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ABSTRACT

SOCIOCULTURAL BARRIERS TO BREAST FEEDING IN AFRICAN AMERICAN WOMEN WITH FOCUSED INTERVENTION TO INCREASE PREVALENCE

by
Alicia C. Simpson

Objective: The goal of this study is to uncover sociocultural barriers to breastfeeding among African American women in the Atlanta metropolitan area and provide an educational intervention based on identified barriers to increase the willingness to breastfeed. **Methods:** Non-Hispanic African American women, 6 to 9 months pregnant, between the ages of 18 and 45, of varying socioeconomic status were recruited from multiple Obstetrics and Gynecology clinics throughout the Atlanta-metropolitan area. Participants completed a self-administered pre-test survey that questioned their intention to breastfeed and anticipated barriers associated with breastfeeding. Those who were unsure of breastfeeding or did not plan to breastfeed were asked to participate in an educational intervention that provided information about breastfeeding, the benefits to mother and baby and managing commonly perceived barriers. Immediately after the intervention a post-test was provided. A second post-test was conducted after all participants delivered their baby. Chi-square analysis was performed to examine the distribution of actual breastfeeding initiation rates by initial intention as well as by age, income and education. **Results:** Forty-nine women participated in the study. 18 of 20 women (90%) who intended to exclusively breastfeed initiated breastfeeding. Sixteen women reported that they did not intend to breastfeed. After receiving the intervention, 56.3% (n=9) initiated breastfeeding. Thirteen women reported they were unsure of their feeding plans in the pretest. Of these, 69.2% (n=9) initiated breastfeeding. Participants

reported their primary barriers to breastfeeding were fear of pain, difficulty breastfeeding once they returned to work and lack of support from family, friends and their partner/spouse/father of the child. A significant association was observed between ages 25-29 years old and initiation of breastfeeding in women who were unsure of their breastfeeding plans (p=0.005). No association was found between income or education and initiation of breastfeeding. **Conclusion:** Education about breastfeeding was a significant barrier to breastfeeding in the African-American women in our study population. Women who participated in the intervention were more likely to initiate breastfeeding. Employment status, income, and education were not significant factors in a woman's decision to initiate breastfeeding.

SOCIOCULTURAL BARRIERS TO BREAST FEEDING IN AFRICAN AMERICAN WOMEN WITH FOCUSED INTERVENTION TO INCREASE PREVALENCE

by
Alicia C. Simpson

A Thesis

Presented in Partial Fulfillment of Requirements for the Degree of

Master of Science in Health Sciences

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Atlanta, Georgia
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TABLE OF CONTENTS

List of Tables....iv
Abbreviations....v

Chapter
I. INTRODUCTION....1

II. LITERATURE REVIEW....5
Perceptions....5
Behaviors....7
Interventions....14
III. METHODS....17
IV. RESULTS....21
Demographics....21
Pre-Test Results....21
Post-Test A....23
Post-Test B....23
V. DISCUSSION AND CONCLUSIONS....25

Appendix
A. Modified Infant Feeding Intentions Scale....40
B. Your Guide to Breast Feeding For African American Women....44
C. Post-Test Part A Interview Questions....45
D. Post-Test Part B Interview Questions....48

REFERENCES....49

LIST OF TABLES

Table Page

1. Annual Household Income of Study Participants 32

2. Education Level of Study Participants 32

3. Pre-Intervention Infant Feeding Plans of Participants 33

4. Participant Perceived Barriers to Breastfeeding 34

5. Post-Intervention Infant Feeding Plans 35

6. Perceived Barriers to Breastfeeding Post Educational Intervention 36

7. Breastfeeding initiation rates across entire study population by Pre-Test Reported Intention to Breastfeed 36

8. Age distribution of mothers who did and did not initiate breastfeeding 37

9. Income distribution of mothers who did and did not initiate breastfeeding 37

10. Level of education distribution of mothers who did and did not initiate breastfeeding 38

11. Anticipated duration of breastfeeding based on age in women who identified as intending to breastfeed exclusively 38

12. Age distribution of breastfeeding initiation rates post-intervention in participants who were unsure of their feeding plans.....39

ABBREVIATIONS

AAP	American Academy of Pediatrics
GA	Georgia
OBGYN	Obstetrics and Gynecology
NHANES	National Health and Nutrition Examination Survey
SGA	Small for Gestational Age
WIC	Women Infant and Children Program
NICU	Neonatal Intensive Care Unit
US	United States
USA	United States of America

CHAPTER I

SOCIOCULTURAL BARRIERS TO BREAST FEEDING IN AFRICAN AMERICAN WOMEN WITH FOCUSED INTERVENTION TO INCREASE PREVALENCE

Introduction

Breast milk is the optimal form of nourishment for infants as it is designed specifically by the mother to meet the evolving nutritional needs of her infant from birth through early childhood. Recent studies have shown that breast milk is not only nutritionally beneficial for the child but breastfeeding also offers short and long-term protective health benefits for the mother and child [1, 2]. Short-term benefits to the infant include reducing the risk of gastroenteritis and a risk reduction of 72 percent in hospitalization for lower respiratory tract infections in the first year[3, 4]. Exclusive breastfeeding for at least 3 months reduces the risk of otitis media by 50 percent[4]. Additionally, colds, ear and throat infections were reduced by 63 percent in infants who are exclusively breastfed for at least 6 months[4]. In the long-term, breastfeeding reduces the risk of childhood and adult obesity, more favorable plasma lipid profile, blood pressure, and improves cognitive development[5,3].

The breastfeeding mother enjoys an increase of oxytocin levels post-partum that result in less postpartum bleeding and hastens the involution of the uterus post-partum[4]. Research has demonstrated that lactating women are able to return to their pre-pregnancy weight faster than women who formula feed their infant. Breastfeeding mothers have improved bone remineralization which, in turn, reduces the incidence of hip

fractures in postmenopausal women who breastfed. There is also a reduced risk of ovarian cancer and premenopausal breast cancer[4]. This risk reduction is cumulative, therefore the longer a women breastfeeds the greater her risk reduction of ovarian and breast cancer. For all these reasons, and more, in 2012 the American Academy of Pediatrics (AAP) reaffirmed their position that children should be breastfed exclusively until 6 months of age and then concurrently with the introduction of solid foods from 6 months to at least a year of age[4].

