2019

The Effects of Breastfeeding Support on Women Enrolled for WIC Benefits

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This is to certify that the doctoral dissertation by

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Walden University 2019

Abstract

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Judith M. Khanuja

MPH, Walden University, 2010

BS, Mansfield University of Pennsylvania, 1989

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

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August 2019

Abstract

Breastfeeding has been shown to protect both the mother and infant, and health care professionals consider it to be the best choice for feeding an infant. The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides food, referrals to other social service programs, and nutrition and breastfeeding education for enrolled families. However, community support for the breastfeeding woman once she leaves the hospital is limited, especially in Philadelphia, PA. The purpose of this mixed-methods study was to explore the impact of prenatal breastfeeding education and understand the role that members of the community play in the infant feeding decision-making process. A purposive, convenience sample of 36 postpartum breastfeeding women enrolled for WIC benefits completed a survey and an in-depth interview about infant feeding choices and their support system at their return WIC appointment. The quantitative survey data were analyzed using Spearman's rank correlation coefficient and multiple regressions while the qualitative data were analyzed using Moustakas' modification of two methods, referred to as MVKMAP. The analysis of data showed that the postpartum breastfeeding education given at the WIC office had the most influence on participants' decision to breastfeed followed by prenatal education. Some participants reported receiving overwhelming breastfeeding support from the WIC peer counselor, which indicates that members of the WIC community play a role in the infant feeding decision making process. The study findings help to contribute to social change by identifying the need for breastfeeding support by medical providers, hospitals, and WIC offices at the prenatal period not only at the postpartum appointment.

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Dedication

This dissertation is dedicated to my mother, Mary Jane Jalowiec, who passed away June 2018 after a battle with cancer. She always encouraged me to continue my education and not to stop until I completed my doctorate. Her belief in me and my abilities has been the driving force for me to complete my study. Her sickness was always secondary to the health and successes of her children. Throughout the several years of her suffering, she hid a lot of her pain so that my sister and I would not have the "extra burden" taking care of her. The strength she has shown throughout her illness has been passed on to me as I put all my challenges aside and focused on completing my research. I am forever grateful to her for her encouragement and support and I hope to pass on her caring spirit to my children, as well.

Acknowledgements

I am extremely lucky and grateful for the supportive people in my life who have made this journey with me. My accomplishments would not be possible with the encouragement for family, friends, and co-workers who have given up their time to help me through this process.

First, I would like to thank my family for being there for me when I needed that extra push, extra time, or just words of encouragement when I needed it. To my husband Rindi, my son Alex, and my daughter Juliana, I would like to thank you for your patience and understanding in helping complete my research. Without your love and support, I would not be able to accomplish this task. To my sister, Sandy, I would like to thank you

for giving me a place to “crash” when I was feeling overwhelmed. Without your support I would have not finished my work.

Secondly, I would like to thank my supervisor and mentor, Dr. Linda Kilby for the many hours sitting with me and talking through multiple research questions, surveys, and procedures in order to complete my study. Without your help and encouragement I would have lost my focus long ago. I would also like to thank my co-worker, Nichole Vaughn, who had the patience to listen to me as I tried to explain what I needed her to do. I am grateful for your computer knowledge in helping me format my documents. I would also like to thank my immediate staff, Lauren, Sam, Linda, and Marisol for being understanding and cooperative when I needed your help. I would also like to thank the WIC Breastfeeding Peer counselors, and the WIC Breastfeeding Coordinator for supplying me with their insight and expertise.

Finally, I would like to thank my chairman, Dr. Joe Robare for staying with me in this long process. His encouragement and positivity helped me to make the needed adjustments and continue in the program when I was feeling down. I would also like to thank my committee member, Dr. Gwendolyn Francavillo for reviewing my work multiple times. Without your guidance, this accomplishment would not be possible.

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Chapter 1: Introduction to the Study

Introduction

Since the early 1990s research has shown that breastfeeding is the best choice for feeding an infant; breastfeeding has protective benefits for the infant, helps the mother heal faster, and leads to overall healthier children (American Academy of Pediatrics [AAP], 1997, 2004; Riordan & Auerbach, 1999; World Health Organization [WHO], 1981; Zell, 2011). The policy statement by the AAP clearly explains not only the benefits for the child and mother but also shows how the community can benefit if breastfeeding becomes the norm rather than the exception. A decrease of approximately 3.6 billion dollars in health care costs as well as reductions in employee absenteeism resulting in loss of family income due to sick children and in environmental trash resulting from the use of formula are some of the community issues that can potentially be resolved if women choose to breastfeed their infants rather than use formula and plastic bottles (AAP, 2005).

Women who deliver and choose to breastfeed require a support system, family, friends, or health care professionals, in order to be successful (Chuan-Ming et al., 2014). However, breastfeeding support in the City of Philadelphia is limited, especially after women and their infants leave the hospital. Although researchers have addressed the need for hospital policy changes to support breastfeeding, there is limited research documenting the importance of collaboration with community organizations, according to my review of the literature. As researchers have noted, such collaborations are important to support breastfeeding mothers once they are discharged from the hospital (Chuan-

Ming et al., 2014; DiGirolamo, Grummer-Strawn, & Fein, 2001; Edwards et al., 2013). Community programs such as the WIC Program can offer that needed community connection.

In Chapter 1, I will present the background of the problem, the problem statement, the purpose of the study, and the research questions and hypotheses. The chapter also includes the nature of the study; the theoretical framework; operational definitions; and the assumptions, scope and delimitations, limitations, and significance of the study, including its implications for social change. The chapter concludes with a summary of key points.

Background

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides supplemental food, referrals to other social service programs, and nutrition and breastfeeding education for families who are enrolled for the program based on three eligibility requirements: (a) proof of household income that is at or under 185% of the federal poverty level; (b) proof of residency in the state where they are applying; and (c) status as either an infant, child, pregnant, or breastfeeding woman who is at medical or nutritional risk (Pennsylvania Department of Health, Bureau of Women, Infants, and Children, 2014).

Although breastfeeding has been documented as the best feeding method for infants (AAP, 1997, 2004; Riordan & Auerbach, 1999; WHO, 1981; Zell, 2011), the statewide initiation rate of 52% as of federal fiscal year (FFY) 2012 in Pennsylvania was well below the national health objective (Healthy People 2020) of 81.9% (Pennsylvania

Department of Health, Bureau of Women, Infants, and Children, 2013, p. 3). In the city of Philadelphia, most of the parents of infants who are enrolled for WIC benefits choose to receive infant formula, despite listening to the education provided by staff throughout the prenatal period about the benefits of breastfeeding (Langellier et al., 2014).

According to the breastfeeding data collected from FFY 2012 through FFY 2018, the Pennsylvania WIC breastfeeding incidence has increased, and breastfeeding duration has fluctuated. Historically, the general public has a perception that infants enrolled in the WIC program are given checks for formula (Gates, 2013). According to the WIC program director, staff working in the local WIC program has been trying to change this perception by providing education about the benefits of breastfeeding through the use of WIC breastfeeding peer counselors and certified lactation counselor (CLC) training provided for WIC nutrition professional staff.

Problem Statement

In spite of the support provided by the WIC staff, breastfeeding duration rates within the Philadelphia WIC program have not increased. Lack of support for postpartum breastfeeding women enrolled in WIC once they leave the hospital after delivery is reflected in their short-term breastfeeding duration rates (Cross-Barnet et al., 2012). In the Commonwealth of Pennsylvania, the WIC program is managed by 24 local agencies responsible for providing benefits to the eligible participants in their county. The nonprofit agency that manages the WIC program in Philadelphia provided benefits to over 56,000 women, infants, and children in 11 offices in the initial phase of this study. However, during this study the agency closed two WIC offices in August and October

2018 and now manages nine full-time WIC offices. The staff has made significant efforts over the last 20 plus years in creating a supportive community breastfeeding network including working with the delivery hospitals to help improve incidence and duration rates (Pennsylvania Department of Health, Bureau of Women, Infants, and Children, Breastfeeding Promotion and Support (2013).

The results of this study may help WIC professionals understand the issues postpartum breastfeeding women face when they choose to breastfeed their infant and the need for a support system once they leave the hospital. According to research, social cognitive theory (SCT) helps to explain why people acquire and maintain certain health behaviors (Glanz et al., 2002). The health behaviors of people can be categorized per the theory's four constructs. In this study I addressed the following four constructs of SCT that seem to be lacking after women have delivered her infant:

- Environment, which is one of the most significant factors that affects a person's behavior (Glanz et al., 2002). In this study, the environment refers to the breastfeeding woman's close circle of support and those who have the most impact on her infant feeding decision.
- Situation, which provides the framework for understanding the health behavior (Glanz et al., 2002). In this study, the breastfeeding woman and her support system needed to be supportive of her decision regarding how she feeds her infant and to promote her choice.
- Self-efficacy, which refers to how confident the person is performing the behavior (Glanz et al., 2002). In this study, self-efficacy refers to the

knowledge about breastfeeding and confidence the breastfeeding woman has in her ability to breastfeed her infant.

- Reinforcement, which refers to the response to the person's behavior that increases or decreases the likelihood of reoccurrence (Bandura, 2001). In this study, reinforcement refers to the types of resources the breastfeeding woman has once she leaves the hospital and where she can go for help if she has problems breastfeeding her infant.

Based on these four constructs, if the environment and the situation are not supportive of the woman's decision to breastfeed, she will not be successful (see, also, Burdette, 2013; Kornides & Kitsantas, 2013; Tenefelde et al., 2012).

The number of consistent breastfeeding education contacts received during the prenatal period is crucial to breastfeeding duration of WIC mothers (Phillips, 2011). Research has shown that most women make feeding decisions during pregnancy and that health care professionals need to include the family, especially the woman's partner and family support, in breastfeeding education during prenatal classes to address myths and concerns, which can help to develop a woman's self-efficacy and confidence in breastfeeding her infant (Sriraman & Kellams, 2016). These messages need to be consistent early in the prenatal period and repeated at each appointment to show the importance of breastfeeding to the target population.

This research study may help to identify the missing link in the decision-making process that new mothers face when making the choice between breastfeeding and formula feeding. Using the four SCT constructs of environment, situation, self-efficacy,

and reinforcement (Glanz et al., 2002) may yield a better understanding of how to address the barriers that prevent WIC enrolled women from breastfeeding.

Purpose of the Study

The purpose of this transcendental phenomenological study was to document the lived experience and breastfeeding support experienced by women enrolled in the WIC program in Philadelphia, Pennsylvania. More precisely, I sought to

- explore the impact of prenatal breastfeeding education,
- understand the effectiveness of a woman's support system in helping her to breastfeed once she leaves the hospital,
- understand why WIC breastfeeding duration rates continue to be low given the resources in the community, and
- understand the role that members of the community play in the infant feeding decision making process.

To address these goals, I used an embedded, concurrent explanatory mixed-methods research design that was primarily qualitative. A purposive, convenience sample of postpartum breastfeeding women enrolled for WIC benefits completed a survey about infant feeding choices and their support system at their return WIC appointment. In addition to the survey, participants completed an in-depth interview with me. The interview consisted of a series of open-ended questions that were designed to address each of the independent variables used to develop the qualitative research questions.

Research Questions and Hypotheses

The quantitative research questions, null and alternative hypotheses, rationales, and analytical procedures used in this research study are outlined in Table 1. The qualitative research questions, rationales, and analytical procedures are outlined in Table 2.

Table 1

Quantitative Research Questions, Hypotheses, Rationales, and Analyses

Research question	Alternative hypothesis	Null hypothesis	Rationale	Analysis
How did the prenatal education given by your medical provider influence your decision to breastfeed?	The prenatal education given by the medical provider had a statistically significant influence on the decision to breastfeed.	The prenatal education given by the medical provider had no influence on the decision to breastfeed.	The pregnant woman relies on the professional advice of her health care professional team. The American Academy of Family Physicians recommends that physicians offer breastfeeding support and it can be given for other types of care such as prenatal (Cross-Barnet et al., 2012 Sexton, 2015;).	Spearman's rank correlation coefficient
How did the prenatal education given at the WIC office influence your decision to breastfeed?	The prenatal education given at the WIC office had a statistically significant influence on the decision to breastfeed.	The prenatal education given at the WIC office had no influence on the decision to breastfeed.	A study by Metallinos-Katsaras et al., (2015) at WIC offices in Massachusetts showed that the earlier a woman was enrolled on the WIC program, the more likely she was to initiate breastfeeding and the longer she breastfeed. This study shows how repeated, consistent WIC breastfeeding education and support can impact a woman's feeding decision.	Spearman's rank correlation coefficient
How did the experience of skin-to-skin breastfeeding at the hospital at delivery influence your decision to breastfeed?	The experience of skin-to-skin at the hospital at delivery had a statistically significant influence on the decision to breastfeed.	The experience of skin-to-skin at the hospital at delivery had no influence on the decision to breastfeed.	A study completed by Nickel et al., (2013) found that many hospital staff were not in compliance with many of the *"Ten Steps."*	Spearman's rank correlation coefficient

(*table continues*)

Research question	Alternative hypothesis	Null hypothesis	Rationale	Analysis
How did the postpartum education given at discharge influence your decision to breastfeed?	The postpartum education given at discharge had a statistically significant influence on the decision to breastfeed.	The postpartum education given at discharge had no influence on the decision to breastfeed.	A study completed by Taylor et al., (2012), showed that all *Ten Steps* were not fully understood by those who were trying to implement them. When asked about the support provided at discharge, hospital staff were not able to identify any support other than the on-staff IBCLC (Taylor et al., 2012).	Spearman's rank correlation coefficient
How did the postpartum education given at the WIC office influence your decision to breastfeed?	The postpartum education given at the WIC office had a statistically significant influence on the decision to breastfeed.	The postpartum education given at the WIC office had no influence on the decision to breastfeed.	A WIC program study completed by Tenfelde et al., (2012), of 309 WIC participants showed that women stop breastfeeding between birth and the first month, stating "perception of insufficient milk" as the main reason for discontinuing breastfeeding. The results also showed that the women with breastfeeding support were (40%) less likely to stop breastfeeding than were women without support (Tenfelde et al., 2012).	Spearman's rank correlation coefficient

(*table continues*)

Research question	Alternative hypothesis	Null hypothesis	Rationale	Analysis
How did the postpartum education given by your medical provider influence your decision to breastfeed?	The postpartum education given by the medical provider had a statistically significant influence on the decision to breastfeed.	The postpartum education given by the medical provider had no influence on the decision to breastfeed.	The health care professional needs to be prepared to promote breastfeeding to woman with confidence. In a study by Ingram et al., (2011), the government mandated a policy to train 100 medical providers to see if the training made a difference in breastfeeding rates. In this study, surveys were completed to assess the staff knowledge and attitudes before and one month after training, and six months later. Results showed improved breastfeeding knowledge, positive attitude, and increases in rates since the training (Ingram et al., 2011).	Spearman's Rank correlation coefficient
Which of the variables is the best predictor of increased breastfeeding duration?	There was a variable that had a statistically significant influence on the decision to breastfeed.	There were no variables that had an influence on breastfeeding duration.		Multiple regression analysis

Note. Adapted from "Study Guide for Development of Problem Statement and Study Questions," by C. Schumaker. Used with permission.

