59 years	162	0.56	0.20, 1.54	NS
Over sixty years	46	1.00		
Counselor race/ethnicity				
Black/African American	64	2.14	0.54, 8.51	NS
Latino/Hispanic American	92	0.95	0.31, 2.91	NS
Multiracial American	17	0.67	0.14, 3.17	NS
White/Caucasian	634	0.55	0.21, 1.43	NS
Other	40	1.00		

Table 3.10: Univariate logistic regression: Determinants of referral of breastfeeding mothers to healthcare professionals

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.26	0.09, 0.79	.018
10-20 hour course	106	2.15	0.27, 16.99	NS
>20 hour course	174	3.55	0.45, 27.90	NS
Several classes over time	498	1.00		
Continuing education				
One conference a year	65	7.11	0.77, 66.07	.085
Training at job	339	7.42	1.91, 28.89	.004
Conferences and training away from job	323	7.07	1.82, 27.51	.005
Study on own time	80	4.33	0.76, 24.76	.099
No additional training or education	40	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	7.82	1.07, 57.38	.043
< 5 miles	261	2.20	0.44, 11.03	NS
6-25 miles	244	2.90	0.54, 15.54	NS
26-50 miles	47	2.79	0.24, 32.04	NS
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	0.58	0.10, 3.54	NS
1-4 months	37	0.19	0.04, 0.98	.047
5-6 months	25	0.40	0.04, 4.02	NS
6-12 months	87	1.44	0.15, 14.06	NS
12-24 months	445	1.05	0.27, 4.10	NS
>24 months	182	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.23	0.06, 0.92	.037
1-4 years	322	6.73	0.70, 65.30	NS
5-9 years	191	1.32	0.26, 6.61	NS
10-15 years	104	0.71	0.14, 3.57	NS
>15 years	146	1.00		
College education				
Did not attend college	82	0.48	0.13, 1.82	NS
Attended but did not complete college	265	0.95	0.32, 2.87	NS
Completed college	500	1.00		

Work setting				
Rural: < 10,000 people	124	0.21	0.02, 1.85	NS
Small city: 10-100,000 people	240	0.30	0.04, 2.45	NS
Medium city: 100-500,000 people	191	1.70	0.11, 27.39	NS
Urban large city: >500,000 people	179	0.52	0.05, 5.10	NS
Suburban near a medium or large city	113	1.00		
Age				
Under 30 years	139	3.09	0.42, 22.59	NS
30-39 years	298	6.73	0.92, 48.99	.060
40-49 years	202	1.79	0.34, 9.53	NS
50-59 years	162	1.18	0.23, 6.06	NS
Over sixty years	46	1.00		

Table 3.11: Multivariate logistic regression: Independent predictors of hands-on practice during training¹

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.22	0.12, 0.39	< .001
10-20 hour course	106	0.29	0.19, 0.46	< .001
>20 hour course	174	0.55	0.38, 0.80	.002
Several classes over time	498	1.00		
How close is the nearest IBCLC for referral?				
IBCLC at site	260	3.38	1.51, 7.53	.003
< 5 miles	261	2.32	1.05, 5.14	.038
6-25 miles	244	3.56	1.60, 7.96	.002
26-50 miles	47	3.16	1.18, 8.43	.022
>50 miles	35	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	0.54	0.30, 1.00	NS
1-4 months	37	0.32	0.14, 0.72	.006
5-6 months	25	0.52	0.21, 1.31	NS
6-12 months	87	0.82	0.46, 1.45	NS
12-24 months	445	0.93	0.63, 1.36	NS
>24 months	182	1.00		
Counselor race/ethnicity				
Black/African American	64	0.50	0.20, 1.24	NS
Latino/Hispanic American	92	0.76	0.32, 1.82	NS
Multiracial American	17	1.20	0.29, 5.00	NS
White/Caucasian	634	0.49	0.22, 1.06	.068
Other	40	1.00		
College Education				
Did not attend	82	0.91	0.53, 1.55	NS
Attended but did not complete	265	0.80	0.57, 1.11	NS
Completed college	500	1.00		

Hosmer and Lemeshow Test of goodness-of-fit: Chi-square = 6.411; $p = 0.601$

¹ Adjusted for duration helping breastfeeding mothers

Table 3.12: Multivariate logistic regression: Independent predictors for observing mothers breastfeed their babies¹

	n	OR	95% CI	p-value
Training duration				
< 10 hour course	69	0.40	0.15, 1.11	.078
10-20 hour course	106	0.22	0.10, 0.46	< .001
>20 hour course	174	0.57	0.26, 1.26	NS
Several classes over time	498	1.00		
Continuing education				
One conference a year	65	4.11	1.15, 14.71	.030
Training at job	339	3.80	1.44, 10.04	.007
Conferences and training away from job	323	4.30	1.59, 11.63	.004
Study on own time	80	9.51	2.54, 35.54	.001
No additional training or education	40	1.00		
Duration helping breastfeeding mothers				
< 1 year	84	0.09	0.03, 0.31	< .001
1-4 years	322	0.29	0.09, 0.97	.044
5-9 years	191	1.67	0.36, 8.03	NS
10-15 years	104	0.42	0.11, 1.55	NS
>15 years	146	1.00		
Age				
Under 30 years	139	0.63	0.06, 6.28	NS
30-39 years	298	0.35	0.04, 3.38	NS
40-49 years	202	0.50	0.05, 4.96	NS
50-59 years	162	0.14	0.02, 1.35	.089
Over sixty years	46	1.00		
College Education				
Did not attend	82	1.16	0.41, 3.29	NS
Attended but did not complete	265	0.95	0.51, 1.78	NS
Completed college	500	1.00		

Hosmer and Lemeshow Test of goodness-of-fit: Chi-square = 3.129; $p = 0.926$

¹ Adjusted for job title

Table 3.13: Multivariate logistic regression: Independent predictors for correcting a poor latch by baby at the breast¹

	n	OR	95% CI	p-value
Continuing education				
One conference a year	65	3.85	1.57, 9.41	.003
Training at job	339	4.16	2.01, 8.62	< .001
Conferences and training away from job	323	6.40	3.09, 13.28	< .001
Study on own time	80	4.29	1.84, 10.04	.001
No additional training or education	40	1.00		
Past personal breastfeeding experience				
Did not breastfeed	71	0.47	0.24, 0.91	.025
1-4 months	37	0.31	0.13, 0.71	.006
5-6 months	25	0.67	0.24, 1.86	NS
6-12 months	87	0.74	0.39, 1.43	NS
12-24 months	445	0.77	0.49, 1.22	NS
>24 months	182	1.00		
Counselor race/ethnicity				
Black/African American	64	2.23	0.92, 5.41	.077
Latino/Hispanic American	92	2.47	1.09, 5.61	.031
Multiracial American	17	3.74	0.81, 17.28	.091
White/Caucasian	634	2.39	1.20, 4.76	.013
Other	40	1.00		
College Education				
Did not attend	82	0.87	0.50, 1.52	NS
Attended but did not complete	265	1.43	0.97, 2.10	.072
Completed college	500	1.00		

Hosmer and Lemeshow Test of goodness-of-fit: Chi-square = 3.981; $p = 0.859$

¹ Adjusted for place of work/volunteer

CHAPTER 4

CONCLUSIONS

The purpose of this study was to examine the association between BFPC educational attainment and level of training on the type of breastfeeding support and proficiency BFPCs provide to pregnant and breastfeeding clients in communities across the United States. The objectives were to determine whether: 1) the education level of BFPCs is associated with the type of training they receive, and 2) the education level and type of training of BFPCs are associated with the type of support they provide to their clients.