In the United States the percentage of women who initiate breastfeeding is nearly 75 percen[6]t. Although initiation rates are high, very few infants are exclusively breastfed for the first 6 months of life[6]. The percentage of women who continue to breastfeed exclusively after 3 months falls to 35 percent and by 6 months drops dramatically to 14.8 percent[7]. In the state of Georgia 71.6 percent of woman initiated breastfeeding while only 27.1 percent continued to breastfeed exclusively at 3 months and 10.1 percent were still exclusively breastfeeding at 6 months[7]. Nationally, only 54 percent of African American mothers try breastfeeding which is 21 percent below the overall national average[8, 9]. In Georgia 53.2 percent of African American mothers initiate breastfeeding and 27.3 percent exclusively breastfeed through 6 months of age[7]. Additionally, the rate of non-exclusive breastfeeding at 6 months is merely 20 percent among African Americans, which is less than half of the national average of non-exclusive breastfeeding which is 44.3 percent[1]. Consistently, non-Hispanic blacks are less likely to initiate or sustain breastfeeding than their white counterparts[6]. One of the women's health and pediatric health goals of *Healthy People 2020* is to increase initiation of breastfeeding to 81.9

percent nationwide, increase the rate of non-exclusive breastfeeding at 6 months to 60.6 percent and increase the rate of exclusive breastfeeding through 6 months to 25.5 percent[7]. Breastfeeding rates are undoubtedly associated with ethnicity as well as factors such as maternal age and family income. Breastfeeding rates are the lowest among African-Americans, women under 20 years old (including non-Hispanic blacks, white and Hispanics) and among low-income non-Hispanic blacks and whites[1] Therefore, it is imperative to find intervention programs that target the disparities among ethnic groups to not only increase the health of the mothers and children in these minority populations but to also increase the overall health and well-being of the nation's women and children as outlined in the *Health People 2020* goals.

The majority of research and data available for African-American women has been done with low-income participants or individuals in the Women, Infants and Children (WIC) program. This population has reported that they are less likely to receive breastfeeding advice from WIC counselors and more likely to be advised to bottle-feed by WIC counselors than white women. Beal (2003) concluded that the lack of breastfeeding advice to African-American women puts them at greatest risk for not initiating breastfeeding[10]. Currently there are no significant data that identifies barriers to breastfeeding among African American women of various socioeconomic backgrounds.

This research had two aims: 1) to collect ethnographic data about the barriers to breastfeeding in African American women, of all economic groups, in Atlanta metropolitan area and 2) to test an existing educational intervention that focuses on the

common barriers to breastfeeding among African-American women and examine its efficacy in addressing the barriers identified by study participants. The goal was to uncover sociocultural barriers to breastfeeding among African American women in the Atlanta metropolitan area and provide an educational intervention based on identified barriers to increase the initiation rates of breastfeeding and willingness to breastfeed among study participants.

Based on the literature review it was anticipated that the greatest perceived barriers to breastfeeding in African American women would be the perceived convenience of using formula when they returned to work, insecurity about the ability of breast milk to meet the complete nutritional needs of an infant, as well as a lack of community and/or family support for breastfeeding. It was hypothesized that of the women who showed ambivalence about breastfeeding or who showed no interest in breast feeding, that a significant number would initiate breastfeeding and sustain exclusive breastfeeding for 6 months after the educational intervention was administered.

CHAPTER II

Literature Review

Perceptions

Cricco-Lizza, et al. (2006) examined the perceptions that black, non-Hispanic mothers had of infant-feeding promotion methods by nurses and physicians. Study participants were part of a Special Supplemental Nutrition Program for the WIC clinic in the New York metropolitan area. Ethnographic research was conducted using 11 informants who were followed during pregnancy and the first year postpartum. The informants reported limited breastfeeding education and support during pregnancy, child birth, stay in neonatal intensive care unit postpartum, and recovery. They also expressed trust/distrust concerns and varying degrees of anxiety about the ways they were treated by nurses and physicians[11]. The results of this study mirror that of an earlier study conducted by Beal et al. (2003) where the participants reported receiving less advice from WIC counselors on breastfeeding than white women in the same program[10]. There is also a pervasive theme in the literature of new mothers feeling unsupported by nurses in their efforts to breastfeed in the hospital with reports that nurses were unenthusiastic about breastfeeding, did not support a mother's efforts to breastfeed and encouraged bottle feeding from the start[12].

Kaufman et al. (2009) studied low income African-American and Puerto Rican women in North and Central Brooklyn New York using ethnographic research methods. The investigators found that while women in this study felt that breastfeeding was the best way to feed their infants, their commitment turned to ambivalence in the face of their perceptions about the dangers of breast milk (concerns about contamination of the breast milk by the mother), the perceived virtues of formula, and the practical and sociocultural challenges of breastfeeding. Women's ambivalence resulted in a widespread complementary feeding pattern that included breast milk and formula, and resulted in short breastfeeding durations[13].

Deborah McCarter-Spaulding (2007) studied the experience of breastfeeding from a black woman's perspective via a focus group composed of 8 African-American women between the ages of 31 and 35, six of which had college degrees with an income range of $61,000 to $70,000 a year. In contrast to the negative perceptions of breastfeeding by low income mothers in studies that have looked at perceptions and behaviors about breastfeeding, the women in this study made more firm decisions to breastfeed prior to the birth of their child. The women discussed having a family history of breastfeeding, role models for breastfeeding in their family and community, and the importance of the health benefits of breast-feeding as reasons why making the decision to breastfeed was not difficult for them. Many of the women had initial concerns about milk supply specifically after trying to pump in the hospital with low-volume results and some blamed themselves for the poor milk supply, but all the women stuck with it. Others found that once their child neared 1 year of age they began to be questioned by their

community about the duration of time they decided to breastfeed which in turn caused them to second guess themselves. Participants had a positive outlook on breastfeeding and saw breastfeeding as convenient, easy and inexpensive as well as enjoyable. The women in this study also sited that they had a great deal of support from female relatives, friends and the father of the baby. The author concluded that ethnicity alone may not be an effective or useful tool in understanding breastfeeding behavior. Factors such as age, education and income all positively influenced the rates of breastfeeding among the women in this study[14].

Behaviors

An expectant mother's intent to breastfeed is strongly correlated with initiation of breastfeeding post-partum, however, the intent to breastfeed is correlated with societal norms and a woman's environment. If a woman feels that society will accept and endorse her decision to breastfeed she is more likely to do so. Additionally, if a woman feels that she has support in her decision from not only society as a whole but from her friends and family she is more likely to initiate breastfeeding[15]. Hurley et al. (2008) examined how breastfeeding behaviors, perceptions and experiences vary by race/ethnicity among a low-income sample in the USA. The study participants were part of the Special Supplemental Nutrition Program for WIC. The study found that African-Americans were less likely than whites to initiate breast-feeding. Among mothers who did not initiate breastfeeding, African American and white mothers were more likely than Hispanic mothers to report perceptions of breastfeeding difficulty or pain and African American

mothers were more likely than white mothers to report cessation of breastfeeding upon return to work[16].