Table 2

Qualitative Research Questions, Rationales, and Analyses

Research Question How do women enrolled for WIC benefits describe the experience of choosing a feeding method for their infants?		
Sub-question	Rationale	Analysis
a. What is the impact of the prenatal breastfeeding education that the woman received from her medical provider and her infant feeding decision?	The American Academy of Family Physicians recommends that physicians offer breastfeeding encouragement, education, and support even if the office does not provide maternity care and it can be given at visits for other types of care such as preconception care, prenatal care, or care for labor support (Cross-Barnet et al., 2012; Sexton, 2015).	Phenomenological analysis
b. What is the impact of the prenatal breastfeeding education that the woman received at the WIC office and her infant feeding decision?	A study completed by Metallinos-Katsaras et al., (2015) at WIC offices across the state of Massachusetts showed that the earlier a woman was enrolled on the WIC program, the more likely she was to initiate breastfeeding and the longer she breastfeed. The WIC breastfeeding data at birth, three, six, and twelve months showed that women who enrolled on the program during their first trimester had a 10-32% greater likelihood of initiating breastfeeding and women who enrolled in their second trimester had a 14-23% greater likelihood of initiating breastfeeding compared to those who enrolled on the WIC program during their third trimester (Metallinos-Katsaras et al., 2015). This study shows how repeated, consistent WIC breastfeeding education and support can impact a woman's feeding decision.	Phenomenological analysis
c. What is the impact of the breastfeeding education that the woman received at the hospital at delivery and her infant feeding decision?	A study completed by Nickel et al., (2013) found that many hospital staff were not in compliance with many of the *"Ten Steps."* In this study, data taken from the Infant Feeding Practices Study II that tracked a 1,304 sample of women showed that (33%) did not practice step 4, "Help mothers initiate breastfeeding within the first hour after birth," which contributes to low breastfeeding rates (Nickel et al., 2013).	Phenomenological analysis

(*table continues*)

Sub-question	Rationale	Analysis
d. What is the impact of the postpartum breastfeeding education that the woman received at discharge and her infant feeding decision?	A study completed by Taylor et al., (2012) showed that all *Ten Steps* were not fully understood by those who were trying to implement them. In this study, a Global Breastfeeding-Friendly Healthcare Project was developed in the State of North Carolina to support the *Ten Steps* in a set of hospitals that serve low-income populations. Information about implementing all ten steps was collected and found that confusion and incorrect data collected was due to the misunderstanding of step number ten, "Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic." When asked about the support provided at discharge, hospital staff were not able to identify any support other than the on-staff IBCLC (Taylor et al., 2012).	Phenomenological analysis
e. What is the impact of the postpartum breastfeeding education that the woman received from her medical provider and her infant feeding decision?	The health care professional needs to be prepared to answer questions and promote the benefits of breastfeeding to woman with confidence. In a study completed by Ingram et al., (2011) the government mandated a policy to train a total of 100 medical providers and evaluated the results to see if the training made a different in breastfeeding rates. In this study, surveys were completed to assess the staff knowledge and attitudes before and one month after training, and six months later. A self-efficacy tool assessed staff confidence in helping and supporting mothers to breastfeed (Ingram et al., 2011). Results from this study showed improved breastfeeding knowledge, positive attitude, and increases in rates at eight weeks since the training (Ingram et al., 2011). Mandatory training of all health care professionals can be a direction towards increasing breastfeeding duration in the community.	Phenomenological analysis

(*table continues*)

Sub-question	Rationale	Analysis
f. What is the impact of the postpartum breastfeeding education that the woman received at the WIC office and her infant feeding decision?	A WIC program study completed by Tenfelde et al., (2012), of 309 WIC participants was studied over a four-year period at a Federally Qualified Health Center (FQHC) in Chicago. All women were enrolled during their prenatal health visit and tracked throughout their postpartum period. The infants were tracked from birth through their first twelve months. The results showed that the critical period when women stop breastfeeding was between birth and the first month, when (20%) of the sample stopped breastfeeding stating that "perception of insufficient milk" as the main reason for discontinuing breastfeeding. Most of the women in this study (69%) stopped breastfeeding before six months, stating "returning to work or school," "other maternal problems," or "infant weaning self" as reasons for discontinuing breastfeeding (Tenfelde et al., 2012). The results also showed that the women with breastfeeding support were (40%) less likely to stop breastfeeding than were women without support (Tenfelde et al., 2012).	Phenomenological analysis
g. What is the impact of the postpartum breastfeeding support that the woman received from family and friends and her infant feeding decision?	A study completed by Kornides and Kitsantas (2013) on breastfeeding promotion, support, and knowledge of the benefits of breastfeeding was completed to learn how the exposure to breastfeeding education during the prenatal period would affect the breastfeeding rates once the women delivered the infant. Results from this study showed that (98.0%) of women who initiated breastfeeding had families who supported breastfeeding, as did (82.5%) of those who were breastfeeding at two months, and (55.8%) of women who were exclusively breastfeeding at two months and women with friends who breastfed were more likely to initiate and continue to breastfeed (Kornides & Kitsantas, 2013). The results of this study show how significant the support of family and friends are to the success of the breastfeeding experience.	Phenomenological analysis

(*table continues*)

Sub-question	Rationale	Analysis
h. What is the impact of the postpartum breastfeeding support that the woman received from lactation resources and her infant feeding decision?	An example of support was found in 2012 in the Indiana State Department of Health (ISDH). The CDC awarded the ISDH Division of Nutrition and Physical Activity (DNPA) $530,420 to develop the Community Breastfeeding Support Initiative (CBSI) for a nine-month period. The plan was to identify 13 community-based organizations (CBOs) that will receive funding and technical support for breastfeeding mothers. The goal was to work with the mothers to improve overall breastfeeding rates. The CBO programs included services in small community hospitals, clinics, and health centers for nine months for a total of 1,345 women (Friesen et al., 2015).	Phenomenological analysis
i. What is the impact of the woman's breastfeeding self-efficacy and her infant feeding decision?	A study by Rodrigues and her colleagues (2015) showed that women who have low levels of confidence in their ability to breastfeed will discontinue in the first week after delivery. The researchers used the Breastfeeding Self-Efficacy Scale to measure the 322 mothers' confidence levels in regards to breastfeeding. The results showed that the mothers stated that they had a high and average level of breastfeeding self-efficacy and they felt confident in their ability to breastfeed. The women age 20 years old or older were more likely to have higher breastfeeding self-efficacy than younger mothers and mothers with more than one child had greater self-efficacy than those with no other children (Rodrigues et al., 2015).	Phenomenological analysis

Note. Adapted from "Study Guide for Development of Problem Statement and Study Questions," by C. Schumaker. Used with permission.

Theoretical Framework

The theory of social learning, first developed by Miller and Dollard in 1941, then broadened by Bandura in 1963 and changed to the social cognitive theory (SCT). The SCT was the theoretical framework selected for this research project because it addresses the dynamics of individual behavior and gives direction to the design of the intervention or strategies (Glanz, Rimer & Lewis, 2002). The SCT is appropriate for use in health communication because it explains cognitive and emotional aspects of behavior for understanding behavioral change. The SCT states that human behavior is explained in terms of a triadic, dynamic, and reciprocal model in which behavior, personal factors (including cognitions), and environmental influences all interact (Glanz, Rimer & Lewis, 2002). Health educators and researchers have used SCT to develop programs to facilitate behavior change. Among the factors that influence behavior are a person's ability to: (a) symbolize their behavior, (b) anticipate the outcome of the behavior, (c) learn by observing others, (d) have confidence (self-efficacy) in performing the behavior, and (e) self-reflect on or analyze the experience (Bandura, 1997).

The concept of SCT also provides ways for explaining new behavioral research in health education (Pajares, 2002). Over time the individual's beliefs turn into actions and behavioral consequences. The SCT is especially important to enhancing the knowledge of prenatal women in low-income populations who have lower rates of breastfeeding initiation. Motivation for the behavior, referred to as triadic reciprocality (Glanz et al., 2002), is shown in Figure 1. The figure shows how these factors are continually influencing an individual's actions and their behavior (Glanz et al., 2002).

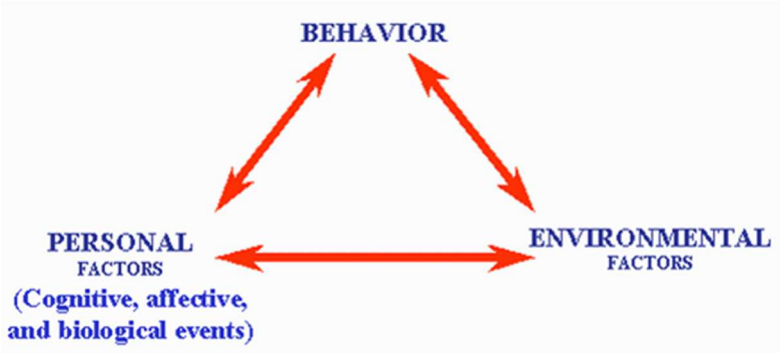

Figure 1. Behavioral influences according to social cognitive theory. From "Overview of social cognitive theory and self-efficacy," by F. Pajares and J. Ormrod, 2002 (http://www.emory.edu/EDUCATION/mfp/eff.html).

Use of the SCT shows that behavior does not result from the three areas of behavior, personal factors and environmental factors equally, but rather from the factor giving the strongest influence at a given time. The use of the SCT can be very influential on the woman's support system. For example, if a woman is experiencing a strong environmental support of breastfeeding from her family, spouse, and health care provider, she would most likely continue to breastfeed. According to Figure 1, the behavioral result would be positive and the woman would react in a positive manner. On the other hand, if the greatest influence is coming from a negative personal stress (such as a domestic issue), the behavior result could be negative and could be reflected in a decrease in breastfeeding and increase in formula supplementation.

Bandura also believed that through the SCT the impact of a behavior is first influenced by the individual's self-efficacy- the belief in their own ability to execute a course of action and to learn through modeling (Glanz et al., 2002). For this reason, it is suggested that breastfeeding education begin as early as prenatally (Cross-Barnet et al., 2012). According to the policy in the Pennsylvania WIC Program, pregnant women are

encouraged to enroll for benefits as early in the pregnancy as possible so that they can participate in prenatal classes throughout the prenatal period and receive WIC benefits in the form of supplemental food vouchers, referrals to other community services, and education not only about pregnancy, but also about infant care and breastfeeding education and support (Pennsylvania Department of Health, Bureau of WIC, 2010.) Research has shown that mothers who stop breastfeeding early often demonstrate a lack in realistic expectations which suggest a gap in knowledge and support that could have been provided by both her health care professional and the WIC office staff during her multiple prenatal visits (Sriraman & Kellams, 2016).

Nature of the Study

This embedded, concurrent explanatory mixed-methods research study was used to help the researcher understand and document why the breastfeeding duration rates continue to be low in the Philadelphia WIC program. The study design, which was primarily qualitative, focused on the following objectives: (a) factors that impacted the postpartum breastfeeding woman and (b) what influenced her decision to breastfeed her infant. In this study design, the quantitative data collection was embedded within the qualitative procedure and collected at the same time as the qualitative data. The two types of data attempted to answer different research questions; the quantitative data collected helped to develop and validate the qualitative data. The interview questions were designed to explore the impact of: (a) the prenatal breastfeeding education the woman received from her medical provider; (b) the prenatal breastfeeding education the woman received at the WIC office; (c) breastfeeding education the woman received at the

hospital at delivery; (d) the postpartum breastfeeding education the woman received at discharge; (e) the postpartum breastfeeding education the woman received from her medical provider; (f) the postpartum breastfeeding education the woman received at the WIC office; (g) the postpartum breastfeeding support the woman received from family and friends; (h) the postpartum breastfeeding support the woman received from lactation resources; and (i) the woman's breastfeeding self-efficacy. The quantitative research questions, the null hypothesis, the alternative hypothesis, and analyses used for this research study are outlined in Table 1. The qualitative research questions, rationale, and analysis used for this research study are outlined in Table 2.

Definitions

Baby Friendly Health Initiative (BFHI): An initiative that was launched by WHO and UNICEF in 1991, following the Innocenti Declaration of 1990. The initiative is a global effort to implement practices that protect, promote, and support breastfeeding (Baby-Friendly USA, Inc., 1991).

Breastfeeding duration: The length of time the mother breastfeeds her infant (Pennsylvania Breastfeeding Promotion and Support Training Manual, 2013, p. 2).

Breastfeeding support: people who can offer the encouragement and help you a breastfeeding woman needs to be successful (Pennsylvania Breastfeeding Promotion and Support Training Manual. 2013, p.3).

Breastfeeding woman: A woman who uses mother's milk to feed her infant at least once per day up to 1 year postpartum (United States Department of Agriculture, Food and Nutrition Services, 2016, p. 33).

Certified lactation counselor (CLC): A trained staff person who has received training and competency verification in breastfeeding and human lactation support including assessing the latching and feeding process, providing corrective interventions, counseling mothers, understanding and applying knowledge of milk production including in special circumstances, and handling other commonly encountered situations (Turner-Maffei, The Healthy Children Project, 2017). The CLC has a strong foundation with which to help moms and babies and is required to pass a test and maintain continuing education credit in evidence-based lactation education (Turner-Maffei, The Healthy Children Project, 2017).

Exclusively breastfeeding/Full breastfeeding: The act of providing only breast milk; no supplemental formula provided from the WIC Program is used to feed the infant (Breastfeeding Promotion and Support Training Manual, 2013, p. 20).

Endorser: The parent or guardian of an infant or child participant who is authorized to use and sign the WIC checks of the infant or child for purchase of allowable foods (United States Department of Agriculture, Food and Nutrition Services, 1994).

Keystone Ten Initiative: A program developed by the Pennsylvania Department of Health to assist birthing facilities to improve facility breastfeeding care and rates and to improve the health of mothers and babies (Pennsylvania Department of Health, 2010).

Postpartum: The period following birth (United States Department of Agriculture, Food and Nutrition Services, 1994).

Prenatal: A period that occurs, exists, or is performed before birth (United States Department of Agriculture, Food and Nutrition Services, 1994).

Special Supplemental Nutrition Program for Women, Infants, and Children (WIC): A program that provides Federal grants to States for supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women, and to infants and children up to age 5 who are found to be at nutritional risk (United States Department of Agriculture, Food and Nutrition Services, 1994).

WIC breastfeeding peer counselor: A para-professional who is recruited and hired from the WIC population and trained to provide basic breastfeeding education to mothers in the WIC office (United States Department of Agriculture, Food and Nutrition Services, 2016, p. 22).