The major findings from the research indicate that overall, educational attainment of breastfeeding peer counselors is not a significant predictor for curriculum used in their training and types of support used during counseling sessions. Duration of initial breastfeeding training/curriculum does have a positive association with the practice of many breastfeeding support and counseling skills. Another major predictor of counselor support and counseling skills is the type of continuing breastfeeding education counselors receive after their initial training, with higher likelihood of use of desirable support and counseling skills associated with counselors continuing their breastfeeding education at conferences or trainings away from their job sites.

To the best of our knowledge, this is the very first national survey of breastfeeding counselors that examines the association between the educational attainment of counselors and the types of breastfeeding support they provide pregnant and nursing mothers. This research

provides preliminary data that allows examination of the potential importance of a number of BFPC attributes that may have the greatest effect on the type of support they provide to pregnant and breastfeeding mothers. Educational background of counselors is not a determinant of the type of training they receive to become peer counselor.

Different programs utilize different training curricula for their counselors, with differences in content and duration. We observed a strong association between duration of training, content of training curriculum and the types of support BFPCs provide their clients. Our findings of the positive association of initial breastfeeding training duration with desirable BFPC breastfeeding support skills suggest that while the different training curricula for the many breastfeeding peer counselor programs may provide similar basic content, more advanced training techniques such as providing hands-on practice may only occur in longer duration training curricula that occur over several classes, since they would have more time to cover more topics and do this more extensively. Our data shows the significance of a comprehensive initial training in order to allow for the improvement of counselor self-efficacy that can potentially translate to the use of more effective counseling skills such as hands-on support. Our findings call for consideration of breastfeeding peer counselor programs across the country to adopt a training curriculum that is capable of providing counselors the needed competencies to make them more efficient in serving their clients.

Continuing the breastfeeding education of BFPCs is also an important aspect of counselor efficacy. This ensures that BFPCs receive up-to-date, accurate, and relevant information, as well as an opportunity for counselors to improve their own breastfeeding support skills or even learn new ones. This signifies a need for breastfeeding peer counselor programs to encourage and

support their counselors to seek regular continuing education as a means of updating their breastfeeding knowledge and proficiency.

Further research may be needed in order to examine more closely the relationship between BFPC training, continuing education and the support BFPCs provide to mothers, as well as the content and consistency of training curricula of BFPC programs. It would also be important for future studies to examine BFPC training curricula and use of continuing breastfeeding education by region of the country, and compare with breastfeeding rates by region. This will shed some light on why certain states have met the Healthy People objectives for breastfeeding while others have not. The majority of the literature available on the efficacy of BFPCs pertains mostly to WIC programs throughout the country, so information about other breastfeeding support programs in terms of the training curricula used and their influence on the type of support offered to clients would be beneficial. This may show a need for a standardized training and credentialing program for BFPCs across the United States to ensure BFPCs are more proficient in the types of support and counsel they offer to help achieve the Healthy People 2020 breastfeeding goals for the country.

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APPENDICES

APPENDIX A

Table A1: Use and frequency of participants' counseling techniques

	n	%
Help mothers position baby (hands on)?		
Never	106	12.5
Rarely	153	18.1
Sometimes	251	29.6
Often	337	39.8
Observe mother breastfeed her baby?		
Never	65	7.7
Rarely	75	8.9
Sometimes	229	27.0
Often	478	56.4
Correct baby's poor latch at the breast?		
Never	207	24.4
Rarely	129	15.2
Sometimes	230	27.2
Often	281	33.2
Counsel mothers face-to-face at your place of work?		
Never	108	12.8
Rarely	96	11.3
Sometimes	198	23.4
Often	445	52.5
Use client-centered counseling skills with pregnant and breastfeeding women?		
Never	155	18.3
Rarely	47	5.5
Sometimes	179	21.1
Often	466	55.0
Refer mothers to health care professionals?		
Never	17	2.0
Rarely	123	14.5
Sometimes	516	60.9
Often	191	22.6
Counsel mothers face-to-face in the hospital (maternity unit)?		
Never	420	49.6
Rarely	198	23.4
Sometimes	131	15.5
Often	98	11.6

Counsel mothers face-to-face in the hospital (baby in NICU)?		
Never	585	69.1
Rarely	165	19.5
Sometimes	72	8.5
Often	25	3.0
Have contact with clients after work hours?		
Yes	300	36.1
No	531	63.9
Plan and teach a prenatal breastfeeding class?		
Never	397	46.9
Rarely	127	15.0
Sometimes	135	15.9
Often	188	22.2
Lead a breastfeeding support group meeting?		
Never	371	43.8
Rarely	99	11.7
Sometimes	120	14.2
Often	257	30.3
Plan and teach a back to work/school breastfeeding class?		
Never	565	66.7
Rarely	129	15.2
Sometimes	100	11.8
Often	53	6.3