Brand et al. (2011) found that, among women who ceased breastfeeding 2-weeks post-partum the greatest proportion were African-Americans as well as women who had Medicaid insurance. Additionally the authors found that women older than 30 breastfed their baby's longer. The most common reason for cessation of breastfeeding was the perception that milk did not come in, perception by the mother that the baby preferred the bottle and sore breast or nipples. The authors sited that with individual breastfeeding education women might be able to overcome reasons for cessation like milk supply or sore nipples[15].

There appears to be an overall lack of confidence in one's ability to breastfeed and commitment to breastfeeding among African-American women for a variety of sociocultural and personal reasons. No matter the perceptions of potential breastfeeding issues, when a mother makes the decision to initiate breastfeeding she relies on not only breastfeeding experts such as nurses and lactation consultants to provide assistance but, possibly to a larger extent, those closest to her (friends, family and her partner). Often times when mothers run into challenges with initiating breastfeeding they internalize this as a failure in their roles as a mother and without proper support they lose confidence in their ability to breastfeed and yield more easily to formula feeding their baby when support is lacking[17]. Avery et al. (2009) examined the process that contributes to the decision to breastfeed or formula feed among African-American and Caucasian women

by analyzing data from 24 focus groups conducted in 2002 by the U.S. Department of Health and Humans Services and the National Ad Council. The aim was to increase breastfeeding rates among all U.S. women but specifically African-American women because of the low prevalence of breast-feeding within this ethnic group. The focus groups consisted of women from varying socioeconomic status (salary range from less than $20,000 to more than $50,000 a year), as well as multiple levels of education from some high school through a college degree or more. Participants were first time mothers of infants less than 18 months old or women who were pregnant or expecting to become pregnant within the year. Confidence was defined as women who expected a positive breastfeeding experience while also trusting her own judgment about her baby's well-being. Commitment was defined as women who made a significant investment in pursuing breastfeeding despite obstacles and barriers, while also accepting the potential negative aspects of breastfeeding and working through them.

Pregnant women in the study had an overall lack of confidence in their ability to breastfeed. The women doubted their ability to make the quality of milk and the amount of milk that their baby would need, questioned whether their babies would be able to latch properly, and expressed doubt in their ability to handle their perceived notions about the discomfort and inconvenience they associated with breastfeeding. Most pregnant women voiced an intention to try breastfeeding but very few participants firmly stated they would definitely breastfeed.

Among women who had children and were formula feeding them, common reasons to formula feed included: feelings that they were not producing enough milk or that the milk they produced didn't satisfy their baby and reports that the baby would not properly latch. Another reason provided for formula feeding was that the baby preferred formula and bottles, often times because they were given formula and bottles at the hospital. Those who initiated breastfeeding but then switched to formula feeding reported anxiety during their pregnancy and in the early postpartum period about their ability to produce enough breast milk. However, women who initiated and maintained breastfeeding also reported this same anxiety but displayed a confidence and commitment to breastfeed despite their initial fears. Breastfeeding mothers also reported receiving negative pressure from their partners, significant others and family about maintaining breastfeeding. Some women reported other family members didn't want their children "exposed" to breastfeeding or being told that they would never be able to leave the house because of the demands of breastfeeding. The key difference between the mothers who maintained breastfeeding and those who formula fed was their commitment to breastfeeding even when confronted with common breast-feeding problems like latching and sociocultural or familial pressures to not breastfeed. Women who formula fed also reported that they felt unsupported in the hospital with breastfeeding. The authors concluded that successful breastfeeding appeared to be dependent in part on one's attitude toward breastfeeding coupled with their commitment to breastfeed and confidence in their ability to breastfeed[18].

Lee et al. (2009) explored that racial and ethnic differences in breastfeeding initiation and duration among low-income, inner-city mothers in Philadelphia, PA. The authors investigated the effect of socio-demographic and infant characteristic, household environment, and health behaviors related to initiation of breastfeeding. The study population was predominantly young (18-24 years of age), non-Hispanic, African-American women in which less than 18.9 percent had education beyond high school, 33.6 percent had less than a high school education, 18 percent had been homeless or moved frequently within the year prior to their first prenatal visit. Additionally, 80 percent of participants reported receiving WIC however only 20 percent reported receiving other public assistance. Forty-eight percent of the women initiated breastfeeding for at least a week however breastfeeding was weaned at an average duration of 2.6 months. Women who received public assistance after their child's birth, gave birth to babies with low birth weight or who required transfer to the NICU, reported not having enough privacy or space at home or who smoked after the child was born were at an increased risk of early weaning. Conversely, women who cohabitated with the father of the baby (married or unmarried), showed intention to breastfeed prior to the birth of their child, and who did not receive WIC services after their child was born were more likely to breastfeed and for a longer duration of time than other mothers. The majority of studies exploring the ethnic differences between breastfeeding initiation among non-Hispanic white and non-Hispanic African Americans show a higher rate of breastfeeding initiation among non-Hispanic white women. However, Lee et al found that non-Hispanic African-American women were significantly more likely to initiate breastfeeding than non-Hispanic white women, however non-Hispanic white women breastfed for a longer duration. The authors

attributed this to the fact that both groups of women had similar socioeconomic status, education and underprivileged environment and therefore poverty and environment might have more to do with the breastfeeding initiation rates than ethnicity[19].

Breastfeeding self-efficacy tends to be predictive of the duration of time a mother breastfeeds as well as how she breastfeeds, that is whether she breastfeeds exclusively or in combination with formula. Self-efficacy is defined as the "mother's belief that she will be able to organize and carry out the actions necessary to breastfeed her infant[20]." Spaulding et al. (2009) sought to examine self-efficacy among African American mothers. Of the 155 women enrolled in the study 79 percent had at least some college education. The authors found that the intended duration of time to breastfed at 1 week postpartum was not a predictor of the actual duration at 1 or 6 months postpartum. Fifty three percent of participants reported a plan to exclusively breastfeed 1 week post-partum however at 1 month post-partum only 37 percent of these women were exclusively breastfeeding. Approximately 17 percent of women in this study weaned their babies from breast milk and changed to formula within 2 weeks with the most frequent reason being nipple soreness and perceived insufficient milk[20].

In her doctoral dissertation Karen Robinson (2010) examined prenatal breastfeeding self-efficacy and confidence through the narratives of African American women. Prenatal self-efficacy scores showed a preference toward breastfeeding rather than formula feeding for the 59 women studied. The author found that prenatal self-efficacy was predictive of the intended feeding method postpartum ($p=0.004$). However

many of the women did change from their original feeding plan. Seventy-one percent of breastfeeding mothers reported combination breastfeeding and formula feeding with at least 1 bottle of formula a day[21].