WIC nutrition professional: A professional who holds a four-year degree in the field of nutrition or dietetics who has been authorized by the Pennsylvania Bureau of WIC to certify applicants as eligible for the WIC Program (Pennsylvania Department of Health, Bureau of WIC, 2010).

WIC participant: A pregnant woman, breastfeeding woman, postpartum woman, infant, or child enrolled in the WIC Program (Pennsylvania Department of Health, Bureau of WIC, 2010).

WIC program benefits: The list of items received by a participant of the WIC program in Pennsylvania. These benefits include supplemental foods, nutrition education, and referral to health services (Pennsylvania Department of Health, Bureau of WIC, 2010).

Assumptions

There were several assumptions for this study:

- the prenatal women enrolled in the WIC program received accurate, evidence-based information about breastfeeding each time they came into the WIC office.
- the prenatal women continued to keep their WIC appointments.
- the prenatal women received all of the "Ten Steps to Successful Breastfeeding" when they went to the hospital in labor.
- the postpartum breastfeeding women had a support system that encouraged and helped them continue to breastfeed their infants when they returned home from the hospital.
- the postpartum breastfeeding women received step number ten, "a referral to a breastfeeding support group at discharge from the hospital or clinic."
- all BFHI information and the changes in hospital policy helped women to breastfeed longer.
- once a postpartum breastfeeding woman is certified, she maintained WIC certification.

Scope and Delimitations

This research project was limited to the postpartum breastfeeding women enrolled in the WIC program within the City of Philadelphia, PA. The results may not be representative of the entire WIC population in the Commonwealth of Pennsylvania currently. The results represent a snapshot of a caseload in time and may not be generalized to the entire WIC population.

Limitations

The following were limitations of this research study:

- data collected was dependent on self-reported information as given by the postpartum breastfeeding women in the study.
- results of this study were representative of the population studied during the identified time period and are not generalizable to the entire community.
- the sample population, although similar to other populations in the community, may not reflect the same cultural , ethnic, and social demographics of the entire county.

Significance

The significance of this research study was to help the researcher to understand the relationship between the breastfeeding woman's decision to breastfeed and how the identified four constructs of the SCT, the environment, the situation, self-efficacy, and reinforcements impacted her decision to feed her infant. This information helped to understand why the WIC breastfeeding duration rates continue to be low. The study also helped to identify training needs, specifically to help the WIC professional understand and become more sensitive to the WIC mothers' reasons for her feeding choices and the improvement in community collaboration to help increase overall breastfeeding duration.

This research study was also important for social change in that it helped bring to light the challenges that a low-income postpartum breastfeeding woman faces once she leaves the hospital. The research study helped to explain the reasons why the woman makes the feeding decisions and what education she received, where she received it,

when she received the education, the impact of the education, how the education was perceived, and the outcome of her feeding decision.

Summary

There is no question that breastfeeding has benefits for both the mother and the infant as documented in studies over the last twenty years (AAP), 1997, 2004; Riordan & Auerbach, 1999; (WHO), 1981; Zell, 2011). However, there is a lack of documented support for postpartum breastfeeding women though once they leave the hospital and for the first four weeks after delivery (Cross-Barnet et al., 2012; Eichmann et al., 2015). Since the 1980s the WIC program in Philadelphia County has provided and documented extensive education, promotion, and support for women to help them choose to breastfeed as the best feeding method for their infants (WIC Annual Breastfeeding Education Plans 1995-2017). Without the support from the health care professionals, the WIC community, a support system at home, and a supportive partner, a woman who lacks the self-confidence, is less likely to continue to breastfeed their infants (Sriraman & Kellams, 2016). This transcendental phenomenological research study helped bring awareness to the importance of a support system for breastfeeding women during the first four to six weeks postpartum to help meet their needs to breastfeed when they come home from the hospital (Cross-Barnet et al., 2012; Eichmann et al., 2015).

Chapter 1 provided an introduction to the topic, the background of the problem, the problem statement, the purpose of the study, and the research questions and hypotheses. The chapter also included the nature of the study, the theoretical framework; operational definitions, and the assumptions, scope and limitations, delimitations, and the

significance of the study, including its implications for social change. Chapter 2 will address a detailed review of the literature, including the benefits of breastfeeding, history of breastfeeding resources, timeline and support of breastfeeding provided by the Philadelphia WIC program over 20 plus years, WIC program funding and grants provided for breastfeeding services, breastfeeding initiatives and resources provided in the hospital and in the community, breastfeeding barriers and the theoretical framework that was used for the study. Chapter 3 will discuss the research method that was used, the sample population that was used, the methods of data and how the data was analyzed. Chapter 4 will provide a detailed description of the results of the research study. Chapter 5 will discuss the results of the research study, interpretation of the findings, implications for social change and recommendations for further research.

Chapter 2: Literature Review

Introduction

There is a lack of support for postpartum breastfeeding women once they leave the hospital and for the first 4 weeks after birth (Cross-Barnet et al., 2012; Eichmann et al., 2015). The focus of this research study was on understanding the influences of breastfeeding support as described by participants, how participants chose to feed their infant, and how this choice impacted WIC breastfeeding duration rates. As indicated by Ertem et al.'s (2001) findings, breastfeeding women in the WIC program seem to possess knowledge about the importance of breastfeeding but lack the confidence in their ability to breastfeed. In this chapter I review the theoretical framework chosen for this study and discuss how it relates to the study, explain how breastfeeding initiatives affect feeding choices, and provide a detailed review of literature on various breastfeeding support methods. A key issue explored in the literature review is whether there is an association between increased support and WIC breastfeeding duration rates. The chapter begins with an overview of my literature search strategy.

Literature Search Strategy

I gathered epidemiological, psychological, behavioral, science, and nursing literature that was in English and published between 1996 and 2017. I used the following databases: Academic Search Complete, ProQuest, Pro-Quest Central, Science Direct, and Google Scholar. The subject terms I used (individually and in combination) were *breastfeeding*, *baby-friendly hospital*, *breastfeeding and community*, *health professional*, *breastfeeding duration*, *breastfeeding support*, *exclusive breastfeeding*, *maternity care*,

breastfeeding initiation, *breastfeeding in the WIC Program*, *nursing*, *breastfeeding and fathers support*, *breastfeeding and peer counseling*, *nursing infants*, and *breastfeeding and supplemental formula*. Additional studies were identified through manual searches of original articles.

The purpose of this literature review is to summarize what is known about the association between the breastfeeding duration of women enrolled for WIC benefits (dependent variable) and the nine independent variables, which were

- the prenatal breastfeeding education women receive from their medical provider,
- the prenatal breastfeeding education women receive at the WIC office,
- breastfeeding education women receive at the hospital at delivery,
- the postpartum breastfeeding education women receive at discharge,
- the postpartum breastfeeding education women receive from their medical provider,
- the postpartum breastfeeding education woman receive at the WIC office,
- the postpartum breastfeeding support women receive from family and friends,
- the postpartum breastfeeding support women receive from lactation resources, and
- women's breastfeeding self-efficacy.

In the literature review I also discuss how women's descriptions of their breastfeeding practices and attitudes about breastfeeding relate to the SCT constructs of environment, situation, self-efficacy, and reinforcement. The research problem in this study was the

lack of knowledge about the reasons why WIC mothers report discontinuing breastfeeding given that education has been provided through the WIC program for over 20 years and breastfeeding has been documented as the best source of nutrition for newborns (AAP, 1997, 2004; Riordan & Auerbach, 1999; WHO, 1981; Zell, 2011). As Sriraman and Kellams (2016) states, breastfeeding duration remains low.

Theoretical Framework

The way people behave and the choices they make are influenced by many factors. The successes and failures that people experience influence the decisions they make in the future (Bandura, 2001). SCT is a well-known theoretical framework developed by Albert Bandura that hypothesizes reasons for human motivation (Bandura, 2001). SCT has 11 core assumptions that are commonly referred to as constructs:

1. *Environment*: Factors that are physically external to the person and which provide social support (Glanz et al., 2002, p. 169).
2. *Situation*: The perception that the woman has of the environment, including those that promote healthful forms (Glanz et al., 2002, p. 169).
3. *Behavioral capability*: Knowledge and skill to perform a given behavior (Glanz et al., 2002, p. 169).
4. *Expectations*: Anticipatory outcomes of a behavior and that include modeling positive outcomes of healthful behavior (Glanz et al., 2002, p. 169).
5. *Expectancies*: The values that the person places on a given outcome and incentives (Glanz et al., 2002, p. 169).

6. *Self-control*: Personal regulation of goal-directed behavior or performance, problem-solving, and self-reward (Glanz et al., 2002, p. 169).
7. *Observational learning*: Behavioral acquisition that occurs by watching the actions and outcomes of others' behavior; it includes credible role models of the targeted behavior (Glanz et al., 2002, p. 169).
8. *Reinforcements*: Responses to a person's behavior that increase or decrease the likelihood of reoccurrence and which promote self-initiated rewards and incentives (Glanz et al., 2002, p. 169).
9. *Self-efficacy*: The person's confidence in performing a particular behavior. This construct is the basis of SCT (Glanz et al., 2002, p. 169).
10. *Emotional coping responses*: Strategies that are used by a person to deal with emotional stimuli and which provide training in problem solving and stress management (Glanz et al., 2002, p. 169).
11. *Reciprocal determinism*: The interaction of the person, the behavior, and the environment in which the behavior is performed; it encompasses multiple avenues to behavioral change, skill, and personal change (Glanz et al., 2002, p. 169).

I used SCT, specifically four of the 11 constructs (environment, situation, self-efficacy, and reinforcements), as the theoretical framework for this research study. I chose these four constructs as the focus of this study because they explain the factors that influence the breastfeeding woman's decision about feeding her infant.

In this study one of the most important concepts of the SCT was the construct "environment," which is defined as factors physically external to the person that provide social support (Burdette, 2013; Price, 2014). Variables in this research study that were considered environment constructs were the breastfeeding woman's support system including her partner, her family, her friends, her health care professionals, and the WIC staff. The second construct included in this study was situation, which is defined as the woman's perception of her environment, including those that promote healthful forms (Burdette, 2013; Price, 2014). Sources in this research study that were considered situation constructs included the breastfeeding woman's community support system and living situation; I explored whether that situation supports her decision to breastfeed her infant. According to SCT, the knowledge and skills a person develops plays an important role in what she chooses to do, and the level of confidence a person possesses will affect her success; this is what Bandura refers to as self-efficacy (Bandura, 2001). Self-efficacy, the basis of the SCT, is defined as a person's confidence in performing a particular behavior (Bandura, 2001). Many studies have been completed that showed if a woman has stronger confidence in her ability to breastfeed, she will continue to breastfeed longer (Ertem, 2001; Ingram et al., 2011; Rodrigues et al., 2015). The fourth construct studied in this research is the construct, "reinforcements," which is defined as responses to a person's behavior that increase or decrease the likelihood of reoccurrence; promote self-initiated rewards and incentives (Bandura, 2001). Variables of reinforcement constructs in this research study included follow up education and support given to the breastfeeding woman to help her breastfeed her infant, the extended period of time and WIC benefits of

supplemental foods she would receive on the WIC program for as long as she breastfeeds her infant up to one year, and the continued health and bonding benefits she and her infant would receive through the breastfeeding experience.

In this study it was projected that the independent variables of: (a) the prenatal breastfeeding education the woman received from her medical provider; (b) the prenatal breastfeeding education the woman received at the WIC office; (c) breastfeeding education the woman received at the hospital at delivery; (d) the postpartum breastfeeding education the woman received at discharge; (e) the postpartum breastfeeding education the woman received from her medical provider; (f) the postpartum breastfeeding education the woman received at the WIC office; (g) the postpartum breastfeeding support the woman received from family and friends; (h) the postpartum breastfeeding support the woman received from lactation resources; and (i) the woman's breastfeeding self-efficacy had a significant effect on the duration rate because the use of these constructs, will develop confidence in the woman to breastfeed her infant as the best source of nutrition for her child (Ertem et al., 2001).

Literature Review Related to Key Variables and/or Concepts

Breastfeeding is known to be the gold standard of feeding an infant, but not all women choose this method of feeding (Lushniak, 2014). Although women have the knowledge of the benefits of breastfeeding, women of lower socioeconomical status do not choose to breastfeed, especially women who participate in the WIC program (Eichmann et al., 2015; Sriraman & Kellams, 2016).

An extensive review of the literature on the duration of breastfeeding and the independent variables was completed and included the topics: (a) Benefits of Breastfeeding: benefits for the mother, benefits for the infant; (b) The Special Supplemental Nutrition Education Program for Women, Infants, and Children (WIC): The WIC Program in Philadelphia; (c) History of breastfeeding and support in the WIC Program in Philadelphia County: WIC Program funding in Philadelphia, The Maternal and Child Health Grant, WIC food dollars, The 4-Step breastfeeding counseling method, The WIC community breastfeeding coalition; (d) The WIC food package; (e) Breastfeeding education and support in the hospital: The Baby Friendly Hospital Initiative, The stimulus grant for BFHI certification, The Keystone Ten Initiative; (f) Breastfeeding support: The WIC breastfeeding peer counselor, Fathers, family members, and the environment, The health care professional; (g) Breastfeeding self-efficacy; (h) Breastfeeding barriers: lack of support, lack of understanding of the "Ten Steps," and supplemental formula usage, in detail.

Benefits of Breastfeeding

Benefits of Breastfeeding for the Mother. Breastfeeding, according to The 2016 Centers for Disease Control and Prevention (CDC) Breastfeeding Report Card, is a key strategy to improve public health. The AAP recommends that all newborn infants be exclusively breastfed for the first six months and continue to breastfeed for one year with complimentary foods as instructed by the pediatrician (AAP, 2004). Breastfeeding is the best choice a woman can make for both her infant and for herself. There are volumes of research that shows how a woman can benefit from breastfeeding her infant. Those

benefits include lower risks for diabetes, cardiovascular disease, hypertension, hyperlipidemia, rheumatoid arthritis, postpartum depression, as well as decreased risk for breast and ovarian cancers (CDC, 2015). Other research has shown immediate benefits for the mother at delivery show increased levels of oxytocin, resulting in less bleeding and more rapid uterine contractions causing the earlier return to pre-pregnancy weight, delayed return of ovulation leading to a natural increased in spacing between pregnancies, and decreased bone loss (Eichmann et al., 2016).

Benefits of Breastfeeding for the Infant. Infants who are breastfed have reduced risks for ear, respiratory, and intestinal infections, and are at lower risk for asthma, atopic skin disorders, urinary tract infections, allergies, diabetes, pneumonia, obesity, and sudden infant death syndrome (AAP, 2004). Premature infants are especially at risk for necrotizing enterocolitis and mothers are highly encouraged to breastfeed these infants for added protection (AAP, 2004). A research study showed that infants breastfed for at least one year correlates with better mental health in children through the first 14 years of life (Oddy et al., 2009).