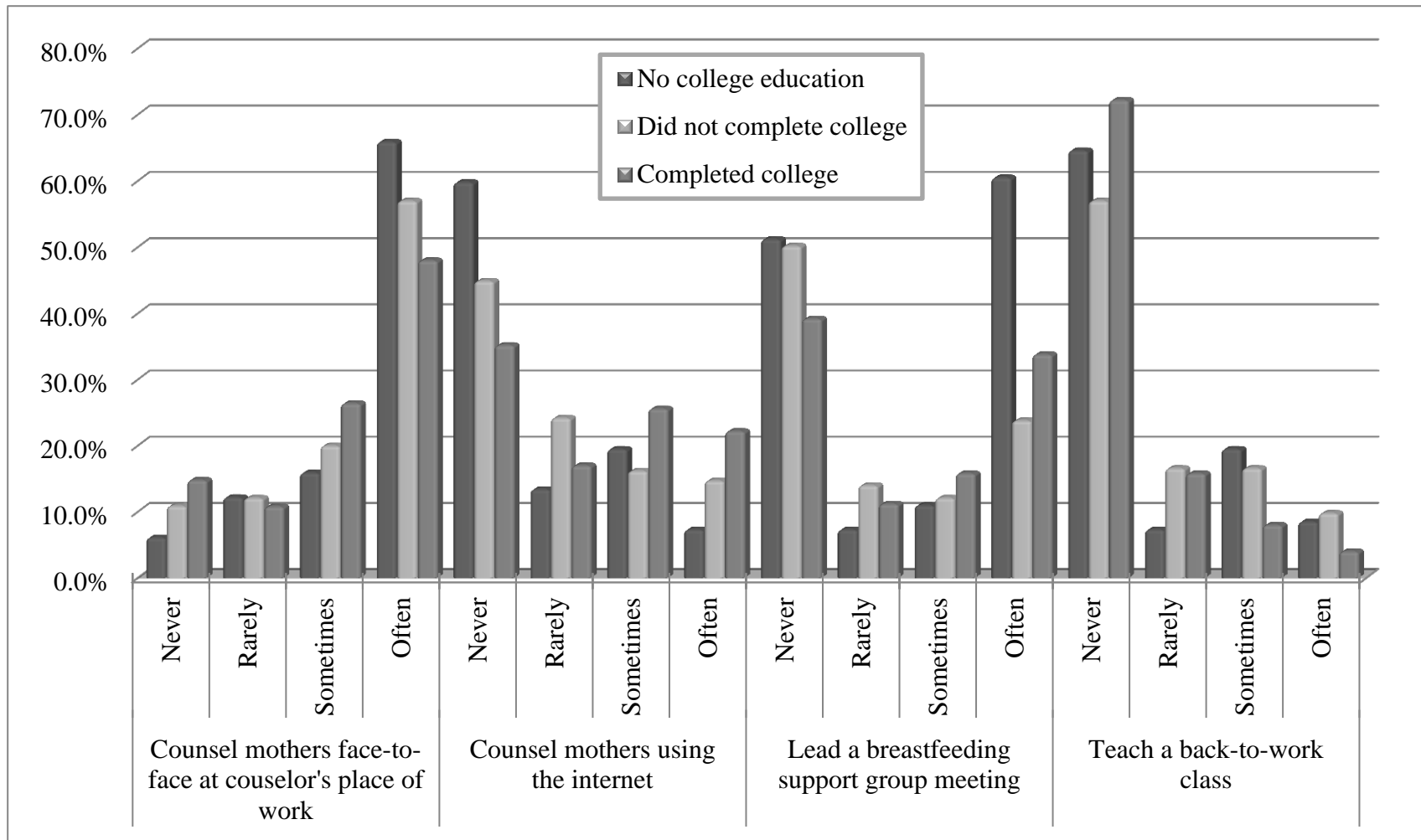


Figure A1: Educational attainment, by frequency of use of various BFPC counseling settings