Mothers who choose to combine breastfeeding with formula feeding also have a shorter duration of overall breastfeeding than women who exclusively breastfeed, which is the preference of the American Academy of Pediatrics (AAP) and part of the Health People 2020 goals. Holmes et al. (2011) analyzed NHANES data from 1999 to 2006 and found that ethnicity played a strong role in combination breast milk and formula feeding. Nearly 18 percent of black infants were fed a combination of breast milk and formula from the first week of life as compared to only 7.2 percent of white infants ($p<0.0001$). Additionally infants from low-income families were more likely to be on combination breast milk and formula as well infants enrolled in WIC's Supplemental Nutrition Program ($p<0.0001$). Combination breast and formula feeding was found to be an independent predictor of breastfeeding duration in the entire sample population with a 40 percent risk of significantly decreasing breastfeeding duration[22].

There is much discussion in the literature of the barriers to breastfeeding in African-American women however, Lewallen et al. (2010) examined the reasons that African-American women initiate and sustain breastfeeding by conducting a focus group of 15 women who breastfed their babies for a minimum of 6 months. The women revealed that one of the major reasons they initiated breastfeeding was because it was the healthiest choice for the infants as well as a good way to establish a strong bond with

their infants. When this group of women did stop breastfeeding it was often not by choice but in response to a perceived necessity to do so – most often anticipated problems with returning to work or school. Although the women in this study initiated and sustained breastfeeding for at least 6 months they expressed a desire to have more advice from their peers about breastfeeding. They expressed that they had access to a wealth of written information on breastfeeding but desired a more personal and practical education in breastfeeding. The women expressed that their decision to breastfeed was not always met with support from their families. Many of the women reported that they had to continually defend their decision to breastfeed. Women reported being told that breastfeeding is "…what white people do" or that breastmilk would rot an infant's teeth because it was too sweet. There was also the assertion that if you breastfed a boy it would make him "soft." Women reported that in the hospital nurse continually undermined their decision to breastfeed and, in some cases, encouraged the mothers to use formula and put baby rice cereal in the bottle to help the baby sleep. The women stated the majority of negative comments they received about breastfeeding came from fellow African-Americans.[23] In the U.S., overall, support of the father of the baby is the biggest factor in breastfeeding for whites and support of friends is one of the most influential factors for blacks[24].

Interventions

Mickens et al. (2009) identified what factors impact low-income women's infant feeding decisions. A cross-sectional convenience sample of 109 black pregnant women who regularly attended the WIC clinic and associated programs in the Inland Empire

Region of California were recruited as study participants. Results indicate that women who attended support groups were more than twice as likely to intend to breastfeed compared with women who did not. These results highlight the importance of social influences on the decision to breastfeed, and indicate the need for broadened community-based education for the promotion of breastfeeding[25].

Education is one of the cornerstones to increasing the prevalence of women who initiate and sustain breastfeeding. Jon P. Weimer's (1998) research on breastfeeding promotion through the WIC Nutrition Education Initiative revealed that educating expectant mothers before they delivered increased initiation of breastfeeding among low-income women[26]. Pugh et al. (2010) sought to assess whether providing a breastfeeding support team results in higher breast-feeding rates at 6, 12 and 24 weeks postpartum in urban low-income mothers. Eighty-seven percent of study participants were African American and all study participants were part of the Special Supplemental Nutrition Program for WIC. The 24-week intervention included hospital visits by a breast-feeding support team, home visits, telephone support, and 24-hour pager access. At the conclusion of the study the intervention group was more likely to be breastfeeding at 6 weeks postpartum compared to the control or usual-care group.[9]

Murimi et al. (2010) examined the factors that influence breastfeeding decisions among women in the Special Supplemental Nutrition Program for WIC in central Louisiana. Nearly 31 percent of African-American's in the study did not breastfeed their infant's in contrast to nearly 18 percent of whites who did not breastfeed their infant. The

interventions developed by the WIC program to encourage breastfeeding appeared to have no effect on the participant's decision to breastfeed. Eighty-eight percent of study participants reported that the availability of free formula through WIC did not affect their decision to breastfeed or formula feed. Additionally, 59 percent of participants stated that the additional food package provided to breastfeeding women did not affect their decision to breastfeed either. Positive attributes of breastfeeding were identified by the study participants such as the belief that breastfeeding would aid in faster weight loss, and nearly 46 percent of participants believed that breastfeeding was beneficial to the mother and convenient. Participants who did not breastfeed reported a lack of motivation and having to return to school or work as the main reasons why they chose not to initiate breastfeeding. Those who initiated breast feeding but stopped cited the following three specific reasons including not having enough milk: sore nipples and the need to return to school or work.[27]

CHAPTER III

Methods

This study was a therapeutic trial in which research was conducted in the framework of a one-group pretest-posttest design preceded by a recruitment survey. The target population was non-Hispanic African American women, 6 to 9 months pregnant, between the ages of 18 and 45 and of varying socioeconomic status. Participants were recruited from multiple Obstetrics and Gynecology (OBGYN) clinics and doctor's offices throughout the Atlanta-metropolitan area. Case-control sample methods were used to identify participants that fit the research criteria within each OBGYN clinic or doctor's office. Based on the demographic population and the OBGYN clinics utilized for this study a sample size of 50 or more participants was preferred for the pre-test, and the preferred sample size for the intervention and post-test was 15 or more participants. Subjects initially completed a brief self-administered survey, which served as the pre-test. The goal of the pre-test was to collect demographic information such as age, income and education; uncover the participant's perceptions of breastfeeding and to discuss their feeding plans once their child was born. A modified version of the Infant Feeding Intentions Scale, originally created by Laurie Nommsen Rivers PhD, RD, IBCLC, was developed by Alicia Simpson[28]. The Modified Infant Feeding Scale was used to assess participant's willingness or plans to breastfeed. The Infant Feeding Intentions Scale is a validated tool used to quantify breastfeeding intentions, however it does not leave room for qualitative data[29]. Therefore, the scale was modified to be more simplistic to answer

and a qualitative component has been added (Appendix A). The objective of the modified Infant Feed Intentions Scale was to uncover potential perceived barriers to breastfeeding with a list of common objections including: fear of pain/being uncomfortable, concerns about milk supply, lack of family/community support, concern about the physical appearance of breast after breast-feeding, and desire to return to work, as well as leaving space for the participant to write in her own response. At the end of each pre-test interview and survey the participant will have the option of participating in the intervention and post-test. Because this research study was focused on behavioral changes based on the intervention, women who expressed ambivalence about breastfeeding or who did not plan on breastfeeding at all were asked to participate in the intervention phase of the study. Pre-test results were coded so that no identifying information was connected with the pre-test or post-test.