The Special Supplemental Nutrition Education Program for Women, Infants, and Children (WIC)

The United States Department of Agriculture (USDA) provides funding for the Special Supplemental Nutrition Education Program for Women, Infants, and Children (WIC) program which was developed in 1972 as a federal grant program by Congress to safeguard the health of low-income pregnant and breastfeeding women, infants, and children through five years old who are at nutritional risk (USDA, 2015). USDA, through

the division of Food and Nutrition services provides funds to 50 state agencies, 34 Indian Tribal Organizations, Puerto Rico, Guam, and the U.S. Virgin Islands (USDA, 2015). In order for an applicant to be eligible to participate for WIC program benefits, they must: (a) be classified as a pregnant, postpartum, or breastfeeding woman, infant, or child under the age of five years old, (b) reside in the state where they are applying, (c) meet the income guidelines that are at or below 185% of the U. S. poverty Income Guidelines, and (d) be determined at nutritional or medical risk by a health professional or locally trained certified WIC nutrition professional (USDA, 2015). The benefits of the WIC program include supplemental nutritious foods and infant formula, nutrition education, breastfeeding promotion and support, and referrals to other local health and social service programs.

The WIC Program in Philadelphia County

The current participation of over 53,000 women, infants, and children in Philadelphia represents 27% of the total WIC caseload in the Commonwealth of Pennsylvania as of October 2018 (Pennsylvania Department of Health, Bureau of Women, Infants, and Children, 2018). The bar graph below shows the WIC participation in Philadelphia, PA over the last 20 plus years. The figure shows the WIC participation from 1980, a participation of 13,852 to the participation of 53,080 in 2018 (Figure 2).

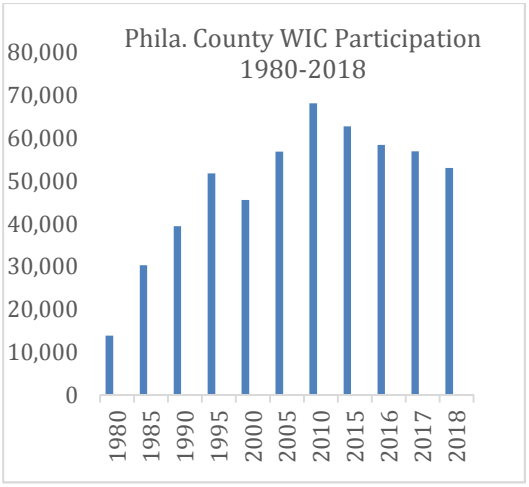

Figure 2. Philadelphia County-WIC Participation 1980-2018 *(PA Department of Health WIC Monthly Participation 1980-2018).*

Breastfeeding in the Philadelphia WIC Program since 1984.

Although the caseload in the WIC program in Philadelphia County's WIC program increased since 1980 until 2010 and then shows a slow decline, the total number of breastfeeding women, or incidence, has not shown a significant increase over the years. The number of breastfeeding women increased very slowly in proportion to the caseload since the agency began tracking the breastfeeding women in 1986. The breastfeeding incidence rates in Philadelphia County's WIC program are shown in Figure 3. As the figure shows beginning in 1990, the incidence of breastfeeding women was 497 and continued to increase to the highest incidence in 2016 at 2,450 (Pennsylvania Department of Health, Bureau of Women, Infants, and Children-Quick WIC Data Reports 2005-2018). The incidence of breastfeeding women was increasing at an average of 2.0% (Figure 3).

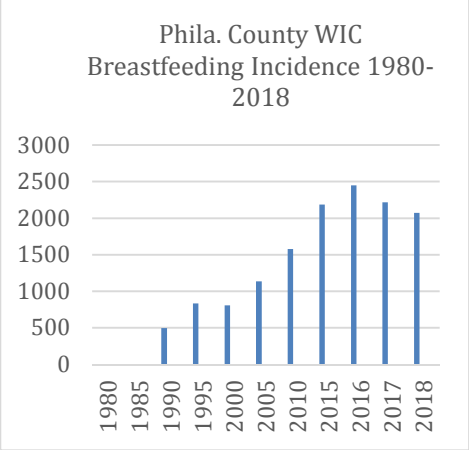

Figure 3. Philadelphia County- WIC Breastfeeding Incidence Data 1980-2018 *(PA Department of Health WIC Breastfeeding Incidence 1980-2018).*

The breastfeeding duration rates for Philadelphia County's WIC program are shown in Figure 4. The figure documents the inconsistent duration rate from 1995 (9.7 weeks), when the first data on duration was documented, through 2018 (11.6 weeks). Although the rate has periods of significant increase from 1995 to 2000 and then again slightly from 2005 to 2010, there have been significant drops in duration from 2000 to 2005 and then again from 2010 to 2015 (Figure 4). Although this data also shows a slight increase in incidence until 2016, it is of concern to public health professionals as to why the WIC breastfeeding duration continues to remains low given the many WIC breastfeeding support resources available and Baby-Friendly hospital support and referrals offered by each Philadelphia hospital.

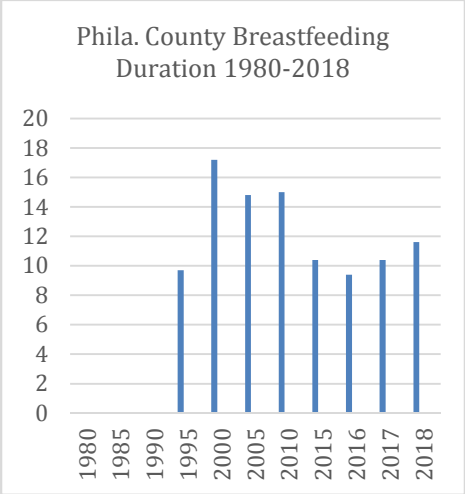

Figure 4. Philadelphia County WIC Breastfeeding Duration Data 1980-2018 *(PA Department of Health WIC Breastfeeding Duration 1980-2018).*

Since 1980 In Philadelphia County, the WIC program staff of has made significant efforts to create a supportive community breastfeeding network including the hospitals to help improve incidence and duration rates. During this time the highest duration rate was 17.2 weeks in FFY 2000 and the lowest 9.4 weeks in FFY 2016. However, without continued community support WIC breastfeeding duration rates continue to be a challenge. The details of breastfeeding activities and support provided by the Philadelphia County's WIC program staff from 1984 through 2018 is described in the timeline (Figure 5).

Figure 5. Timeline of Breastfeeding Activities and Support – Philadelphia County's WIC Program- 1984-2018

YEAR	Activity
1984-86	First BF Counselor- (F/T Hispanic Nutritionist) P/T BF counselor-Shared culture.
1992	Hired First F/T WIC BF Coordinator (RN, IBCLC)– 14 P/T WIC BF Peer Counselors*
1993-94	Hired 7 P/T WIC BF Peer Counselors*-Received Healthy Start Project Grant First Year- $18,000.
1994-95	Hired 8 P/T WIC BF Peer Counselors*-Received Healthy Start Project Grant Second Year- $18,500.
1998	Using Food Dollars (Public Law 105-336) Developed BF Pump Station; Leased 200 DB. electric pumps, Purchased100 hand pumps, and 50 hospital-grade pumps; hired F/T BF Mgr.
2005	Received Maternal, Child, and Family Health Grant from PA DOH ($200,000); Hired 12-P/T Peer Counselor for two years*.
2011	PA Department of Health invited each hospital to apply for $68,000 BF Stimulus Grant
2013	Hosted CLC Training-35 WIC Nutritionists became (CLC)s.
2014	Hosted CLC Training- 6 WIC Nutritionists became (CLC)s.
2015	Hosted CLC Training- 4 WIC Nutritionists became (CLC)s. Hired 5 full-time WIC BF Peer Counselors.
2016	Hosted CLC Training - 2 WIC Nutritionists and 3 BF Peer Counselors became (CLC)s. Hired 7 full-time WIC BF Peer Counselors.
2017	Hosted CLC Training- 6 WIC Nutritionist and 2 BF Peer Counselors became (CLC)s. Hired new Breastfeeding Peer Manager, CLC.
2018	Hosted CLC Training- 4 WIC Nutritionists and 2 BF Peer Counselors became (CLC)s.

Note: (P/T)WIC BF Peer Counselors usually worked an average of 1-2 years.

WIC Program Funding in Philadelphia. The WIC program is not an entitlement program; United States Congress must reauthorize funds each year for the program. The United States Department of Agriculture, (USDA) is the sole funding for the program in the Commonwealth of Pennsylvania (Pennsylvania WIC Fact Sheet, 2017). The federal money is administered to county or non-profit agencies with two funding levels- food funds which includes money used for WIC allowable foods and money used for nutrition services and administration costs (NSA) funds. In the Commonwealth, if additional grant money is received, it is offered to agencies for specific projects such as to hire part-time breastfeeding counselors. In Philadelphia County in FFY 1994, 1995, and 2005 the agency decided to accept grant funds to hire additional breastfeeding counselors to provide consistent promotion and support at each

WIC office throughout the City of Philadelphia, PA (Figure 5). However, grant money is not always available to support the part-time breastfeeding peer counselors' salary and peers usually worked for an average of one to two years.

The Maternal and Child Health Grant. Once the state agency noticed an increase in duration rates during the previous year, the agency was awarded a two-year Maternal and Child Health grant in the amount of $200,000 to continue to support breastfeeding women and increase duration. With this additional grant money, the agency hired additional peer counselors which provided full-time breastfeeding support at each WIC office throughout the City of Philadelphia. The grant became effective April 1, 2005 with much of the money for the first year spent on the peer counselors' salary and training materials. Each of the 12 counselors received a supply of resources that included reference books and props to use for group sessions at the WIC office. Throughout the year, materials were updated and added as they were found to helpful for use in the WIC office.

WIC Food Dollars. According to Public Law 105-336, the William F. Goodling Child Nutrition Reauthorization Act of 1998, the food funds section of the operating annual budget was now allowed to be used to purchase breastpumps. A series of WIC breastpump station policies were developed, a breastpump manager was hired, and each WIC office was given space identified for breastfeeding WIC mothers to nurse their infants while they waited for WIC benefits. The WIC breastfeeding department developed a breast pump station that operated out of the administrative office and provided services to the entire County/City of Philadelphia, PA and surrounding counties

when necessary. For example, when a premature infant was hospitalized in a Philadelphia hospital but lived outside of the city and getting to a WIC office was a hardship, the parent would call the WIC office located in Philadelphia and request a hospital-grade breastpump to use while the infant remained in the Philadelphia hospital. Because the WIC funds are used for all WIC participants, the agency provides services to anyone eligible and sends the documentation to the participant's regular WIC office for follow up education.

The WIC breastfeeding mothers who chose to exclusively breastfeed their infants are given a free WIC breastpump if they do not receive any WIC formula. They also receive continual breastfeeding support from the WIC peer counselors to breastfeed their infant while they return to work or school. If a WIC breastfeeding mother delivers an infant prematurely and requires a hospital-grade breastpump, the WIC breastpump station provides a pump to her for a $25.00 deposit (per NORTH, Inc.'s, 1998 Breastpump Policy). The WIC breastfeeding mother continues to use the breastpump for as long as the infant is in the hospital and returns the pump when she no longer needs to use it; she is given a $25.00 refund and five dollars is kept for cleaning purposes (per the 1998 agreement document signed by the WIC endorser and the administrator of the WIC program in Philadelphia). The WIC breastfeeding mother is given breastfeeding support and education throughout her breastfeeding experience either person-to-person at the WIC office or via telephone from the WIC breastfeeding peer counselor or from the WIC breastpump manager.

The 4-Step Breastfeeding Counseling Method. The process of counseling women enrolled in the WIC program in Pennsylvania using a four-step method started in the fall of 2003. The basis of this method was to encourage all pregnant women to choose breastfeeding as the feeding choice for her infant. Each woman received education about breastfeeding over a series of time during her prenatal appointment when she came into the WIC office throughout her pregnancy. This method was especially important to those women who report that they were undecided about how they would feed their newborn.

In January 2004, the first step of the 4-Step breastfeeding counseling method was revised to correspond with findings from the Advertising Council (AD) and the National Breastfeeding Awareness Campaign. Rather than focus on the benefits of breastfeeding, which has been the focus of counseling women for years, the new focus directed staff to educate women on the consequences of not breastfeeding (United States Department of Health and Human Services, n.d.). This approach helped to counter formula marketing strategies that advertised their product as being close to breastmilk. As a result of such marketing, women tend to view breastmilk as the ideal, but considered formula to be an acceptable substitute that provided everything their baby needed to grow properly. Because of this information, the WIC program had to evaluate how breastfeeding counseling was provided in the WIC program setting. The 4- Step method included an advertisement developed by the AD Council of infant sitting next to building blocks. On the left was a long list of ingredients to show the reader what is in formula; on the right was a very short list of natural ingredients to show what is in breastmilk. Each staff person was instructed to have this AD at their desk to facilitate a conversation about

breastfeeding and explained the protective benefits of breastmilk that could not be found in formula. The 4-Step method training process continued throughout subsequent meetings during the following two years. As a result of the training provided and the breastfeeding support given in the WIC offices throughout the agency, increases in breastfeeding incidence and duration rates were shown through 2004 and into 2005. The average duration rate reported in July 2004 was 14 weeks for (37%) of all breastfeeding women in the agency as compared to 16 weeks for (40%) of all breastfeeding women in January 2005 (Pennsylvania Department of Health, Bureau of Women, Infants, and Children Quick WIC Data Reports 2005-2015).

WIC Community Breastfeeding Coalition. In 2007, the WIC breastfeeding department began to reach out to the community health professionals and developed a community breastfeeding coalition. The WIC breastfeeding coordinator and the WIC program director developed an invitation list of health care professionals that included physicians, nurses, social workers, nutrition professionals, public health professionals, breastfeeding professionals, and professors from nutrition and nursing programs to attend monthly coalition meetings to discuss ways to increase breastfeeding awareness and support for WIC mothers in the community. Interest in the coalition was well accepted and meetings continued for the first two years. Plans were made to promote breastfeeding, especially during World Breastfeeding Week each year in August. However, after two years another coalition hosted by local hospital staff was developed and the member's interest seemed to shift towards that group since the topic of Baby Friendly accreditation was their focus. That group became the current Multi-hospital task

force which meets monthly. Members of this group include professionals who provide breastfeeding support within the City of Philadelphia and surrounding counties.