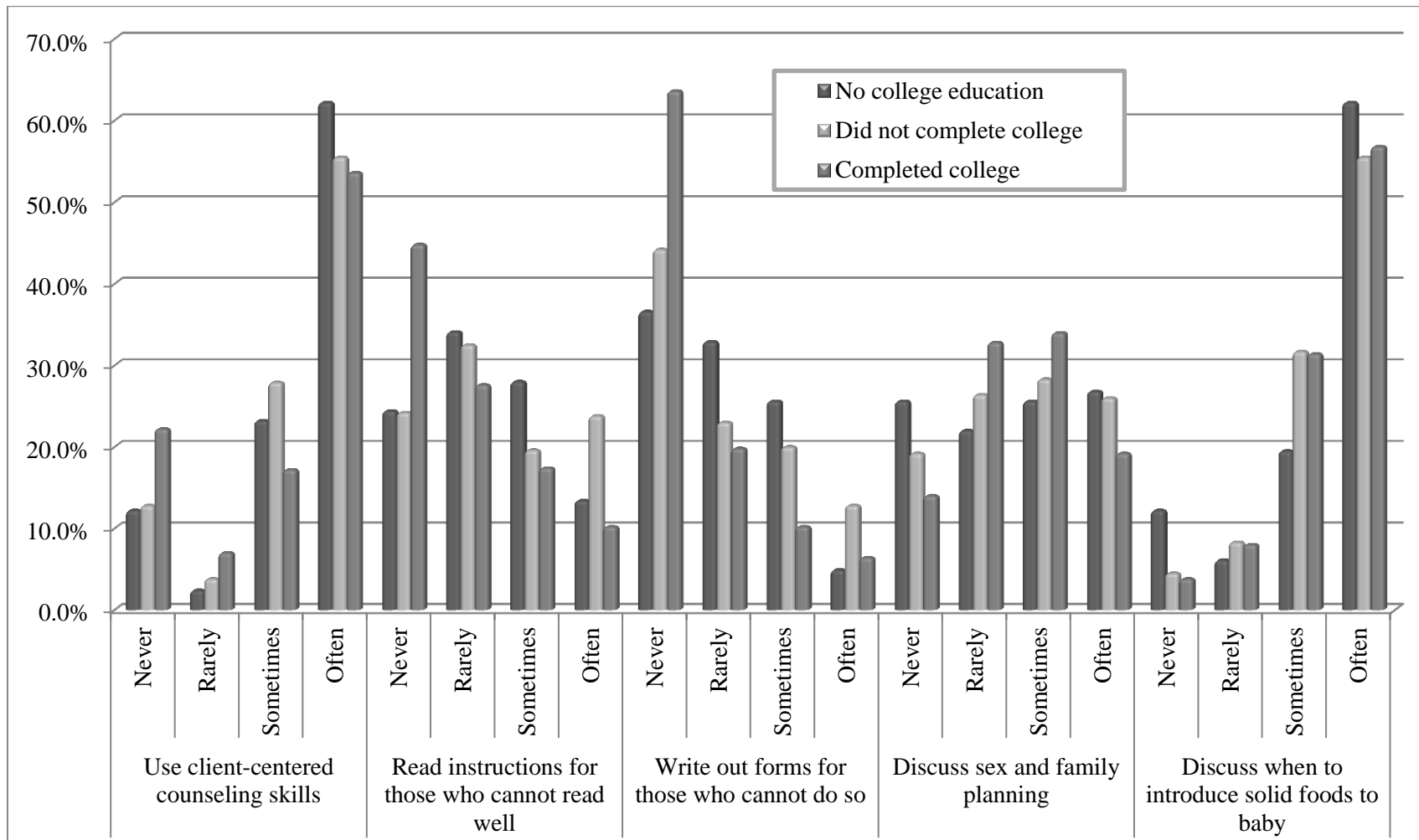


Figure A2: Educational attainment, by frequency of extra support to clients

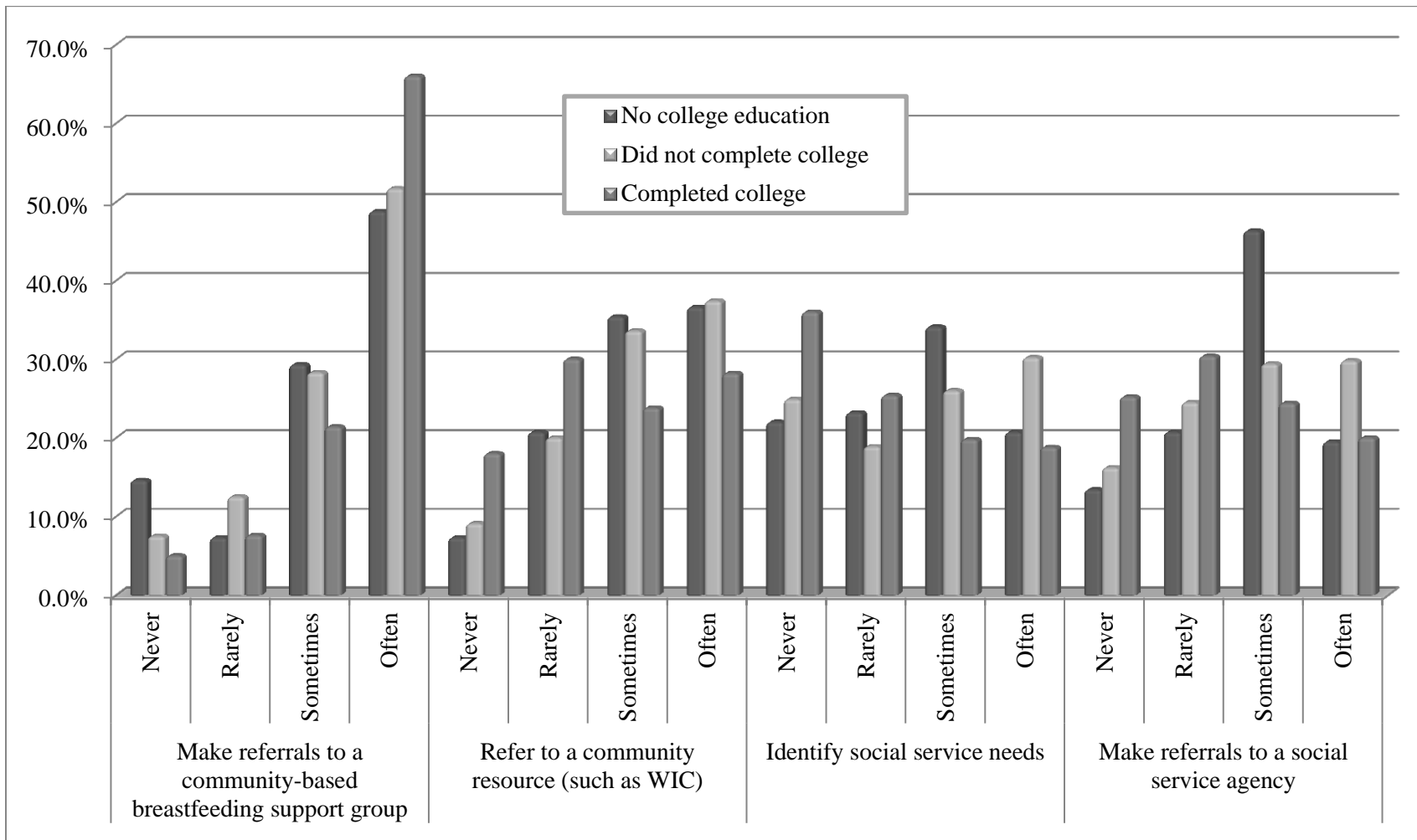


Figure A3: Educational attainment, by referral of clients to outside resources