The intervention, *Your Guide to Breastfeeding for African American Women*[2] by the U.S. Department of Health and Human Services, Office of Women's Health, is an evidenced-based educational booklet that focuses on commonly identified barriers to breastfeeding initiation and sustainability in the African American population (Appendix B). *Your Guide to Breastfeeding for African American Women* is an educational tool that is often used in hospital and outpatient settings by lactation consultants and educators as well as obstetricians and midwives to educate African American women about breastfeeding. It is a free educational booklet that is available in print and online and therefore accessible to the general population as well. However, the impact of using this booklet as an educational intervention has not been extensively studied.

Participants in the intervention and post-test phase of the study were given the intervention to read on their own. Immediately after the reading the intervention participants took the first half of the post-test (Post-Test A, Appendix C) to gauge their feelings about breastfeeding after reading through the educational booklet, to assess if they now feel comfortable breastfeeding despite previous identified barriers and to uncover what information in the packet led to the participants either changing their mind about breastfeeding or sticking with their previous choice to not breastfeed. Participants had the choice of whether to complete the post-test by telephonic one-on-one interview or by email. Email post-test were conducted using online survey tool, Survey Monkey. No identifying information about subjects was included on the post-test. The pre-test and post-test were coded to keep track of the data coming from an individual subject without identifying the participant.

The second half of the post-test (Post-Test B, Appendix D) was conducted after study participants delivered their baby to determine if the mother's decided to initiate breastfeeding. If participants did not decide to initiate breastfeeding, barriers that kept them from breastfeeding – social, cultural, and economic barriers were assessed. The second half of the post-test was conducted by email or phone calls, to allow new mothers the flexibility to stay at home with their newborns and answer the study questions on their own time in the same manner as the first half of the post-test.

Univariate analysis including frequency statistics were used to describe data collected from the initial survey and the pre- and post-test surveys. Bivariate, Chi-Square,

analysis was used to examine the relationship between the independent variables. Socioeconomic status, age and educational background are the independent variables while propensity to breastfeed before and after the intervention are dependent variables. All data analyses was conducted using SPSS (version 18.0, SPSS, Inc.; Chicago, IL).

CHAPTER IV

Results

Demographics

A total of 49 non-Hispanic African American women, 6-9 months pregnant were enrolled and participated in this study. Participants ranged in age from 18 to 42 years with a mean age of 28 years. The annual income and education level of the population are summarized in Tables 1 and 2. Approximately one third of participants were unemployed (30.6%, n=15) and had an annual household income of $22,500 to $69,300 (32.7%, n=16). Almost half of participants (42.9%, n=21) were college graduates.

Pre-Test Results

The feeding plans of all participants in the pre-test are summarized in Table 3. Of the 49 participants, 40.8% (n=20), planned to give breastfeeding a try while 32.7% (n=16) planned on exclusively formula feeding their infant and 26.5% (n=13) were unsure if they would exclusively formula feed. Originally, a total of 23 women identified as planning to give breastfeeding a try. Of these, three also reported that they planned on exclusively formula feeding. However, when probed further, these women stated that they did not plan to feed their child from the breast but were curious about what breastfeeding would feel like. For the remainder of the study the three women were placed in the exclusive formula feeding group. Another woman expressed uncertainty of her formula feeding plans and also expressed willingness to give breastfeeding a try. For

the analysis, she remained in the unsure group. The majority of women were unsure of how long they would breastfeed their infant. Only 16.3% (n=8) planned to exclusively breastfeed for 6 months.

The participants' perceived barriers to breastfeeding are summarized in Table 4. The primary barriers to breastfeeding noted were fear that breastfeeding would be painful, physical appearance of the breast after breastfeeding and how to maintain breastfeeding their infant once they returned to work. The participants were not as concerned about their potential milk supply. The majority of women who reported barriers to breastfeeding (n=49) felt their family and friends were not supportive of breastfeeding (46.9% and 57.1%, respectively). Most women were either unsure how their spouse/partner/father of their baby felt about breastfeeding or felt that their partner was not supportive of breastfeeding (63.2%).

Sixteen women identified as not intending to breastfed based on pre-test results. The greatest percentage of women who identified themselves as intending not to breastfeed were between the ages of 18-24 (43.8%, n=7), were unemployed (43.8%, n=7) and had a college education (50%, n=8). Thirteen women indicated that they were unsure if they would exclusively formula feed. Of these, the highest percentage were between the ages of 25-29 (38.5%, n=5), were either unemployed or had an income range of $22,500-$69,300 (30.8%, n=4 each) and had a high school education (38.5%, n=5). Twenty women identified as intending to exclusively breastfeed. Of these, the greatest

percentage were between the ages of 25-29 years (30%, n=6), had an income of $22,500-$69,300 (35%, n=7), and were college graduates (45%, n=9).

Post-Test A

Participants that identified as intending to exclusively formula feed or who were unsure of their infant feeding plans (n = 29) were given the educational intervention *Your Guide to Breastfeeding for African American Women*. Following the intervention, participants were interviewed for a post-test with similar questions to the pre-test to see if there was any change in their breastfeeding intentions or concerns. Table 5 summarizes the post-intervention infant feeding plans of participants. The majority of women (62.1%, n=18) reported that they would try to initiate breastfeeding. Of these, the majority (n=16) reported that they would breastfeed their child through at least 3 months of age. However, most did not anticipate breastfeeding to 6 months. Although the primary barriers to breastfeeding remained pain and difficulty returning to work, rates were lower than that from before the intervention. The women still felt, overwhelmingly, that breastfeeding would not be supported by their family, friends or the spouse/partner/father of the baby (Table 6).

Post-Test B

The second post-test was administered after the birth of the participant's baby. The posttest was given to all 49 study participants regardless of their original infant feeding plans. Participants were divided into 3 groups based on their pre-test response: intend to breastfed (n=20), do not intend to breastfeed (n=16) and unsure of feeding plan

(n=13). The majority of participants initiated breastfeeding regardless of their original infant feeding plans (Table 7). Ninety percent (n=18) of the women who reported that they would exclusively breastfeed initiated breastfeeding. Of these, 27.8% (n=5) anticipated breastfeeding for greater than 6 months. Thirteen women reported that they were unsure of their infant feeding plans. Post-intervention, 69.2% (n=9) initiated breastfeeding. Of these, 33.3% (n=3) anticipated breastfeeding for greater than 6 months. Of the 16 participants who planned to formula feed, 27.3% (n=2) anticipated breastfeeding for greater than 6 months.

Chi-square analysis was performed to examine the distribution of breastfeeding initiation rates by age, income and education (Tables 8 - 10). The analysis showed no relationship between initiation of breastfeeding and income or education. However, a significant association between initiation of breastfeeding and age in women who originally reported that they were unsure of their feeding plans was observed (P=0.005; Table 11). Women under 25, in this group, were less likely to initiate breastfeeding. No association between post-intervention rates of initiation of breastfeeding and income or education level was found within any group. Table 12 shows the anticipated duration of breastfeeding (in months) by age in women who identified as intending to breastfeed exclusively. In this group most women, regardless of age, did not anticipate exclusively breastfeeding for 6 months.