The WIC Food Package

In 2009, the foods allowable to purchase with WIC vouchers, referred to as the food package, were changed to reflect the 2005 Dietary Guidelines for Americans. Under the recommendations of the Institute of Medicine (IOM), the United State Department of Agriculture made significant changes to the food package to include fruits, vegetables, whole grains, soy beverage alternative, low-fat milk options, and limits to fruit juice for children. The changes also included incentives to support breastfeeding women by increasing the value of the food package for exclusive breastfeeding women and reducing the amount of formula provided to partially breastfeeding women. The amount of formula given to infants was changed to calculating it by age and postponing complimentary foods, rather a standard number of cans as was previously given in prior years (Institute of Medicine, 2005). In addition to the food package increase as an incentive to breastfeed, the practice of no formula given to the breastfed infants for the first month was also adapted as policy. According to this policy, if a mother is enrolled on the WIC program as exclusively breastfeeding her infant she is not eligible to receive any formula for the first 30 days (Policy & Procedure 7.06-PA WIC). The WIC staff not only explained the policy to the woman, but they also encouraged her to continue to breastfeed and not use formula in order to build her milk supply. The policy is not meant to be a punitive action, it is to help the woman to understand that her breastmilk needs time to produce and the 30 days will allow her to produce the milk that her baby needs to

successfully breastfeed. If the breastfeeding woman calls the WIC office and requests supplemental formula, she is required to come into the office to speak with the WIC breastfeeding peer counselor and/or WIC nutrition professional to receive counseling and education on breastfeeding and to determine if and how much supplemental formula the infant is to receive from the program.

A study by Whaley and her colleagues (2012) focused on policy changes that affected the food package in the WIC program. In this study, the researchers analyzed data before and after the 2009 food package policy changes. According to this study, these changes were welcomed by the public health community in the hopes that the changes would increase breastfeeding incidence and duration among low-income mothers in the WIC community (Whaley et al., 2012). Some key changes to the policy include: (a) no supplemental formula for the first 30 days, (b) an increase in the amount of supplemental formula for breastfeeding mothers, and (c) specific amount of supplemental formula (if any) according to the individual need of the infant. Results of this study showed that when the women were given breastfeeding support and education, they took less formula and breastfed more resulting in longer duration rates (Whaley et al., 2012). The policy changes may have brought about a shift in perception of the value of the fully breastfeeding food package for the breastfeeding woman as equal or greater than the value of the infant formula package. This shift only highlights the need for WIC breastfeeding peer counselors in each WIC office.

A study completed by Langellier et al., 2014 tracked the impact of the WIC breastfeeding food package changes on the breastfeeding rates. Although many past

research studies showed concern about providing any formula, a long-known stigma of the WIC program that suggested a promoter of formula to be a barrier of breastfeeding rather than a supporter, this study was successful in showing a method of improving breastfeeding outcomes (Langellier et al., 2014).

Breastfeeding Education and Support in the Hospital

Baby Friendly Hospital Initiative.

The Baby Friendly Hospital Initiative (BFHI) is a global program that was developed in 1991, sponsored by the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), and was designed as a strategy to improve breastfeeding rates worldwide (Baby-Friendly, USA, 2010). BFHI has been developed to encourage and recognize health care facilities and birthing centers that offer an optimal level of care for infant feeding. The BFHI assists health care facilities in giving mothers the information, confidence, and skills needed to successfully initiate and continue breastfeeding their infants or feeding formula safely, and gives special recognition to facilities that have done so. According to Baby-Friendly USA, over 22,000 health care facilities in more than 150 countries have earned the BFHI status, however only five percent of facilities in the United States have this designation and only seven birthing facilities have BFHI designation in Pennsylvania; three in Philadelphia, PA. In order to achieve BFHI status, the facility needs to obtain a copy of the most recent *Guidelines and Evaluation Criteria for Facilities Seeking Baby Friendly Designation* that explains the procedures and standards that the

facility must achieve to attain BFHI certification. The process includes a pathway that must be followed in four steps, referred to as the 4-D Pathway (Appendix B).

According to Baby-Friendly USA, the Ten Steps to Successful Breastfeeding were developed by a team of global experts and consist of evidence-based practices that have been shown to increase breastfeeding initiation and duration. Baby-Friendly hospitals and birthing facilities must adhere to the Ten Steps to receive, and retain, a Baby-Friendly designation (Baby-Friendly, USA, 2010). The Steps are:

1. Have a written breastfeeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits of and management of breastfeeding.
4. Help mothers initiate breastfeeding within one half hour of birth.
5. Show mothers how to breastfeed and how to maintain lactation, even if they should be separated from their infant.
6. Give newborn infants no food or drink other than breast milk, unless medically indicated.
7. Practice rooming-in: Allow mothers and infants to remain together 24 hours a day.
8. Encourage breastfeeding on demand.
9. Give no artificial teats or pacifiers to breastfeeding infants.
10. Foster the establishment of breastfeeding support groups and refer mothers to them, on discharge from the hospital or clinic.

Stimulus Grant for BFHI Certification. During Federal Fiscal Year 2011, the Pennsylvania Department of Health offered each of the six delivery hospitals an opportunity to apply for a grant in the amount of $68,000 towards their BFHI journey. The only requirement in their application was that they were to use a percentage of the money to collaborate with the local Philadelphia WIC program on their journey towards BFHI designation. Each hospital applied for the grant money and received $68,000 effective October 1, 2012 (Pennsylvania Department of Health, Bureau of Women Infants, and Children, 2011).

Keystone Ten Initiative. Many states have taken the Baby-Friendly Initiative and changed it to create a system that reflected the same goals but on a smaller scale for their individual and personalized needs. The Keystone Ten Breastfeeding Initiative was developed to mirror BFHI in the Commonwealth of Pennsylvania by the Department of Health in order to promote and support breastfeeding as the best method of feeding all infants in Pennsylvania (Pennsylvania Department of Health, The Keystone Ten, n.d.). The Ten Steps for Successful Breastfeeding that are outlined in BFHI by Baby-Friendly, USA, Inc. are also followed and hospitals that are on the BFHI pathway are also encouraged to apply for the Keystone Ten designation, as well. There are four overall goals of the Keystone Ten initiative, including: (a) increase breastfeeding initiation and duration rates in Pennsylvania, (b) increase exclusive breastfeeding at facility discharge; (c) support breastfeeding with evidence-based maternity care practices; and (d) improve the health of mothers and babies (Pennsylvania Department of Health, n.d.). According to the initiative, the hospitals and birthing facilities benefit from receiving Keystone Ten

certification by increased patient and family satisfaction; increased staff knowledge; expanded staff satisfaction and staff retention; enhanced image and reputation; and potential cost savings. Hospitals and birthing facilities that meet and complete each step can display their Keystone Ten certificate in marketing and advertising efforts with pride as a symbol of achievement.

The BFHI's Ten Steps of Successful Breastfeeding are guidelines for the health care professionals to follow, the tenth step which states that staff must provide community support resources to breastfeeding women upon discharge, is the step that the United States BFHI hospitals are lacking when providing resources in their communities.

Breastfeeding Support

According to the findings and recommendations from the United States Breastfeeding Committee document on achieving exclusive breastfeeding in the United States 2008, crucial time when family, work place, pediatric, and community support is most important for a woman who is breastfeeding, which is at approximately day three and beyond (Figure 6).

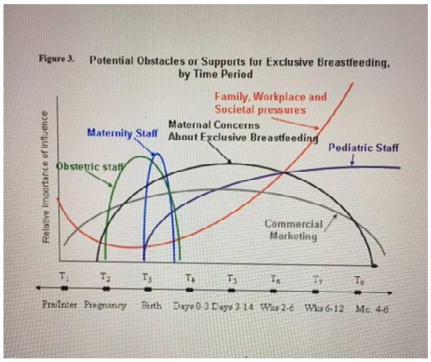

Figure 6. Crucial Timing of Breastfeeding Support, From "Achieving exclusive breastfeeding in the United States," by The United States Breastfeeding Committee, 2008. (http://www.usbreastfeeding.org/p/cm/Id/fid=197).

Typically it is at this time when women are being discharged from the hospital, listed as number ten on the *Ten Steps of Successful Breastfeeding*, also the time when a referral is suggested to be given to the breastfeeding women for support upon hospital discharge but often does not always occur (United States Breastfeeding Committee, 2008).

A review of the literature showed that women will continue breastfeeding their infants once they leave the hospital, if there is support. The support system must come not only from the health care team, but also from her spouse/partner, her immediate family, her friends, and from the members of her community (Gates, 2013; Gross et al. 2014).

The WIC Breastfeeding Peer Counselor. An intervention that has shown success in improving WIC breastfeeding initiation and duration is breastfeeding peer counseling (Gross et al., 2015). The WIC program has noted this success at the federal level and expanded its funding for peer counseling programs in many states. Although breastfeeding trends in many WIC communities have improved, rates are still significantly lower than the Healthy People 2020 objectives of (81.9%) initiation, and (60.6%) at six months, and (34.1%) at twelve months (USDA, 2014).

A study completed by Rozga et al. (2014) showed how a breastfeeding peer counselor program was a success in a Michigan WIC program. In this study, The Breastfeeding Initiative (BFI) was a supportive collaboration between Michigan's WIC Program, administered through the Department of Community Health and Michigan State University Extension. The peer counselors were recruited from the community and had a

positive breastfeeding experience. They received basic breastfeeding training, home visiting training, and education and support from an International Board-Certified Lactation Consultant (IBCLC). The protocol developed by the state WIC staff was that the peer counselor was to have one in-person contact with the participant during the prenatal period, one in-person visit in the hospital after delivery, one phone call within two days after delivery, at least one home visit as soon as possible after hospital discharge and another home visit during the first month postpartum (Rozga et al., 2014). The next steps in the protocol were to call the participants weekly during the first month postpartum and then monthly throughout the first year of breastfeeding.

Data collected during each contact included demographic data about the mother and the infant, information about feeding experiences such as issues or concerns, and if any other liquids or solids were introduced to the infant other than breastmilk and when were they given to see if the infant was exclusively breastfed or had been using supplemental feedings.

This study was completed from 2005 until 2011 and collected data on 5,886 women. Of the 5,429 women who had initiated breastfeeding, (77%) of the women were still breastfeeding at the end of the first month; and (55.0%) remained breastfeeding for three months; (40%) remained breastfeeding for six months; and (26.0%) remained breastfeeding for one year (Rozga et al., 2014). This study demonstrates how peer counselor programs improve outcomes in low-income populations, and helps a mother identify a contact person in her community when she needs help breastfeeding her new infant.

Another WIC program study that showed peer support success was completed by Tenfelde et al., (2012), in this research study, 309 low-income WIC participants were studied over a four-year period at a Federally Qualified Health Center (FQHC) in Chicago. All women were enrolled during their prenatal health visit and tracked throughout their postpartum period. The infants were tracked from birth through their first twelve months. To qualify for the study the women had to deliver an infant at least weighing 2,500 (g), at 37 weeks gestational age or more, had no health complications, and were not placed for adoption. The women were tracked by the health center electronic and WIC computer data records and breastfeeding cessation dates were entered each month. The results showed that the critical period when women stop breastfeeding was between birth and the first month, when (20%) of the sample stopped breastfeeding stating that "perception of insufficient milk" as the main reason for discontinuing breastfeeding. Most of the women in this study (69%) stopped breastfeeding before six months, stating "returning to work or school," "other maternal problems," or "infant weaning self" as reasons for discontinuing breastfeeding (Tenfelde et al., 2012). The results also showed that the women with breastfeeding support were (40%) less likely to stop breastfeeding than were women without support (Tenfelde et al., 2012).

The Maryland WIC program experienced success with a breastfeeding peer counselor program targeting African-American breastfeeding women. In this study the women participated in a focus group and shared their thoughts about breastfeeding with each other. In many cases the women said that their health care provider was not supportive and assumed that they would not breastfeed, did not have any support at

home, and that African Americans do not breastfeed because their grandmothers told them they no longer want to be seen as “mammies” to the white women. This thought process is a reference to American slavery and the grandmothers were proud to state that they no longer are slaves and they need to be proud to feed their grandchild formula as it was now a status symbol (Reeves & Woods-Giscombe, 2014).

Fathers, Family Members, and Environment. The opinion of a pregnant woman’s family, especially her partner, can greatly influence her infant feeding decision. In some families and cultures, the decisions about infant feeding are made by the infant’s father. Involving the father in the education and counseling can greatly improve the mother’s breastfeeding confidence and commitment (Sriraman & Kellams, 2016).

A research study completed by Kornides and Kitsantas (2013) on the evaluation of breastfeeding promotion, support, and knowledge of the benefits of breastfeeding was completed to learn how the exposure to breastfeeding education during the prenatal period would affect the breastfeeding rates once the women delivered the infant. The data was collected through the Infant Feeding Practices II study (IFPS) and nationally distributed to 500,000 households. Approximately 4,900 women participated at the beginning of the study and after excluding those with missing data, 3,033 women-infant dyads were analyzed for breastfeeding initiation after birth, and 2,546 women were analyzed for breastfeeding practices at two months after birth. Mother-infant pairs were excluded from the study if either had a health condition that would affect feeding, the infant weighed less than 5.5lbs. at birth, was born before 35 weeks gestation, or stayed in intensive care after birth for more than three days (Kornides & Kitsantas, 2013).

Results from this study showed that (98.0%) of women who initiated breastfeeding had families who supported breastfeeding only, as did (82.5%) of those who were breastfeeding at two months, and about (55.8%) of women who were exclusively breastfeeding at two months postpartum and women with friends who breastfed their babies were more likely to initiate and continue to breastfeed (Kornides & Kitsantas, 2013). Increased odds of breastfeeding initiation (2.85), any breastfeeding at two months (1.5), or exclusively breastfeeding (1.4), were found among women if they and their partners were breastfed as babies (Kornides & Kitsantas, 2013).

The results of this study show how significant the immediate support of family and friends are to the success of the breastfeeding experience. Women who breastfeed their infants rely on the support of her health care provider for the education, but more importantly, the support of her partner, family, and friends who are helping her care for her child needs to also be in support of her feeding decision and should also be included in the prenatal and discharge breastfeeding education.

A research study that was completed in a mid-west university population studied the community's attitudes and beliefs about infant feeding practices. The researchers separated his convenient sample of 754 into two groups; the first group was 492 students (S) and the second group was 262 faculty, staff, and administration (FSA). The researchers used an online survey to ask questions of the groups living in the community about their breastfeeding experiences, attitudes, and beliefs. Demographic data was collected and SPSS software was used to analyze the data. The results of the survey showed that the (FSA) group had stronger positive attitudes about breastfeeding than the

(S) group. However, the (S) group had more positive childhood opportunities to observe breastfeeding than the (FSA) group. It was concluded that the students probably observed more breastfeeding occurring when they were children because there were more women breastfeeding than when the (FSA) respondents were children (Vari et al., 2013). This research study highlighted the importance of studying the community to know what their attitudes and beliefs are about feeding the infants who live in the community. Community members that are supportive of breastfeeding can positively influence the health-significant decisions made by individuals and families; and learning about breastfeeding attitudes, beliefs, and experiences of a community is integral to understanding breastfeeding behavior patterns in a community (Vari et al., 2013).