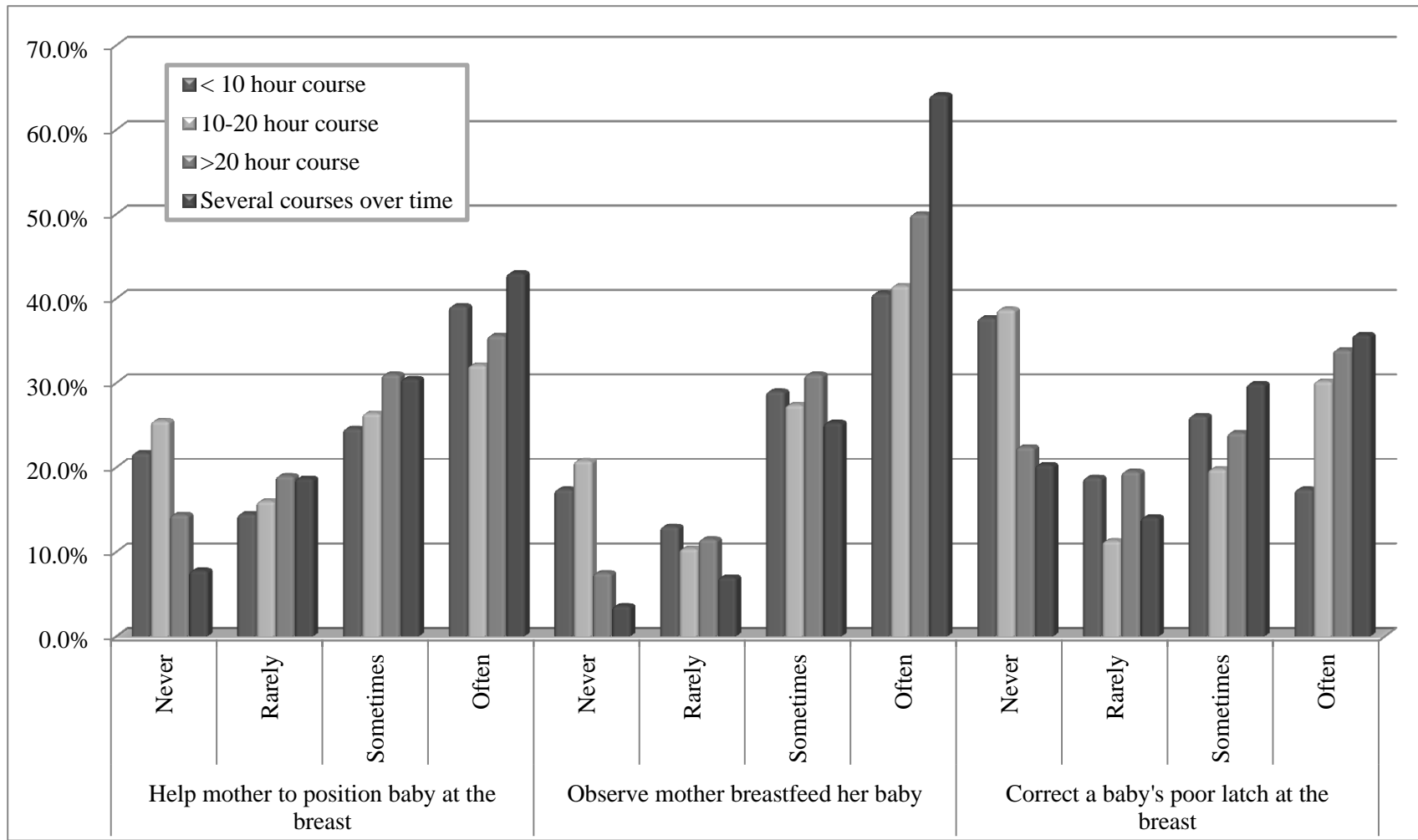


Figure A4: BFPC training duration, by frequency of hands-on support

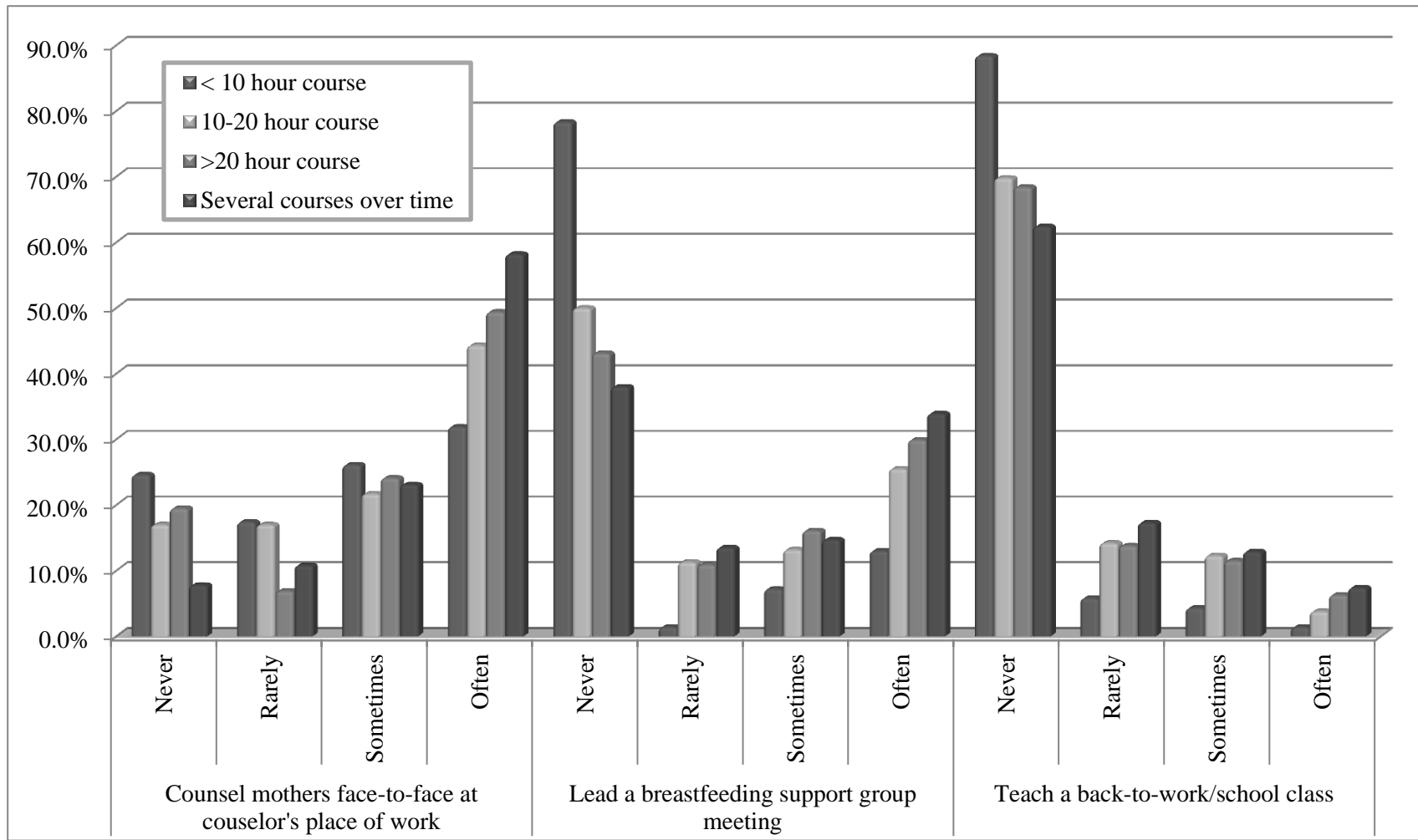


Figure A5: BFPC training duration, by frequency of use of various BFPC counseling settings