CHAPTER V

Discussions and Conclusions

During the pre-test of this study, the majority of participants were either unsure of their infant feeding plans or planned on exclusively formula feeding. For many of the women in this study this was the first time that they had given serious thought to breastfeeding at all. Even so, 47% (n=23) of the women showed a willingness to give breastfeeding a try in the pre-test although there was variability on how long they anticipated breastfeeding. Additionally, 4 of the 23 women who expressed a willingness to try breastfeeding also expressed the desire to only formula feed their infants. These 4 respondents stated that they were curious about what breastfeeding would feel like and therefore believed they might physically put the baby to breast once to see what it felt like but not for the purpose of nourishment. They intended all nourishment for the child to come from formula feeding.

Generations of formula feeding in the African American community has made formula the most efficacious and reliable choice among African American women[13]. Breastfeeding is often seen as unreliable, more difficult, problematic to do so in public because of societal norms, and was also tied to a mothers ability (or inability) to parent with some believing that breastfeeding makes children too dependent upon their mothers, especially male children.[13, 23] In contrast to the women in this study there is a pervasive theme in the literature that women are afraid they will not be able to produce enough milk

to feed their infant and a fear that their own health problems will be transferred into the breastmilk[13, 17, 23, 27, 30].

In this study, whether a woman intended to breastfeed, was unsure about breastfeeding or had no plans of breastfeeding her concerns about breastfeeding were similar. The women concerned about pain, physical appearance of the breast and returning to work. These are common concerns echoed in the studies by Murimi et al, Hurley et al, Mondal et al and Rojjanasrirat et al where not having enough milk, returning to work or school, and sore nipples were all principle reasons women did not initiate breastfeeding or terminated breastfeeding shortly after initiation (within 1-2 weeks)[16, 27, 30, 31].

In the intervention phase of the study women who identified as planning to only formula feed their infant or those who were unsure of their feeding plans were given an educational intervention that was tailored specifically to the African-American population. After the intervention 62.1% believed they would give breastfeeding a try and 17.2% believed they would still be breastfeeding their infants at 6 months of age. Of the 29 women who were unsure of their feeding plans or who had no intentions of breastfeeding 18 initiated breastfeeding post-intervention which is comparable to the initiation rates among women who identified as intending to exclusively breastfeed and did not participate in the intervention (n=18). In total, 73.4% of participants initiated breastfeeding. We believe that the educational intervention was able to reduce the impact

of initial barriers to breastfeeding and give the participants the opportunity to be more open to initiating breastfeeding despite perceived barriers.

In terms of sustainability of breastfeeding, the intervention did not appear to have a lasting impact. Only one of the participants who identified as unwilling to breastfeed in the pre-test anticipated breastfeeding her infant once he/she reached 6 months of age. In total, only 33.3% (n=4) of the women who were unsure of their feeding plans or were unwilling to breastfeed in the pre-test and were still breastfeeding when the study ended anticipated breastfeeding their infant at 6 months of age. In contrast, 71.4% (n=5) of the women who identified as intending to breastfeed and were still breastfeeding at the end of the study anticipated breastfeeding their infants at 6 months of age. Although, initially, the intervention helped to reduce the impact of barriers to breastfeeding of the women who were still breastfeeding at the conclusion of this study it appears that the intention to breastfeed, even without education, was more important in ensuring a long-term breastfeeding plan. This coincides with the belief that a mother's confidence about breastfeeding during pregnancy plays a significant role in her choice to initiate and sustain breastfeeding[6, 17, 20].

It appears that education about breastfeeding is a major barrier to breastfeeding in the African-American community. Once African-American women are given the facts about breastfeeding, understand the benefits to both mother and baby and are reassured that they can manage the perceived barriers they are more likely to initiate breastfeeding. However, an educational intervention alone will likely not be enough to help African

American woman sustain breastfeeding. Even when the educational gap is closed cultural influences still remain strong. Peer counselors that are available on an ongoing basis to provide education and support can improve not only the prevalence of initiation but the duration of breastfeeding, especially among low-income women[26] Mickens et al. found that support from other breastfeeding mothers was paramount to sustained breastfeeding among African American mothers. Women who attend breastfeeding support groups were twice as likely to show intention to breastfeed than those who did not[25]. Pugh et al utilized hospital visits by a breastfeeding support team, home visits, telephone support and 24-hour pager access to improve the outcomes of breastfeeding in low-income (predominantly African-American) women and found that more women in the intervention group reported breastfeeding at 6 weeks than those who received the current standard of care[9].

The impact that cultural norms and community support have on the feeding plans of an African American woman cannot be diminished. The compounding factors of culture in terms of ethnicity and socioeconomic status are very difficult to penetrate as they are multilayered and overlapping. Whether or not they intended to breastfeed from the start of the study, the majority of the women in this study did not feel supported by their friends, family and partners about breastfeeding. Once their children were born many women who initiated breastfeeding but stopped shortly afterwards said they stopped because of pressure of family and friends. One woman who initially intended to only formula feed but changed her mind post-intervention was pressured by family to feed her premature child formula because he was small and they feared her breast milk

would not be enough to sustain him. Another mother who delivered a full-term baby also said that her child was very small for this gestational age and her partner encouraged her to formula feed rather than breastfeed because of the birth weight of the child. When mothers complained of pain to their family members (particularly their own mothers) and friends they were encouraged to stop breastfeeding and switch to formula as well. Cessation of breastfeeding is most often spurred by pressure from families and friends[23]. A mother who is not confident about her breastfeeding plans during her pregnancy can be more easily swayed to switch to formula under mounting pressure from not only people close to her but often times from medical staff as well, re-emphasizing the need for ongoing peer to peer and community support for African American breastfeeding mothers[15, 17, 23].

Avery et al. (2009) discussed how a woman's commitment to breastfeeding prior to the birth of her child was the key to sustained breastfeeding even when faced with lack of support from family, friends and their partners as well a common barriers and challenges to breastfeeding. This commitment to breastfeeding prior to birth is rooted in education about breastfeeding. The mother must feel confident about the process of breastfeeding, her ability to breastfeed and how to make breastfeeding work despite potential obstacles[18].