A study completed by Price (2014) attempted to uncover information while completing home visits, found that feeding decisions are not made based on health concerns alone. The decisions are influenced by other factors including social, cultural, and environmental issues that cannot be ignored. Community issues that impact both the mother and the mother's beliefs must also be considered when working with her. Breastfeeding must also be understood by the community and promoted and supported as the cultural norm. In this six-month telephone study, Price and her team contacted postpartum women within the first postnatal period to offer them breastfeeding support at home, at the children's center, and over the telephone. They were also invited to attend breastfeeding support groups after seven days postpartum and asked to complete evaluations of the information given. Subsequent telephone calls were made over the six-month period. Assessments of infant growth were completed on the infants and

breastfeeding support groups were held over six-months and the women were invited to attend and complete evaluations about the information received at each session.

An overwhelming theme of the survey results showed that providing breastfeeding support in both the home and the children's center setting helped to increase the mother's confidence to continue to breastfeed her infant (Price, 2014). This research study is another example of how important community support for the breastfeeding woman is to her success in breastfeeding her infant.

The characteristics of where an individual lives may have an impact on the choices one makes. This was shown in a study completed by Burdette (2013), who studied the breastfeeding behaviors of 4,228 mothers in 20 urban cities. The demographic data included the average age was 25 years old, African American (47%); Hispanic (27%); White (22%); other races (4%), college degree (11%); and most unmarried (74%). The results showed that (57%) initiated breastfeeding and of those, (21%) continued for at least six months. This study also suggested that residents who are married and are living in highly educated neighborhoods tend to have the social support necessary to sustain breastfeeding than those who are unmarried an in less-educated neighborhoods (Burdette, 2013). This study is an example of how the environment and its surroundings can have an impact on the choices a woman makes in her decision to feed her infant.

An environmental impact that will significantly decide how a woman will feed her infant is her culture. This is shown in a study by Johnson et al. (2016), who studied African American women in Detroit, Michigan. The study, similar to Reeves et al. (2014) explained above, held focus groups to learn more about why African American women

had lower breastfeeding rates than any other racial and ethnic groups. The researchers held six focus groups that were divided into three categories: (a) professional, (b) women breastfeeding or planning to breastfeed, and (c) women not breastfeeding or planning to breastfeed. The African American, pregnant or postpartum women choose to attend one of the three categories and two classes were held in each category; a total of 38 women participated in the focus groups. Groups were facilitated by an African American woman and a white research assistant. A series of questions were asked about general infant feeding thoughts, maternity leave and returning to work, breastfeeding support, and any general topics that the group wanted to include. The results from the focus groups showed that all groups believed that breastfeeding is the healthiest choice for both mother and infant (Johnson et al., 2016). However, most groups reported unsupportive environments, adversity throughout their pregnancy and postpartum period, poor health conditions, lack of support from their health care provider, mental health issues, and lack of culturally-relevant breastfeeding support that leads them to choose formula feeding (Johnson et al., 2016). The results of this study showed the importance of having diverse breastfeeding counselors as a part of the support system to provide education to mothers not only during the postpartum period, but also early in the prenatal period to establish a trusting relationship and build a rapport that supports a continuum of care.

The same message is echoed in another study by Gross, Davis, Anderson, Hall, and Hilyard (2016) in a research study completed with African American women in a WIC program in the state of Georgia. Eleven African American breastfeeding women were recruited to participate in focus groups and were questioned about decisions,

influences, health benefits, pumping, returning to work, and feeding routines. The results from this study showed an increased need for African American breastfeeding role models, especially in the WIC program and in other community programs where there is a need for lactation counselors who are culturally diverse and can relate to the African American women's needs (Gross et al., 2016).

The Health Care Professional. The pregnant woman relies on the professional advice of her health care professional team. The American Academy of Family Physicians recommends that physicians offer breastfeeding encouragement, education, and support even if the office does not provide maternity care and it can be incorporated into visits for other types of care such as preconception care, prenatal care, or care for labor support (Cross-Barnet, et al., 2012; Sexton, 2015).

The decision about feeding her infant is made based upon the education a woman is given while she is pregnant. A study completed by Metallinos-Katsaras et al., (2015) at WIC offices across the state of Massachusetts showed that the earlier a woman was enrolled on the WIC program, the more likely she was to initiate breastfeeding and the longer she continued to breastfeed. In this longitudinal WIC study, 122, 506 women were tracked for a period of eight years from 2001 through 2009. The WIC data was analyzed through the benefits received by both the mother and the infant. Breastfeeding duration was reviewed at birth, three months, six months, and twelve months. Results of the study showed that women who enrolled on the WIC program during their first trimester had a 10-32% greater likelihood of initiating breastfeeding and women who enrolled in their second trimester had a 14-23% greater likelihood of initiating breastfeeding compared to

those women who enrolled on the WIC program during their third trimester (Metallinos-Katsaras et al., 2015). In addition, women who enrolled on the WIC program during their pregnancy where shown to have a longer breastfeeding duration of almost three weeks compared to those who enrolled during the postpartum period; and women who enrolled during their pregnancy were 40% more likely to breastfeed at least three, six, or twelve months compared to those enrolled during their postpartum period (Metallinos-Katsaras et al., 2015). This study shows how repeated, consistent WIC breastfeeding education and support can impact a woman's feeding decision.

The health care professional needs to be well informed and prepared to answer her questions and, at the same time, promote the benefits of breastfeeding to the woman with confidence. In a research study completed by Ingram, Johnson, and Condon (2011), in the United Kingdom showed that the government mandated a policy to train a total of 100 health visitors and 37 nursery nurses on a Baby-Friendly community training course and evaluated the results to see if the mandatory training made a different in breastfeeding rates. In this research study, questionnaires were completed to assess the staff breastfeeding knowledge and attitudes immediately before and one month after training, and six months later. A self-efficacy tool assessed staff confidence in helping and supporting mothers to breastfeed (Ingram, Johnson & Condon, 2011). The breastfeeding mothers were also interviewed at various intervals and completed a questionnaire about their experiences. Results from this research study showed significant improved breastfeeding knowledge in staff, positive staff attitude towards breastfeeding and steady increases in breastfeeding rates at eight weeks since the

mandatory training (Ingram, Johnson, & Condon, 2011). Mandatory training of all health care professionals can be a direction towards increasing breastfeeding duration in the community.

The mother's breastfeeding experience depends on her support system. This support can be found not only in her family, friends, and health care providers but also in her community and environment. An example of community support was found in 2012 in the Indiana State Department of Health. The Centers for Disease Control and Prevention awarded the Indiana State Department of Health (ISDH) Division of Nutrition and Physical Activity (DNPA) was awarded $530,420 to develop the Community Breastfeeding Support Initiative (CBSI) for a nine-month period. The plan was to identify 13 community-based organizations (CBOs) that will receive funding and technical support for breastfeeding mothers. The goal was to work with the mothers to continue and/or maintain breastfeeding to improve overall breastfeeding rates, especially with breastfeeding women of color. Twelve of the 13 CBOs received $25,000-$35,000 and one CBO received less than $10,000. All 13 sites used the funds to hire personnel, provide professional development, purchase breastfeeding resources and supplies, purchase incentives for breastfeeding mothers, and for marketing tools (Friesen et al. 2015). Many of the CBOs used the grant money to expand or support their services. They provided in-person consultations, home visits, weigh-ins, breastfeeding classes, and other CBOs tried new technology such as video conferencing, forming collaborations with schools, or developing tele-lactation support services with corporations (Friesen et al., 2015). The CBO programs included services in small community hospitals, clinics, and

health centers for nine months for a total of 1,345 women. Although the grant funding in the Indiana State Department of Health provided breastfeeding support for a nine-month period, 12 of the 13 CBOs were able to maintain the breastfeeding support well beyond the nine-month period and are continuing to support the women to date (Friesen et al., 2015).

Breastfeeding Self-Efficacy

Breastfeeding self-efficacy is defined as the confidence in having sufficient knowledge and skills to successfully breastfeed your infant. Although many women who claim to have the knowledge and may seem prepared to breastfeed when they are pregnant, once the infant is delivered they do not seem to master the skills needed to successfully breastfeed and without the support they discontinue breastfeeding sooner than expected.

Ertem and his colleagues completed a study in (2001), which focused on 64 breastfeeding women enrolled in the WIC program in inner-city Connecticut. The purpose of the study was to identify the predictors of early discontinuation of breastfeeding. Data was collected by interviewing the women within 48 hours after delivery and then again at one and two weeks postpartum. The WIC charts were then reviewed at two and four months postpartum. The breastfeeding women were asked a series of questions about their knowledge, beliefs, attitudes, and problems regarding their breastfeeding experience. Although most mothers (95.3%) reported that they wanted to breastfeed up to six months, (45.3%) stated that the chances of them continuing to breastfeed after two months was low (Ertem et al., 2001). Results of the study showed

that (26.6%) of the mothers discontinued breastfeeding during the first week; the second peak of discontinuance occurred during week two when another (32.1%) stopped breastfeeding; then by two months (77.4%) stopped and by four months (88.2%) stopped breastfeeding (Ertem et al., 2001). The results of this study showed that the focus of providing women enrolled in the WIC program with information to increase their breastfeeding knowledge needs to shift to enhancing their self-confidence so that they can continue to breastfeed their infant longer.

A study that was completed by Rodrigues and her colleagues (2015), although completed in Brazil, showed that women who have low levels of confidence in their ability to breastfeed will discontinue in the first week after delivery. The average age of the women in this study was 26.4 years old, (67.1%) were unemployed, and (74.5%) had other children. The researchers used the Breastfeeding Self-Efficacy Scale to measure the 322 mothers' confidence levels in regards to breastfeeding. The results showed that he mothers stated that they had a high and average level of breastfeeding self-efficacy meaning that they felt confident in their ability to breastfeed. The women age 20 years old or older were more likely to have higher breastfeeding self-efficacy than younger mothers and mothers with more than one child had greater self-efficacy than those with no other children (Rodrigues et al., 2015).

In a recent study completed in the U.K., researchers developed a breastfeeding assessment tool to be used by midwives, lactation consultants, and breastfeeding counselors to identify possible barriers to successful breastfeeding (Ingram et al., 2015). The researchers worked with five infant feeding experts to develop the tool and focused

on five main elements: (a) positioning; (b) attachment; (c) sucking; (d) swallowing; and (e) comfort. Using the elements, the mother was given a score in each area of the five elements from "0" being poor, "1" being moderate, or "2" being good. The researchers recruited 112 mother-infant pairs and the feeding experts assessed 106 breastfeeds and documented 218 questions from the mothers. Results from this study showed that the midwives and counselors who used this tool, the Bristol Breastfeeding Assessment Tool (BBAT), showed a strong correlation with breastfeeding self-efficacy (Ingram et al., 2015). This study is an example which proves that the more confident and effective a woman is in her breastfeeding technique, the more confident she will be to continue breastfeeding which results in longer duration.

Breastfeeding Barriers

The Baby Friendly Hospital Initiative's *Ten Steps to Successful Breastfeeding* lists ten crucial steps for hospitals to follow in order to attain BFHI status, the "gold standard" of care. Step number 10, "Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic," is the only step that the hospital staff cannot control once the mother and her infant leave the hospital. When a mother experiences an issue with breastfeeding but is no longer in the hospital, she must rely on other sources. It is at this point when the breastfeeding mother must have a strong support system.

Lack of Support. The lack of support for low-income breastfeeding women during the initial period after leaving the hospital makes it difficult for them to continue to breastfeed. Research has documented that there is very little support for low-income

women who chose to breastfeed once they leave the hospital (Cross-Barnet et al., 2012; Flood, 2013; & Flower, 2008). This research study focused on the importance of how WIC postpartum breastfeeding women can continue to breastfeed their infants with the collaborative support efforts of both the medical professionals and the members of her community. The women enrolled in the WIC program are particularly vulnerable and need continued support from both the health care professional team and the community WIC program (Cross-Barnett et al., 2012). The results of this research study could help contribute to better evidenced-based training for medical professionals, including WIC staff and health care providers working together to increase breastfeeding awareness within the community. This behavior change could lead to increased breastfeeding duration within the WIC community.

A study by Lutenbacher, Karp, and Moore, (2016) found that there are challenges for some women that health care professionals seem to overlook. In this study, the researchers focused on 16 black women to understand the factors that influence their feeding choice. The women were selected from a WIC office in Tennessee, participated in a focus group, and completed a 90 minute interview about their experiences. The questions focused on people, beliefs, and traditions in the black community that had an impact on their pregnancy and decision about how to feed their infant (Lutenbacher et al., 2016). Results from the study showed that (37.5%) said that they were the most influential person who would decide how to feed their infant; (18.7%) identified the infant's father as being the most influential person in making their feeding decision; (12.5%) said their mother or a friend was most influential; and (6.0%) reported that a

cousin or Jesus was the most influential person in making the decision on how to feed their infant (Lutenbacher et al., 2016). A unique finding in the study that the researchers were surprised to hear was the women in this study reported that they were discharged home from the hospital without a plan to address their needs which limits their success and ability to breastfeed. The women reported that some hospitals offered home visits by a nurse or lactation consultant, but it was not affordable (Lutenbacher et al., 2016).

Lack of Understanding of the "Ten Steps." In reviewing the research about Baby Friendly Hospitals, key informants revealed misunderstanding some of the *Ten Steps*. A study completed by Taylor et al., (2012), showed that all *Ten Steps* were not fully understood by those who were trying to implement them. In this study, a Global Breastfeeding-Friendly Healthcare Project was developed in the State of North Carolina to support the *Ten Steps* in a set of hospitals that serve low-income populations. According to the article, the purpose of the project was to increase breastfeeding initiation, exclusivity, and duration by supporting hospitals to make improvements in the quality of breastfeeding support services by implementing the *Ten Steps* (Taylor et al., 2012). Hospitals participating were systematically assigned to one to two treatment groups and were studied through two phases- phase one (2009-2010) and Phase two (2010- 2011). During phase one, hospitals carried out baseline data collection, hospital characteristics, and feedback, and received the intervention and during phase two the hospitals received modified intervention based on lessons learned during the first phase. Information about implementing all ten steps was collected and found that much of the confusion and incorrect data collected was due to the misunderstanding of some of the

Ten Steps of Successful Breastfeeding, more specifically to step number 10, "Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or clinic." However, when asked about the support provided at discharge, hospital staff was not able to identify any support other than the on-staff IBCLC (Taylor et al., 2012).

Lack of Compliance to the "Ten Steps." A study completed by some of the same researchers, Nickel, Labbok, Hudgens, and Daniels, (2013) just one year later found that many hospital staff, although they were aware and trained on the *Ten Steps to Successful Breastfeeding*, were not in compliance with many of the steps. In this study, data taken from the Infant Feeding Practices Study II, a national longitudinal study of women conducted by USDA and CDC that tracked a 1,304 sample of women in their third trimester of pregnancy through one year postpartum and questioned every two months (Nickel et al., 2013). The survey questions were constructed to include variables of demographics and to answer questions related to each of the steps of the *Ten Steps of Successful Breastfeeding.* The results of this study showed that almost (90%) of the women reported a lack of step six, "Give newborn infants no food or drink other than human milk, unless medically indicated;" and (69%) did not practice step 9, "Give no artificial pacifiers to breastfeeding women;" and (33%) did not practice step 4, "Help mothers initiate breastfeeding within the first hour after birth," all of which contribute to low breastfeeding rates (Nickel et al., 2013). Although this is a study with a small sample of women and the data is self-reported, it showed that hospital staff's non-compliance of

the *Ten Steps to Successful Breastfeeding* can have a significant impact on the woman and her confidence and commitment to breastfeed.