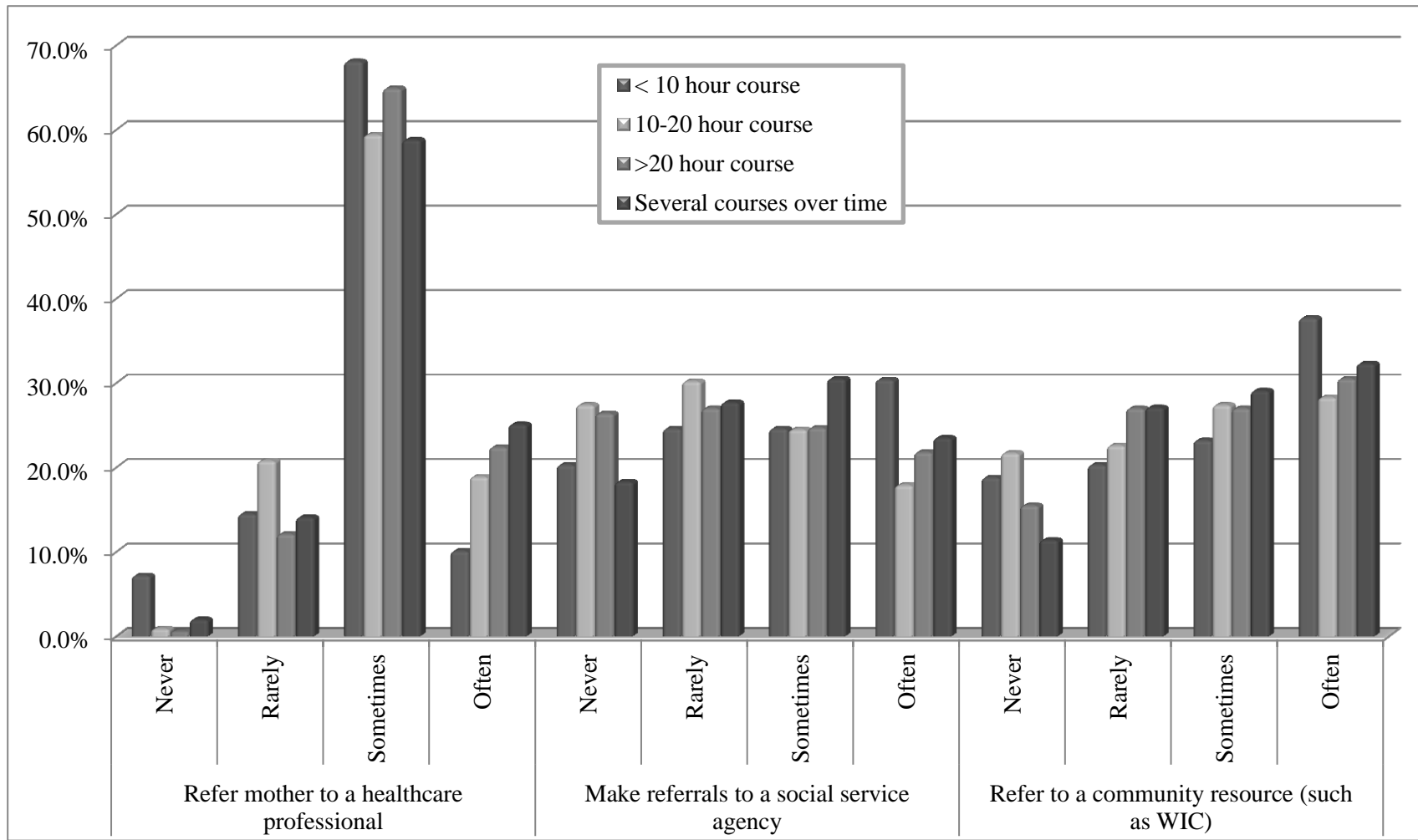


Figure A6: BFPC training duration, by referral of clients to outside resources

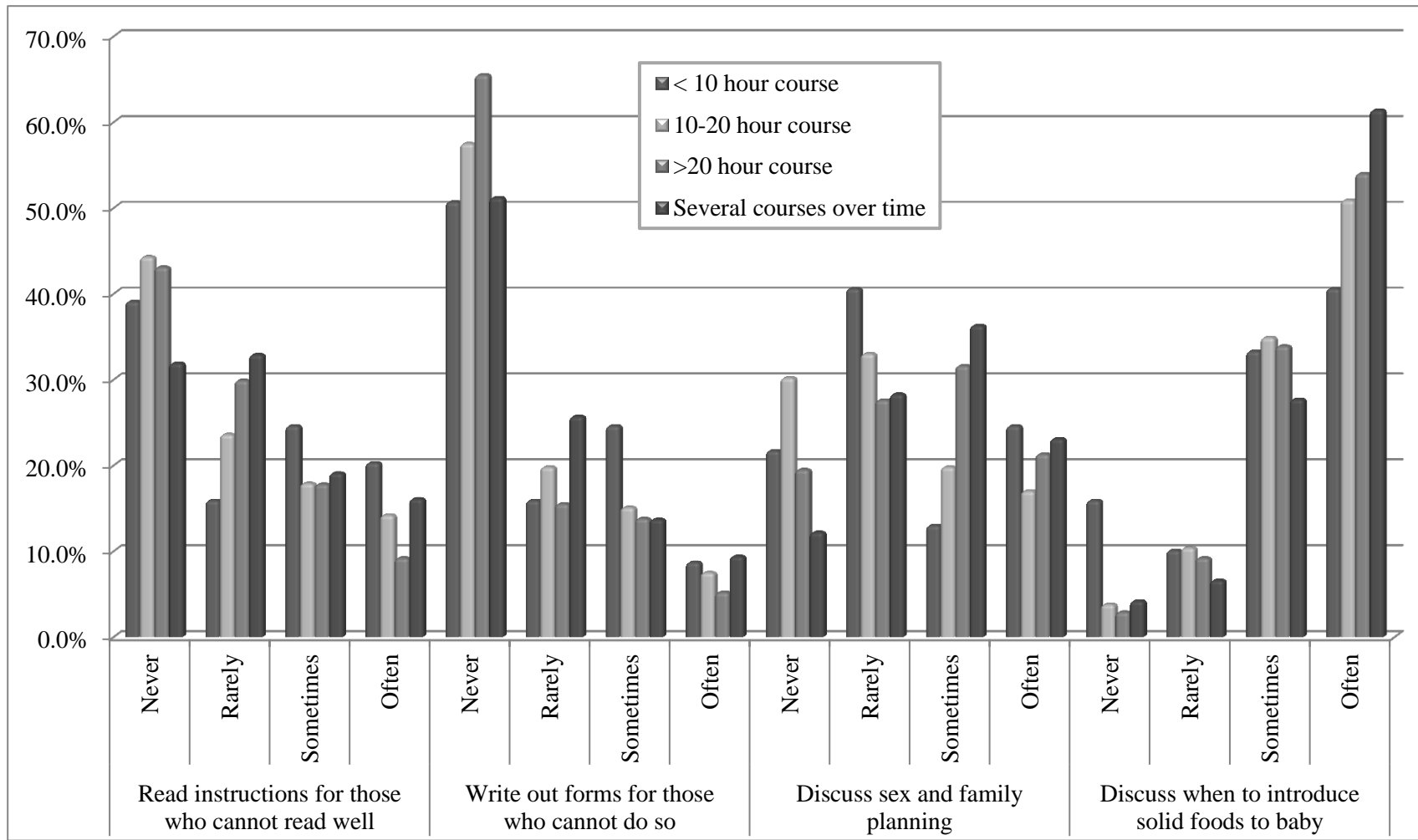


Figure A7: BFPC training duration, by frequency of extra support to clients

APPENDIX B
SURVEY QUESTIONNAIRE

1. Consent

July 6, 2009

Dear Breastfeeding Counselor:

The International Board of Lactation Consultant Examiners (IBLCE) is sending out a national survey to peer counselors, nutrition educators, and home visitors to learn about the training and work of community breastfeeding counselors. I, the Project Manager, and Alex Anderson, professor of Nutrition in the Department of Foods and Nutrition at The University of Georgia and consultant to the project, invite you to take part in a research survey called "Community Breastfeeding Counselors Role Survey".

To take part in this survey, you must be 18 years of age or older.

Taking part in the survey will involve answering work related questions and it should only take about 15 minutes. Being in the study is voluntary, and you may choose not to take part or stop at any time without penalty or loss of benefits to which you are otherwise entitled.

Since the survey is internet based, it is important to understand that internet communications are not always secure and there is a limit to the confidentiality that can be guaranteed due to the technology itself. However, once the survey responses are received, you will remain anonymous. The results of the survey may be published, but your name will not be used. In fact, the published results will be presented in summary form only.

The findings from this project may provide information on the training, work description and the kind of support peer counselors provide pregnant and nursing mothers. There are no known risks or discomforts associated with this research.

If you have any questions about this survey, please feel free to call either Anne Andrianos (315-382-4768) or Alex Anderson (706-542-7614) or send an e-mail to AAndrianos@iblce.org, or anderson@fcs.uga.edu respectively. Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 612 Boyd GSRC, Athens, Georgia 30602-7411; telephone (706) 542-3199; email address irb@uga.edu.

By clicking YES (I agree to participate in this survey) below, you are agreeing to participate in the above described survey project.

Thank you for your consideration! Please print and keep this letter for your records.

Sincerely,

Anne Andrianos, RN, MS, Project Manager

Alex Anderson, PhD, MPH, CPH

* 1. I agree to participate in this survey.

Yes

No

2. Welcome

Thank you for taking the time to complete this survey. The information that you share may help create a new role for the community-based breastfeeding counselor.

Here are some instructions to help you with the survey:

There are 35 questions in this survey.

After reading each question and the answers, move the cursor onto the circle or square in front of your chosen answer(s) and click. Keep answering the questions, all the way down the page, then click on "Next". You will move on to the next page.

Most questions **MUST** be answered because your answers are very important. (These questions have a * in front of them). If you cannot move forward to the next page, it is because you did not answer a question. The unanswered question will be marked in red. Go back to the question and answer it, and then click on "Next". You can move back, if you need to change an answer by clicking "Prev" on the bottom of the page.

The black bar at the top of the page tells you how close to the end of the survey you are.

It is best to finish the survey in ONE session, that will take about 15 minutes. All your answers are important and you will remain anonymous! Be sure you click on "Done" when you finish the survey. Thank you, again.

The first question is easy...Let's get started!

* 1. In which position do you do MOST of your breastfeeding work?

Paid FULL time work

Paid PART time work

Volunteer (unpaid)

3. Paid Work

The next several questions are about your breastfeeding work, how you became a breastfeeding counselor and what you do. Your answers are very important as they help describe your role and how families can access your services.

* 1. Under which job title do you do most of your breastfeeding work?