Limitations to the study included inadequate assessment of annual household income based on the number of persons in the home. Participants were also not asked about the number of children they had or their relationship status. Additionally, the phrasing of pre-test questions allowed misinterpretation by the participants leading 4

participants to express an interest in trying breastfeeding when, in fact, they had no intention of nourishing their child through breastmilk but were curious about what breastfeeding felt like because of the many stories they heard about it. A larger sample size would have allowed better assessment of relationships between breastfeeding initiation and age, education and income of the participants. A limitation of the intervention is that it did not adequately cover what to do in cases where a baby is born prematurely or small for gestational age (SGA). The women in this study who had babies born that were premature or SGA did not feel empowered with enough information to continue breastfeeding their small babies and switched to formula within weeks of initiating breastfeeding. Women with SGA or premature babies did not express that they received any education in the hospital or from pediatrician's post-partum about how to properly nourish their child with breastmilk alone or fortified breastmilk.

There is an overwhelming lack of research on the effects educational interventions have on women across different socioeconomic groups. Research is primarily centered on WIC participants and low-income women. This study serves to show a cross section of African American women from various socioeconomic backgrounds. Overall, employment status, age, income, and education did not play a major role in a woman's decision to initiate breastfeeding or the sustainability of breastfeeding. Although some studies have shown that, regardless of race, poverty is a positive indicator of the preference to formula feed[19], it appears the initial intention to breastfeed plays the biggest role in the sustainability of breastfeeding but that education

about breastfeeding can raise the rates of initiation in those who initially did not intend to breastfeed.

Because initial intention to breastfeed appears to be one of the major factors in breastfeeding initiation and sustainability future research should focus on educational interventions starting in the first trimester of pregnancy and continuing throughout. Additionally, support from family, friends and the father of the baby appear to be important factors in a woman's decision to initiate or continue breastfeeding. Therefore, including a woman's support system in the intervention would be beneficial. Educational interventions do play a role in initiation rates of breastfeeding however, there are cultural concerns within the African-American community that have been highlighted throughout the literature[14] and in this study that point to a multi-factorial issue. Because the reasoning for breastfeeding or formula feeding is multi-factorial utilizing focus groups to get a qualitative perspective of reasons for breast or formula feeding would be useful.

TABLES

Table 1: Annual Household Income of Study Participants

Annual Income	**n (%)**
Unemployed	15 (30.6)
$10,501 to$22,500	7 (14.3)
$22,500 to $69,300	16 (32.7)
$69,300 to $139,850	10 (20.4)
$139,850 to $235, 550	1 (2)

Table 2: Education Level of Study Participants

Highest Level of Education Obtained	**n (%)**
Some high school	3 (6.1)
High school	14 (28.6)
College	21 (42.9)
Graduate school	5 (10.2)

Table 3: Pre-Intervention Infant Feeding Plans of Participants

	Yes n (%)	No n (%)	Unsure n (%)
Plan on exclusively formula feeding	16 (32.7)	20 (40.8)	13 (26.5)
Plan to give breastfeeding a try	23 (46.9)	12 (24.5)	14 (28.6)
Exclusive breastfeeding to one month of age	14 (28.6)	12 (24.5)	23 (46.9)
Exclusive breastfeeding to three months of age	14 (28.5)	12 (24.5)	23 (46.9)
Exclusive breastfeeding to six months of age	8 (16.3)	15 (30.6)	26 (53.1)

Table 4: Participant Perceived Barriers to Breastfeeding (n=49)

	Yes n (%)	No n (%)	Unsure n (%)
Pain	48 (98)	1 (2)	0
Milk Supply	18 (36.7)	19 (38.8)	12 (24.5)
Lack of Family Support	23 (46.9)	19 (38.8)	7(14.3)
Lack of Friends Support	28 (57.1)	21 (42.9)	0
Lack of Spouse/Partner/Father of Baby Support	18 (36.7)	20 (40.8)	11 (22.4)
Physical Appearance	40 (81.6)	9 (18.4)	0
Difficult returning to work	35 (71.4)	14 (28.6)	0

Table 5: Post-Intervention Infant Feeding Plans

	Yes n (%)	No n (%)	Unsure n (%)
Plan on exclusively formula feeding	11 (37.9)	18 (62.1)	0
Plan to give breastfeeding a try	18 (62.1)	11 (37.9)	0
Exclusive breastfeeding to one month of age	17 (58.6)	11 (37.9)	1 (3.4)
Exclusive breastfeeding to three months of age	16 (55.2)	11 (37.9)	2 (6.9)
Exclusive breastfeeding to six months of age	5 (17.2)	16 (55.2)	8 (27.6)

Table 6: Perceived Barriers to Breastfeeding Post Educational Intervention (Post-Test A; n=29)

	Yes n (%)	No n (%)	Unsure n (%)
Pain	17 (58.6)	12 (41.4)	0
Milk Supply	10 (34.5)	19 (65.5)	0
Lack of Family Support	20 (69)	9 (31)	0
Lack of Friends Support	16 (55.2)	13 (44.8)	0
Lack of Spouse/Partner/Father of Baby Support	15 (51.7)	14 (48.3)	0
Physical Appearance	13 (44.8)	16 (55.2)	0
Difficult returning to work	16 (55.2)	13 (44.8)	0

Table 7: Breastfeeding initiation rates across entire study population by Pre-test Reported Intention to Breastfeed

	Initiated n (%)	Did Not Initiate n (%)	Total n
Intend to Breastfeed	18 (90%)	2 (10%)	20
Do not intend to breastfeed	9 (56.3%)	7 (43.7%)	16
Unsure of Feeding Plans	9 (69.2%)	4 (30.8%)	13
Total	36	13	49

Table 8: Age distribution of mothers who did and did not initiate breastfeeding

Age	Initiated n (%)*	Did Not Initiate n (%)	Total N
18-24	8 (22.2%)	7 (53.8%)	15
25-29	14 (38.9%)	1 (7.7%)	15
30-34	9 (25%)	3 (23.1%)	12
35-39	2 (5.6%)	2 (15.4%)	4
40-45	3 (8.3%)	0	3
Total	36	13	49

*percentage based on age by initiation, within initiation group

Table 9: Income distribution of mothers who did and did not initiate breastfeeding

Income	Initiated n (%)*	Did Not Initiate n (%)	Total N
Unemployed	9 (25%)	6 (46.1%)	15
10,501 to 22,500	6 (16.7%)	1 (7.7%)	7
22,500 to 69,300	12 (33.3%)	4 (30.8%)	16
69,300 to 139,850	9 (25%)	1 (7.7%)	10
139,850 to 235, 000	0	1 (7.7%)	1
Total	36	13	49

*percentage based on income by initiation, within initiation group

Table 10: Level of education distribution of mothers who did and did not initiate breastfeeding

	Initiated n (%)*	Did Not Initiate n (%)	Total N
some high school	2 (5.6%)	1 (7.7%)	3
high school	10 (27.8%)	4 (30.8%)	14
some college	5 (13.8%)	1 (7.7%)	6
College	15 (41.7%)	6 (46.1%)	21
graduate school	4 (11.1%)	1 (7.7%)	5
Total	36	13	49