Supplemental Formula Usage. Women who are breastfeeding their infants need to refrain from using any supplemental formula for at least the first 30 days so that she can build her milk supply. A study completed by Sriraman and Kellams (2016) provided health care professionals with information that leads to barriers to successful breastfeeding, including the use of supplemental formula. In this study, breastfed newborns lost more than ten percent of their birth weight within 48 hours of birth when given supplemental formula too soon. However, when examined more closely it was found that the newborns were delivered by cesarean section and the amount of weight loss was inconsistent with the guidelines. This study showed that a longer period of observation without the use of supplemental formula could have been sufficient enough to allow the mother to continue to exclusively breastfeed without the use of formula (Sriraman & Kellams, 2016). In this case, the researchers determined that the use of supplemental formula was a barrier to successful breastfeeding.

Summary and Conclusions

Although breastfeeding education and support has always been given in the WIC program in Philadelphia women enrolled on the program do not choose to breastfeed very long. Having a support system once a woman leaves the hospital impacts the feeding decision of the new mother. The decision for feeding an infant should not be taken lightly and should be made by the new parent's taking into consideration their support system.

Research has shown that a woman's decision to breastfeed is influenced by the people closest to her and she will discontinue breastfeeding sooner if they persuade her to do so (Kervin, Kemp, & Pulver, 2010). Research also showed that first time mothers enrolled in WIC are significantly more likely to try to breastfeed when supported by hospital staff and if they are provided the opportunity to breastfeed in the hospital (Ma & Magnus, 2012). For this reason, it important that health care providers, community organizations such as WIC, other support groups where the breastfeeding woman participates brings her support system along with her so that everyone is aware of her feeding plan. A successful breastfeeding experience is one that continues to provide nutrition for the infant, meets the Healthy People 2020 goals, and facilitates the mother-child bond for as long as possible with the support of her community partners and her health care team to help achieve her goals.

Chapter 3 gives a detailed description of the research design, including the setting, the sample population, the inclusion and exclusion criteria, the materials, the description of the variables, the collection method, and data analysis that was used in the study. The study guidelines were developed from the research questions and hypotheses that were discussed previously. Chapter 4 will summarize the results from the research study and provide data on the techniques used to test the hypotheses. Chapter 5 will discuss the research findings and give recommendation for further research and implications for social change.

Chapter 3: Research Method

Introduction

The research problem in this study was the lack of knowledge about breastfeeding support for women once they leave the hospital. Studies have shown that breastfeeding women will not continue to breastfeed if they do not have confidence or lack a strong support system at home (Kervin, Kemp, & Pulver, 2010). This is shown in the inconsistent breastfeeding duration rates seen in the Philadelphia WIC program over the past 10 plus years in spite of the many promotion and support resources in the Philadelphia WIC community.

I based the research questions in this study on the problem statement in Chapter 1. The research questions and hypotheses are listed in Table 3.

Table 3

Quantitative Research Questions

Number	Question	Alternative hypothesis	Null hypothesis
RQ 1	How did the prenatal education given by your medical provider influence your decision to breastfeed?	The prenatal education given by the medical provider had a statistically significant influence on the decision to breastfeed.	The prenatal education given by the medical provider had no influence on the decision to breastfeed.
RQ 2	How did the prenatal education given at the WIC office influence your decision to breastfeed?	The prenatal education given at the WIC office had a statistically significant influence on the decision to breastfeed.	The prenatal education given at the WIC office had no influence on the decision to breastfeed.
RQ 3	How did the experience of skin-to-skin breastfeeding at the hospital at delivery influence your decision to breastfeed?	The experience of skin-to-skin at the hospital at delivery had a statistically significant influence on the decision to breastfeed.	The experience of skin-to-skin at the hospital at delivery had no influence on the decision to breastfeed.
RQ 4	How did the postpartum education given at discharge influence your decision to breastfeed?	The postpartum education given at discharge had a statistically significant influence on the decision to breastfeed.	The postpartum education given at discharge had no influence on the decision to breastfeed.
RQ 5	How did the postpartum education given at the WIC office influence your decision to breastfeed?	The postpartum education given at the WIC office had a statistically significant influence on the decision to breastfeed.	The postpartum education given at the WIC office had no influence on the decision to breastfeed.
RQ 6	How did the postpartum education given by your medical provider influence your decision to breastfeed?	The postpartum education given by the medical provider had a statistically significant influence on the decision to breastfeed.	The postpartum education given by the medical provider had no influence on the decision to breastfeed.
RQ 7	Which of the variables is t best predictor of increasec breastfeeding duration?	There was a variable that had a statistically significant influence on the decision to breastfeed.	There were no variables that had an influence on the decision to breastfeed.

The overarching qualitative research question was, how do women enrolled for WIC benefits describe the experience of choosing a feeding method for their infants? The sub questions were, as follows:

- a. What is the impact of the prenatal breastfeeding education that the woman received from her medical provider and her infant feeding decision?
- b. What is the impact of the prenatal breastfeeding education that the woman received at the WIC office and her infant feeding decision?
- c. What is the impact of the breastfeeding education that the woman received at the hospital at delivery and her infant feeding decision?
- d. What is the impact of the postpartum breastfeeding education that the woman received at discharge and her infant feeding decision?
- e. What is the impact of the postpartum breastfeeding education that the woman received from her medical provider and her infant feeding decision?
- f. What is the impact of the postpartum breastfeeding education that the woman received at the WIC office and her infant feeding decision?
- g. What is the impact of the postpartum breastfeeding support that the woman received from family and friends and her infant feeding decision?
- h. What is the impact of the postpartum breastfeeding support that the woman received from lactation resources and her infant feeding decision?
- i. What is the impact of the woman's breastfeeding self-efficacy and her infant feeding decision?

Setting

I conducted this research study at the WIC offices in the City of Philadelphia, Pennsylvania. The WIC offices are operated by a nonprofit agency located in an urban setting in the southeastern part of Pennsylvania. Each of the WIC offices are free-standing, full-time offices that operate 5 days per week and offer breastfeeding promotion, support, and counseling as a regular part of WIC services to all prenatal and postpartum, breastfeeding women.

The target population for this research study were (a) a postpartum, breastfeeding woman; (b) who was at least 18 years of age at the time of delivery; (c) a woman who had a vaginal birth at a Philadelphia hospital who was enrolled in the WIC Program during her pregnancy; (d) a woman who delivered an infant weighing at least 5 pounds 5 ounces; and (e) who was discharged from the hospital at the same time as the postpartum, breastfeeding mother without any health conditions.

The City of Philadelphia, Pennsylvania, is a large, urban city of 1.56 million people as of 2015 (United States Census Bureau, 2015). Although there are many hospitals of various sizes in the Philadelphia area and the surrounding counties near the city, there are only six hospitals within the city limits with medical facilities that deliver infants. The Pennsylvania Department of Health invited the six delivery hospitals to apply for the Pennsylvania Department of Health Breastfeeding Stimulus Grant. All six hospitals received the grant and planned to use the money in various ways; five of the six attained Baby-Friendly certification (Table 4).

Table 4

Philadelphia Delivery Hospitals and BFHI Status

Hospital	Date Received BFHI Certification
Albert Einstein	May 2018
Hospital of the University of Penn	November 2015
Pennsylvania Hospital	November 2015
Temple University	March 2018
Thomas Jefferson	August 2016
Hannheman/Drexel University	Did not receive certification

Note: Adapted from "Find a Baby Friendly facility," Baby-Friendly, USA, Inc. (2010).

Although Hannheman/Drexel University Hospital did not attain BFHI certification, the hospital administration decided to participate in the Pennsylvania-supported Keystone Ten Breastfeeding Initiative. In a recent letter requesting support, Hannheman/Drexel University Hospital leaders announced that they are planning to apply for Baby Friendly certification in the near future in 2019.

Research Design and Rationale

I based the theoretical framework used in this embedded, explanatory mixed-method study on SCT. I used this theory to describe the relationship between the independent variables (breastfeeding support systems and breastfeeding education) and the dependent variable (WIC breastfeeding duration rates). The phenomenological research method was used to explain the lived experience of women enrolled for WIC benefits in the WIC program in Philadelphia, Pennsylvania, and is discussed in Chapter 3. This chapter includes information on the research design, the setting and sample size,

the research instrument and materials, a description of the variables, data collection, and ethical considerations.

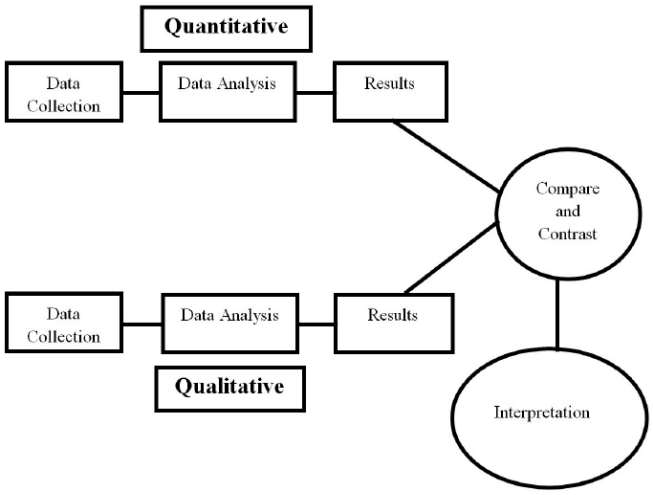

Figure 7. Mixed Methods Design. From "Research design: qualitative, quantitative, and mixed methods approaches," by J.W. Creswell, 2014.

As Creswell explains, the explanatory, embedded design is appropriate for this study because the quantitative data is collected first, analyzed and then the qualitative data collected builds upon the qualitative results in an attempt to explain the results (Figure 7). An embedded design of the mixed method involves the convergent use of the data but the underlying idea is that one type of data, either quantitative or qualitative, is embedded within a larger design and the data sources play a supporting role in the overall design (Creswell, 2014).

In this research study the qualitative data collected through surveys and interviews of the WIC postpartum breastfeeding women, the qualitative data, is the embedded data that played a supporting role in the quantitative data collected through the

Quick WIC computer of the historical WIC breastfeeding duration. For this research study the explanatory, embedded mixed methods design was appropriate because I had assumption that the quantitative data alone cannot explain. The study began with the survey to generalize the results and then focused on open-ended interviews to gain a more complete understanding of the problem or experience to support the quantitative findings. In this research study, the qualitative data gained from the WIC postpartum breastfeeding women and their lived experiences, helped to explain the history of low WIC breastfeeding duration rates in the City of Philadelphia, PA. Other designs would have been less effective because the researcher would not be able to collect both quantitative (survey and breastfeeding duration data) and qualitative data (open-ended interview data) sequentially and in one study.

A mixed methods concurrent, embedded study design was chosen for this study, which consisted of two phases: the quantitative method phase which was ideal for measuring known phenomena and central patterns of association, and the qualitative method phase which allowed for identification of previously unknown processes, explanations of why and how phenomena occur, and provides the range of their effects. In the quantitative phase, the researcher collected and analyzed the quantitative (numeric) data. The qualitative (text) data was then collected and measured. The data measured concurrently addressed the research questions pertaining to the association between the breastfeeding duration of women enrolled for WIC benefits (dependent variable) and: (a) the prenatal breastfeeding education the woman received from her medical provider (independent variable); (b) the prenatal breastfeeding education the woman received at

the WIC office (independent variable); (c) breastfeeding education the woman received at the hospital at delivery (independent variable); (d) the postpartum breastfeeding education the woman received at discharge (independent variable); (e) the postpartum breastfeeding education the woman received from her medical provider (independent variable); (f) the postpartum breastfeeding education the woman received at the WIC office (independent variable); (g) the postpartum breastfeeding support the woman received from family and friends (independent variable); (h) the postpartum breastfeeding support the woman received from lactation resources (independent variable); and (i) the woman's breastfeeding self-efficacy (independent variable).

The intentional merging of both quantitative and qualitative data is the basic underlying process of the mixed methods approach. The integration of the data in an embedded mixed methods research plan was intentionally combined rather than kept separate, as displayed in Figure 7. The basic concept of mixed methods research is that the combination of the data maximized and strengthened the study and minimized the weaknesses of each of the individual types (Creswell, 2014). The concurrent, embedded design chosen for this research is characterized by the collection and analysis of quantitative data at the same time as the collection and analysis of qualitative data. The purpose was to use qualitative results to assist in explaining and interpreting the findings of a quantitative study (Creswell, 2014). According to Creswell (2014), this method has a two phase design; the qualitative data is collected first to allow for the researcher to develop an instrument or tool such as a survey, or to identify variables. When using an explanatory design, the research questions need to attempt to answer the question, "In

what ways do the qualitative data help to explain the quantitative results?" When using an embedded design, the research questions must also attempt to answer the research question, "How do the qualitative findings provide an enhanced understanding of the quantitative results?" Using these two designs together helped to strengthen the result and gave the researcher a better understanding of the lived experiences of the research subjects (Creswell, 2014).

In this study, I used an embedded, explanatory, mixed methods design to understand the lived experience of postpartum breastfeeding women enrolled in the WIC program in Philadelphia, PA. I also attempted to understand the postpartum breastfeeding woman's support system and how it influenced her infant feeding decisions. Finally the study used this embedded quantitative data to explain the impact of the infant feeding choices the women made and how they are reflected in the breastfeeding duration rate in the WIC program in Philadelphia, PA from October 2012 through December 2018. These dates were chosen because five of the six delivery hospitals in Philadelphia were awarded the WIC Breastfeeding Stimulus Grant became effective Federal Fiscal Year 2013 (October 1, 2012 through September 30, 2013).