- Childbirth educator
- Childcare worker (day care)
- Community Health Worker (CHW)
- Dietitian Technician - Registered (DT-R)
- Doula - birth
- Doula - post-partum
- Health care provider office staff
- Home health visitor
- Nurse (LVN or LPN)
- Nurse (RN)
- Nurse aid
- Nutritionist
- Nutrition aid/educator
- Peer counselor
- Retail store clerk (maternity, infant, breastfeeding store)
- Other

Other (please specify in space below)

* 2. For what agency or business do you do breastfeeding work?

Community health clinic

Cooperative Extension

Early Head Start

Healthy Start

Hospital NICU

Hospital maternity unit

Hospital pediatric unit

Military program

Natural foods/nutrition store

Public health department (not WIC)

Retail store (maternity, infant , breastfeeding store)

Women, Infant and Children (WIC)

Other

Other (please specify in space below)

* 3. How many days a week do you use your breastfeeding skills in your job?

Up to 1 day

Up to 2 days

Up to 3 days

Up to 4 days

Up to 5 days

* 4. About how much do you make in an hour?

Less than \$10

\$10 - \$15

\$16 - \$20

More than \$20

* 5. As part of your contract with your employer, are you available to your breastfeeding clients at times other than regular work hours?

Yes

No

* 6. Are benefits (like health insurance or continuing education, vacation days, etc.) included with your employment?

Yes

No

* 7. What kind of training or course(s) did you take to become a breastfeeding counselor? (You can check more than one answer).

A training or course that was less than 10 hours

A 10-20 hour training or course

A training or course that was more than 20 hours

Several trainings, classes or courses over time

* 8. Did any of your training include "hands on" practice or watching mothers and babies breastfeed "up close"?

Yes

No

* 9. How do you continue your breastfeeding education? (You can check more than one answer).

Go to one conference a year

Go to trainings at my job

Go to conferences and trainings away from the job

Study on my own time

Have not had additional training or education

10. Do you hold another breastfeeding title or credential? (You can check more than one answer).

International Board Certified Lactation Consultant (IBCLC)

Certified Lactation Counselor (CLC)

Certified lactation Educator (CLE)

La Leche League Leader

Other

Other (please specify)

4. Volunteer

The next several questions are about your volunteer (unpaid) work, how you became a breastfeeding counselor and what you do. Your answers are very important as they help describe your role and how families can access your services.

* 1. For what organization or in what setting do you do MOST of your volunteer service?

- Breastfeeding support organization (like La Leche League)
- Community based organization (like Black Mothers Nursing Association)
- Doula project (like Operation Special Delivery)
- Government sponsored service
- Hospital post-partum unit
- Hospital NICU
- Mother-baby group (like a play or exercise group)
- Mother's home
- Mothering information/support group (like Holistic Moms)
- New mothers internet group, list-serv, blog,
- Other

Other (please specify)

* 2. About how many days a week do you use your breastfeeding knowledge and skills helping others?

- Fewer than half a day
- Half day
- Up to 1 day
- Up to 2 days
- Up to 3 days
- Up to 4 days
- Up to 5 days

3. As part of your volunteer commitment, are you available to breastfeeding mothers at times other than "regular work" hours?

Yes

No

Does not apply

* 4. Are you paid for transportation and child care while you do volunteer work?

Yes

No

* 5. What kind of training or course(s) did you take to prepare to be a breastfeeding counselor? (You can check more than one answer).

A training or class that was less than 10 hours

A 10-20 hour training or course

A training or course that was more than 20 hours

Several classes, trainings, and/or courses over time

* 6. Did any of your training include "hands on" practice or watching mothers and babies breastfeed up close?

Yes

No

* 7. How do you continue your breastfeeding education? (You can check more than one answer).

Go to one conference a year

Go to trainings provided by my volunteer organization

Go to conferences and trainings in my community

Study on my own time (reading breastfeeding books and magazines)

Have not had more training or education

8. Do you hold another breastfeeding title or credential? (You may check more than one answer).

IBCLC (International Board Certified Lactation Consultant)

CLC (Certified Lactation Counselor)

CLE (Certified Lactation Educator)

LE (Lactation Educator)

LLL Leader (La Leche League Leader)

Other

Other (please specify)

5. Counseling Skills

These questions ask about how you develop supportive relationships with women. The questions ask about counseling skills and how often you have contact with women during pregnancy and after their babies are born.

There are many parts or answers to the questions that follow. All answers are important so try and answer them all!

* 1. How often do you do the following activities:

	Never	Rarely	Sometimes	Often
Counsel mothers "face to face" at your work or volunteer site	jn	jn	jn	jn
Counsel mothers "face to face" in a group meeting	jn	jn	jn	jn
Counsel mothers "face to face" in their homes	jn	jn	jn	jn
Counsel mothers "face to face" in the hospital (maternity unit)	jn	jn	jn	jn
Counsel mothers "face to face", at the hospital, who have babies in the NICU	jn	jn	jn	jn
Counsel mothers by phone	jn	jn	jn	jn
Counsel mothers using the internet	jn	jn	jn	jn
Plan and teach a pre-natal breastfeeding class	jn	jn	jn	jn
Lead a breastfeeding support group meeting	jn	jn	jn	jn
Plan and teach a "back to work/school" breastfeeding class	jn	jn	jn	jn

* 2. How often do you have this level of contact (this includes home/office visits, phone calls, mailings) with mothers during pregnancy?

	Never	Rarely	Sometimes	Often
3-7 times	jn	jn	jn	jn
1-2 times	jn	jn	jn	jn

* 3. How often do you have this level of contact with mothers and babies in the hospital after the baby is born?

	Never	Rarely	Sometimes	Often
1-3 times	jn	jn	jn	jn
3 or more times when baby is in the NICU	jn	jn	jn	jn

* 4. How often do you have this level of contact (this includes home/office visits, phone calls, mailings) with mothers and babies after birth?

	Never	Rarely	Sometimes	Often
1-3 times during the first week	jn	jn	jn	jn
1-5 times between 2 and 6 weeks	jn	jn	jn	jn
1-6 times between 7 weeks and 6 months	jn	jn	jn	jn
1-6 times between 7 months and 12 months	jn	jn	jn	jn
1-6 times between 12 months and 24 months	jn	jn	jn	jn

* 5. How often do you use following skills when working with pregnant and breastfeeding women?

	Never	Rarely	Sometimes	Often
Use "client centered" counseling skills (like 3 Step)	jñ	jñ	jñ	jñ
Use "active listening" skills	jñ	jñ	jñ	jñ
Use information gathering or history taking skills	jñ	jñ	jñ	jñ
Use phone counseling (triage) skills	jñ	jñ	jñ	jñ
Encourage informed decision making by parent(s)	jñ	jñ	jñ	jñ
Show sensitivity to family's cultural practices	jñ	jñ	jñ	jñ
Use a language other than English in your breastfeeding work	jñ	jñ	jñ	jñ
Read instructions or directions for clients who are unable to read well	jñ	jñ	jñ	jñ
Write out forms for clients who cannot do so	jñ	jñ	jñ	jñ
Identify social service needs (like housing or food needs)	jñ	jñ	jñ	jñ
Encourage or make referrals to social service agencies	jñ	jñ	jñ	jñ
Identify breastfeeding problems	jñ	jñ	jñ	jñ

6. Management

These questions, ask you about the tasks you DO and DON'T do as a breastfeeding counselor.