*percentage based on education by initiation, within initiation group

Table 11: Age distribution of breastfeeding initiation rates post-intervention in participants who were unsure of their feeding plans

	18-24 years n (%)	25-29 years n (%)	30-34 years n (%)	35-39 years n (%)
Initiated Breastfeeding	0	5 (55.6%)	4 (44.4%)	0
Did Not Initiate Breastfeeding	3 (75%)	0	0	1 (25%)

Table 12: Anticipated duration of breastfeeding by age in women who identified as intending to breastfeed exclusively

	18-24 years n (%)	25-29 years n (%)	30-34 years n (%)	35-39 years n (%)	40-45 years n (%)
Less than 3 months	1 (11.1%)[1]	4 (44.5%)	2 (22.2%)	1 (11.1%)	1 (11.1%)
3 to 6 months	1 (100%)	0	0	0	0
Greater than 6 months	1 (20%)	0	2 (40%)	1 (20%)	1 (20%)
Unsure	1 (33.3%)	2 (66.7%)	0	0	0
Total	4	6	4	2	2

The Chi-Square test carried out on the data with a 0.688 level of significance. ($\chi 2$ = 9.172, df = 12)

[1] Within anticipated duration group

Appendix A

Modified Infant Feeding Intentions Scale

Pre-Test

Demographic Information:

As a reminder, all information that is collected from this survey will be kept completely confidential

Age:

How many months pregnant are you?

What is your anticipated due date?

Income (Circle one):

Currently unemployed

$0 to $10,500

$10,501 to $22,500

$22,500 to 69,300

$69,300 to $139,850

$139,850 to $235,550

$235,550 to $380,500

$380,500 +

Highest level of education (Circle One):

Some High school

High school

Some College

College (undergraduate degree)

Graduate School (Masters, Doctorate, etc.)

Technical School or College

Breastfeeding Intentions:

I am planning to only formula feed my baby (I will not breastfeed at all)	Agree	Disagree	Unsure
I am planning to at least give breastfeeding a try	Agree	Disagree	Unsure
When my baby is 1 month old, I will be breastfeeding without using any formula or other milk	Agree	Disagree	Unsure
When my baby is 3 months old, I will be breastfeeding without using any formula or other milk	Agree	Disagree	Unsure
When my baby is 6 months old, I will be breastfeeding without using any formula or other milk	Agree	Disagree	Unsure

Concerns:

I am worried that breastfeeding will be painful or uncomfortable	Agree	Disagree	Unsure
I am concerned that I will not be able to supply enough milk to feed my baby	Agree	Disagree	Unsure
My family is not supportive of breastfeeding	Agree	Disagree	Unsure
My friends are not supportive of breastfeeding	Agree	Disagree	Unsure

My spouse/partner/father of the baby is not supportive of breastfeeding	Agree	Disagree	Unsure	
I am concerned about the physical appearance of my breast after breastfeeding	Agree	Disagree	Unsure	
I am worried that it will be difficult to breastfeed my baby once I return to work	Agree	Disagree	Unsure	N/A

Please write in any other concerns you have about breastfeeding, if any:

Separate document that will be filled out by participant, stored in a secure, password protected electronic format and the hard paper copy will be destroyed:

You may be chosen in the second phase of this research study in which you will be given a brief pamphlet to read about breast feeding and will then be asked to fill out a brief questionnaire about your views of breast feeding. You have the choice to complete this questionnaire by phone or email. After the birth of your child you will be contacted via phone or email, whichever you prefer, and will be asked a final set of brief questions about breast feeding. If you would like to be considered for participation please fill out the information below:

Name:

Phone Number:

Email Address:

Preferred method of contact (circle one):

Phone or Email

Appendix B

Your Guide to Breastfeeding for African American Women

Provided via an attachment

Appendix C

Post-Test Part A Interview Questions

Please read the following brochure entitled *Your Guide to Breastfeeding for African American Women* and answer the following questions:

Breastfeeding Intentions:

I am planning to only formula feed my baby (I will not breastfeed at all)	Agree	Disagree	Unsure
I am planning to at least give breastfeeding a try	Agree	Disagree	Unsure
When my baby is 1 month old, I will be breastfeeding without using any formula or other milk	Agree	Disagree	Unsure
When my baby is 3 months old, I will be breastfeeding without using any formula or other milk	Agree	Disagree	Unsure
When my baby is 6 months old, I will be breastfeeding without using any formula or other milk	Agree	Disagree	Unsure

Concerns:

I am worried that breastfeeding will be painful or uncomfortable	Agree	Disagree	Unsure

I am concerned that I will not be able to supply enough milk to feed my baby	Agree	Disagree	Unsure	
My family is not supportive of breastfeeding	Agree	Disagree	Unsure	
My friends are not supportive of breastfeeding	Agree	Disagree	Unsure	
My spouse/partner/father of the baby is not supportive of breastfeeding	Agree	Disagree	Unsure	
I am concerned about the physical appearance of my breast after breastfeeding	Agree	Disagree	Unsure	
I am worried that it will be difficult to breastfeed my baby once I return to work	Agree	Disagree	Unsure	N/A

Please write in any other concerns you have about breastfeeding, if any:

Brochure Content:

Which of the following sections of *Your Guide to Breastfeeding for African American Women* did you find helpful, if any (check all that apply):

Why Breast Feeding Is Important

Finding Support and Information

How Breast Milk Is Made

Before You Give Birth

Learning to Breastfeed

Common Challenges

Common Questions

Breastfeeding a Baby with Health Problems

Breastfeeding and Special Situations

Breastfeeding in Public

Pumpkin and Milk Storage

Going Back to Work

Nutrition and Fitness

Handling Stress

Tear-Out Tools

Appendix D

Post-Test Part B Interview Questions (administered after the birth of participants baby)

How old is your baby (in weeks)?

Did you initiate breastfeeding?	Yes	No
Are you currently exclusively breast-feeding? (no formula)	Yes	No
Are you currently using a combination of breast milk and formula to feed your baby?	Yes	No

If you are currently breastfeeding how long do you anticipate breastfeeding your baby?

If you are not currently breastfeeding what are the reasons you chose not to breastfeed (check all that apply)

I am worried that breastfeeding will be painful or uncomfortable

I am concerned that I will not be able to supply enough milk to feed my baby

My family is not supportive of breastfeeding

My friends are not supportive of breastfeeding

My spouse/partner/father of the baby is not supportive of breastfeeding

I am concerned about the physical appearance of my breast after breastfeeding

I am worried that it will be difficult to breastfeed my baby once I return to work

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