Again, there are many parts or answers to the questions that follow. All answers are important so try and answer them all!

* 1. How often do you discuss the following topics with pregnant mothers

	Never	Rarely	Sometimes	Often
Health risks of formula feeding	jn	jn	jn	jn
Normal breastfeeding patterns	jn	jn	jn	jn
Food preparation and storage safety	jn	jn	jn	jn
Making a plan for pumping and storing milk at work	jn	jn	jn	jn
Tips for nursing in public	jn	jn	jn	jn
Signs of good milk intake by the baby	jn	jn	jn	jn
Food choices high in vitamins and minerals	jn	jn	jn	jn
Different nursing positions	jn	jn	jn	jn
Inverted nipples and recommend breast shells	jn	jn	jn	jn
Care of the breasts during pregnancy	jn	jn	jn	jn
How colostrum and milk are made	jn	jn	jn	jn

* 2. How often do you discuss these topics with breastfeeding mothers

	Never	Rarely	Sometimes	Often
Sex and family planning options	jn	jn	jn	jn
Introducing a bottle (for the working mother)	jn	jn	jn	jn
Calorie intake to support lactation	jn	jn	jn	jn
Non-medical ways to increase milk supply(like nurse frequently)	jn	jn	jn	jn
How to manage leaking breasts	jn	jn	jn	jn
Breastfeeding after breast reduction surgery	jn	jn	jn	jn
Pumping and storage of milk if baby is in the NICU	jn	jn	jn	jn
Weight loss suggestions for the mother	jn	jn	jn	jn
Treating mastitis	jn	jn	jn	jn
When to introduce solids to the baby	jn	jn	jn	jn

* 3. How often do you do these tasks with or for breastfeeding mothers?

	Never	Rarely	Sometimes	Often
Ask permission to touch her baby	jn	jn	jn	jn
Help position baby (hands on)	jn	jn	jn	jn
Observe a feeding	jn	jn	jn	jn
Do a breast exam to check for a plugged duct or mass	jn	jn	jn	jn
Teach hand expression	jn	jn	jn	jn
Teach mothers how to use a breastpump	jn	jn	jn	jn
Show mothers how to use a supplemental (tube) feeding device	jn	jn	jn	jn
Bring mothers breastfeeding DVDs or books	jn	jn	jn	jn
Suggest ways to avoid problems (like feed often to avoid engorgement)	jn	jn	jn	jn
Recommend a medication for increasing milk supply	jn	jn	jn	jn
Observe home setting for safety	jn	jn	jn	jn
Recommend an exercise plan for weight loss	jn	jn	jn	jn
Suggest non-medical treatments like cold packs, warm showers, and rest	jn	jn	jn	jn
Refer mother to a community based breastfeeding support group like La Leche League	jn	jn	jn	jn

* 4. How often do you do these tasks with babies?

	Never	Rarely	Sometimes	Often
Finger assessment of the mouth	jn	jn	jn	jn
Check output by counting wet and soiled diapers	jn	jn	jn	jn
Check weight with a scale	jn	jn	jn	jn
Check for tongue tie	jn	jn	jn	jn
Recommend feeding schedule for increasing weight gain	jn	jn	jn	jn
Correct a poor latch (hands on)	jn	jn	jn	jn
Observe for proper physical development	jn	jn	jn	jn
Assess for jaundice	jn	jn	jn	jn
Teach tongue exercises for the baby with a latch problem	jn	jn	jn	jn
Offer guidance about infant safety	jn	jn	jn	jn

* 5. How often do you refer a mother to a health care professional (examples: IBCLC, midwife, physician) for breastfeeding help?

- Never
- Rarely
- Occasionally
- Frequently

* 6. What is the title of the person who checks your work, your written records, who gives you help (supervisor)? You can check more than one answer.

- RD
- RN
- IBCLC
- CLC
- Trained person in my volunteer organization (DA or APL)
- Don't have a supervisor
- Other

Other (please specify)

* 7. In case you need help or want to refer a mother or baby for breastfeeding help, how close is the nearest IBCLC?

- There is an IBCLC at my work or in my volunteer organization for immediate contact
- Less than 5 miles
- Between 6-25 miles
- Between 26-50 miles
- Over 50 miles

* 8. How often do you refer a mother to a community resource (like WIC, a food bank, a domestic violence shelter, a job training program) for assistance?

- Never
- Rarely
- Sometimes
- Often

7. Experience & Education

You are getting close to the end! Just a few quick questions about you!

* 1. For how many months/years (total) did you nurse your baby or babies?

1-4 months

5-6 months

6-12 months

more than 12 months

Other

Other (please specify)

* 2. For how long have you helped breastfeeding mothers and babies?

Less than 1 year

1-4 years

5-9 years

10-15 years

Over 15 years

* 3. How many years of high school did you finish?

1 year

2 years

3 years

4 years

4. Did you go to any of these vocational trainings or classes? (You may check more than one.)

- Child care
- Computer
- Cosmetology
- Cardio Pulmonary Resuscitation (CPR)
- Emergency Medical Technician (EMT)
- English as a Second Language (ESL)
- Foreign language
- Massage
- Nurses aid
- Nutrition
- None
- Other

Other (please specify)

5. Do you have a Vocational Diploma or an Associate Degree?

Yes

No

* 6. How many years of college or university did you attend? (Do not include Associate Degree program).

Did not attend college

Under 1

1 year

2 years

3 years

4 years

More than 5 years

8. Demographics

Just some statistics...3 more questions!

* 1. In which setting do you work or volunteer?

Rural: under 10,000 people

Small city: 10-100,000 people

Medium city: 100-500,000 people

Urban large city: over 500,000 people

Suburb near a medium or large city

2. Are you female or male?

Female

Male

3. How old are you?

Under 20

20-29

30-39

40-49

50-59

Over sixty

9. Race/ethnicity

Providing breastfeeding assistance at the community level is very important for families. In order to get funding (money) for community breastfeeding counselor programs, it is important to collect information about the race and ethnicity of peer counselors, nutrition educators/assistants, home visitors and the women and babies they help. Your answers will provide important information.

You do not have to answer these questions. If you choose to answer the questions, please remember, your answers are confidential and there is no way your your answers can be traced.

1. What is your race or ethnic group?

Asian American

Black/African American

Latino/Hispanic American

Native American

Multiracial American

White Caucasian

Other

Other (please specify)

2. From which race or ethnic group are the mothers and babies that you most frequently work with?

Asian American

Black/African American

Latino Hispanic American

Native American

Multiracial American

White Caucasian

Other

Other (please specify)

3. Many of your clients may be new to this country (immigrants). From which race or ethnic group are the mothers and babies that you most frequently help?

- African
- Asian (including Indian)
- Caribbean
- Eastern European (including Russian and Ukrainian)
- Hispanic
- Middle Eastern
- Western European
- Other (If you want to be more specific, for example you work with many Chinese families, please write "Chinese" in the box below).

Other (please specify)

10. The last comment

What else would you like to say?

1. If you would like to add a comment or tell us about something special about your work, please write about it here.

11. End

This is the end of the survey! THANK YOU for your time.
Be sure to click "DONE" when you finish.