This study design is also considered a transcendental phenomenological research study. The word, *phenomenology* is derived from the Greek, and one of its meanings is defined as the philosophy that explains being consciousness on the basis of the analysis of observable phenomena (Lichman, 2006). The father of phenomenology was the mathematician Edmund Husserl, who proposed *epokhe'*; a Greek word meaning doubt (Giorgi, 2009). This meaning was later adapted to be the general concept of

phenomenological research and is further explained by having the researcher suppress judgment with regard to ensuring objectivity during data collection and analysis (Giorgi, 2009). More specifically this research study examined the human experiences through the descriptions provided by the WIC participants involved in the study. These experiences are called lived experiences and therefore considered a transcendental phenomenological study, analyzing the essences perceived consciousness with regard to individual experiences (Creswell et al., 2010). A fundamental concept unique to the phenomenological research method is "bracketing." Bracketing is the process in which the researcher deliberately blocks out (or brackets out) their own experience prior to and throughout the study so that it does not influence the participants' understanding of the phenomenon that is being studied (Chan et al., 2013). The use of bracketing allowed me to put aside my own opinions and beliefs of the phenomena being studied so that the research participants' in-depth interview was the main focus. The use of qualitative research in this embedded mixed methods phenomenological approach in this study was to explore and describe the WIC breastfeeding mothers' experiences through a survey and through an interview. The questions focused on the WIC breastfeeding mother's perceived relationship between the WIC breastfeeding duration (the dependent variable) and her support system and breastfeeding self-efficacy (the independent variables) using the social cognitive theory, specifically the four identified constructs of: environment, situation, self-efficacy and reinforcement.

Role of the Researcher

Methodology

Participant Selection Logic

A critical part of a research study is determining sample size. The sample of the research population in the study should be an appropriate size to answer the research questions. In qualitative research the sample size is much smaller than in quantitative research studies. Qualitative samples must be large enough to be sure that all of the important information is uncovered, but not too large that it becomes repetitive. According to Creswell et al., (2011) after the first 12 interviews in qualitative research, there is a point when the sample size no longer contributes to new evidence. This point is referred to as a "point of diminishing return" when increasing the sample size no longer contributes to new evidence. Diminishing return is a problem that is also referred to as data saturation and is a signal to the researcher that the data collection process is now complete. Data saturation is a common problem in the phenomenological research approach and the sample size is usually between 15-25 participants.

The qualitative research phase of this embedded mixed methods study focused on obtaining an in-depth understanding of the lived experiences, or phenomena, of the research subjects. The researcher developed survey questions that centered on the meaning of the "how" and "why" of the process, situation, and social interaction of each breastfeeding mother and her breastfeeding education and support experiences.

In order to determine the sample size needed for this embedded mixed methods study, I used a purposeful sample, more specifically, a convenient sample. I met with

each postpartum breastfeeding mother at the WIC office, introduced myself and began the interview process. The breastfeeding mothers completed a survey and an interview with the researcher. All information collection through surveys and interviews was confidential. The identifying information was coded and stored in a password protected computer and locked filing cabinet. Once the data was analyzed, it was stored and locked where no one will have access except the researcher. All information will be kept and stored confidentially as per the requirement stated by IRB regulations.

A total of 44 postpartum breastfeeding women were interviewed for this research study. However, eight surveys were excluded from analysis because they did not meet the inclusion criteria. The reasons for exclusion of these eight surveys are explained later in Chapter 4. This sample size represented a diverse group of postpartum breastfeeding women from each of the nine WIC offices in Philadelphia, PA. According to Creswell (1998), the process of collecting in-depth interviews in a phenomenological study can be completed with as little as 10 people or with as many as 25 people, but any more than that can lead to overload of information. This is a common problem in qualitative research that is often misunderstood and can lead to repetitive and unnecessary data (Crossman, 2017). The goal of phenomenological qualitative research is to understand the meaning of the individuals who have experienced the phenomena by interviewing small sample sizes (Creswell, 1998).

Instrumentation

Several materials were used for collecting data in this mixed methods research study. Two types of materials to collect quantitative data included: (a) retrospective data

generated from the WIC computer that is referred to as Quick WIC. This data was retrieved from the Quick WIC database reporting system that captures breastfeeding duration from October 2012 through December 2018. This report is based on the number of weeks a woman is reported as breastfeeding and is based on the WIC vouchers she collects. The report is run bi-annually to track breastfeeding duration rates in weeks and is sorted according to WIC office. These data sets were compared to determine if there is a significant difference in duration since the implementation of the BFHI in October 2012 to December 2018; and (b) a survey of the WIC postpartum breastfeeding women which included questions developed to answer the quantitative research questions. These survey questions were developed on a Likert Scale, which is a common research tool used to measure attitudes and emotions in social research (socialresearchmethods.net). The most traditional forms of Likert scales are a five-point scale where a "1" answer is the lowest point, and a "5" is the highest point on the scale. In this research study, the questions that were developed for the survey used a *"1-5 strongly agree to strongly disagree"* scale. Each WIC postpartum breastfeeding woman completed the survey.

The second section of the survey was developed to answer the qualitative research questions listed in chapter 1. This section of the survey included open-ended questions that led to the face-to-face, in-depth interviews. According to Seidman (1998), in-depth interviews allow the researcher to better understand the participants' experiences from their point of view in their own words. The survey asked WIC postpartum breastfeeding women about their infant feeding decisions and breastfeeding education received during their prenatal visits at the WIC office and their prenatal visits at their health care

provider's office. The survey also asked about their breastfeeding experience at the hospital and their breastfeeding sources of referrals given at discharge. Another important topic asked in the survey included questions regarding the sources of breastfeeding support that the woman has and how they affected her decisions to breastfeed her infant. The face-to-face, in depth interviews then expanded on the written answers and I had more of a discussion with each woman about her experience. I took detailed, hand-written notes as the WIC postpartum breastfeeding woman spoke about her experience. The interviews took an additional 20-30 minutes and the discussion was led by the woman. The Quick WIC computer also has a section called "Comments" where the professional staff can document notes specific to the WIC participant's education and counselling. I reviewed this section for important discussion topics for follow up and added notes important to the survey and research. All data collection began on November 21, 2018 and ended on January 16, 2019. A packet for each participant was created and stapled together. The surveys were reviewed and tallied in a computer spreadsheet. The results were saved and locked in a file that only the researcher had access.

I identified two similar surveys (Asiodu, 2014; Preston, 2004) that had been used in nursing projects and requested approval to replicate several of these questions for the current research study. Approval was received from the original researchers (Appendix C). The survey was modified and included for Walden IRB approval. IRB approval was granted on November 20, 2018 – Approval number 11-20-180126199. The researcher also submitted a request to the Pennsylvania Bureau of WIC Director to use WIC breastfeeding duration reports and received approval to use WIC data (Appendix D).

Description of variables. The data collected via the Quick WIC breastfeeding duration rate reports and the WIC postpartum breastfeeding women's survey results are the dependent variables in this research study because they could not be determined and were not predictable. The independent variables in this research study were the variables that were included in the qualitative phase of the research study. The research questions were constructed with the independent variables in mind, they included: (a) the prenatal breastfeeding education the woman received from her medical provider (independent variable); (b) the prenatal breastfeeding education the woman received at the WIC office (independent variable); (c) the experience of skin-to-skin breastfeeding at the hospital at delivery (independent variable); (d) the postpartum breastfeeding education the woman received at discharge (independent variable); (e) the postpartum breastfeeding education the woman received from her medical provider (independent variable); (f) the postpartum breastfeeding education the woman received at the WIC office (independent variable); (g) the postpartum breastfeeding support the woman received from family and friends (independent variable); (h) the postpartum breastfeeding support the woman received from lactation resources (independent variable); and (i) the woman's breastfeeding self-efficacy (independent variable). It was assumed that the medical providers, the WIC staff, and the breastfeeding lactation professionals were providing evidence-based breastfeeding education that was consistent and standard.

Procedures for Recruitment, Participation, and Data Collection

The recruitment method used for this embedded, explanatory mixed methods study was based on a convenient sampling strategy. The researcher scheduled time at

each of the eight of the nine WIC offices to meet with the WIC women in person to recruit for the study. One WIC office was not included in the research study due to the participant caseload of mostly infants. When the women arrived for their return WIC appointment, the researcher introduced herself, explained the research study, asked the woman if she was interested in participating in the study and obtained a signature on the *Letter of Consent and Confidentiality* form. The postpartum breastfeeding women completed a survey about infant feeding choices and their support system (Appendix E). In addition to the survey, the women were asked to participate in a face-to-face, in-depth interview with the researcher. The interview consisted of a series of open-ended questions that were designed to address each of the independent variables used to develop the qualitative research questions (Appendix F). At the end of the survey and interview, the researcher asked if she could contact the participant if needed.

Inclusion/Exclusion criteria. The inclusion criteria in this study included: (a) a woman who was enrolled on the WIC program throughout their pregnancy; (b) delivered an infant of any race/ethnicity; (c) delivered an infant between October 1, 2016 and December 31, 2018; (d) delivered an infant weighing equal to or more than 5 pounds 5 ounces; (e) delivered an infant vaginally; and (f) breastfed the infant. Exclusion criteria included: (a) the woman was not enrolled on the WIC program during her pregnancy; (b) a woman who delivered an infant during the dates other than the specified date range; (c) delivered an infant at a hospital located outside of the City of Philadelphia; (d) had an infant using infant formula; (e) delivered a premature infant or infant weighing less than

5 pounds, ounces ; (f) delivered a special needs infant; (g) infant or mother remained at the hospital; and (h) delivered the infant via cesarean section.

Data collection procedures. I prepared copies of the three approved surveys--the demographic survey (Appendix G), the Likert quantitative survey (Appendix E), and the open-ended qualitative survey (Appendix F)--for each WIC office location and numbered each survey packet in the upper right-hand corner in order to identify them anonymously.

A schedule of visits to the WIC offices was developed and the supervisory team of each office was notified of when I would be in their office to recruit the women for the study. Beginning November 21, 2018 I arrived at each WIC office as scheduled to speak with and survey interested WIC postpartum breastfeeding women who agreed to share their breastfeeding experience. Because I was not one of the usual staff in the WIC office, some women were hesitant to speak with me. After several attempts of explaining the study and that participating in the study would not affect their WIC participation or WIC benefits, the women started to open up and began speaking about their experiences with breastfeeding.

After explaining the study and obtaining the woman's signature on the *Letter of Consent and Confidentiality* form, the interview started with questions about demographic data. In order to quickly include or exclude study participants, the first question asked was if they participated in the WIC program while they were pregnant. Most of the potential study participants did participate, but if some of them said that they did not participate, the questions continued so that they did not feel that their input was not important. The same process continued throughout the interview for the demographic

question about the hospital of delivery. Both questions, WIC participation while pregnant and hospital of delivery located in Philadelphia, are qualifying inclusion criteria and if the woman answered "no" to either of these questions she would not be included in the study. Although the information obtained from these women is important, the data collected did not answer the research questions. Therefore, the data from these eight women is included in the demographic data, but was excluded from the research study data analysis.

The remainder of the demographic data included questions such as parity, age, race, education, marital status, the name of the hospital where they delivered, if they knew how they were planning on feeding the infant when he/she was delivered, when the decision was made, and if they breastfed while in the hospital. The second phase of the study consisted of qualitative, open-ended questions to determine if infant feeding education was given, if it included breastfeeding education, who gave the education, and when it was given. The open-ended questions were also asked to determine who was supportive of the breastfeeding decision, what outside resources were used to help the woman breastfeed, and what advice the postpartum breastfeeding woman would give to pregnant women after her breastfeeding experience.

The third and final phase of the study process was the completion of a Likert Survey. This survey was designed to determine how strongly various sources such as the education given by the health care provider, by the WIC office staff, or during experiences such as skin-to-skin influenced the woman's feeding decisions. The survey was also developed to evaluate if the time education was given, such as during the

prenatal period, at discharge from the hospital, or during the postpartum time influenced the woman's infant feeding preference. Although the survey and interview process had three distinct parts, the women participating in the study did not seem to know that there were different survey forms that were being completed. The entire survey and interview was more of a conversation and gathering of information rather than an "interview." Most of the women, because they had been on the WIC program and were familiar with questions from the WIC staff, seemed to be comfortable speaking about their childbirth and breastfeeding experiences. As expected, each interview lasted from 20-30 minutes on average. All information was collected and transcribed by hand, no follow up interviews were needed and all postpartum breastfeeding women agreed to be contacted, if necessary. After each interview was concluded the forms were stored in a file and locked in the researcher cabinet until they could be entered into the tally sheet. After all 44 study participants data was collected the information was coded and entered into three tally sheets; one for each type of survey. The only identifying information on the survey is the number (1-44) in the right-hand corner, the WIC office number, and the WIC family ID number that is generated by the WIC computer. In order to find the identity of the woman, a person would need to have WIC computer access. No one, other than me, has access to the study participants' information.

Participation in the research study was voluntary and did not affect WIC participation or the WIC participant's benefits. I requested and received a letter of support and approval from the local WIC director (Appendix H). The approval allowed me to be present in the WIC offices and to interview the WIC participants.

Collection of the second phase quantitative data was accomplished through the WIC Quick statewide computer operating system that generates bi-annual breastfeeding duration reports according to individual WIC office. These data were collected at the WIC office as reported by the WIC postpartum breastfeeding women. The women are seen in the WIC office after the delivery of the infant and at two-month intervals based on their eligibility risk. The historical breastfeeding duration reports were generated by the Quick WIC computer system and were based on WIC checks the woman received. The reports were generated by individual WIC office.

Data Analysis Plan

I used several methods to analyze the data sets. The quantitative data regarding breastfeeding duration were retrieved from the historical breastfeeding duration reports generated by the Quick WIC computer system. The analysis of these data reports included comparing the duration rate prior to the start of the grant period to the duration rate at the end of the research study. The second set of quantitative data came from the Likert scale surveys completed by the study participants. As the surveys were completed, the data from each Likert survey was entered into a Microsoft Excel spreadsheet. I converted the choices a, b, c, etc. into a numerical choice of 1, 2, 3, etc. these answers are the independent variables in the research study. The data was imported into SPSS Student version 25 to be analyzed.

The qualitative data analysis plan was more extensive due to the various responses provided by the study participants. As the study participants were completing the survey, I took notes and entered them into the tally sheet, common themes began to

emerge. I used the phenomenological analysis method, Moustakas (1994) modified version of two methods: van Kaam's method of analysis and Stevick-Colaizzi-Keen's method of analysis (MVKMAP) to analyze the common themes. Using the MVKMAP's seven steps, I identified the submerging themes and sub-themes. A detailed analysis of data is explained in Chapter 4.

Threats to Validity

Issues of Trustworthiness

Trustworthiness is important in qualitative research, which allows the researcher to be confident that the study participants are being truthful. In order to build trust with the participants, I spent time allowing them to talk about their experience. I made sure to maintain eye contact with the participants and made them feel comfortable in their surroundings. There was no pressure placed upon any participant who did not want to answer the questions. The women who participated in the study were open to speaking to me and offered a contact phone number if I needed additional information.

Ethical Procedures

Participation in this research study was completely voluntary with no risk to the WIC postpartum breastfeeding women. The researcher provided information to the potential participants prior to them completing any surveys or to collecting any data so that they can make an informed decision to participate in the study. The research study participant was reminded that they had the right to decline from the study at any point without any repercussions and the withdrawing from the study will not affect their WIC participation or their WIC benefits. All data collected was confidential and any

identifying information of WIC postpartum breastfeeding mothers was kept in a locked file cabinet in a locked office area with no access by anyone other than me. The data will be kept for five years after the research study is completed.

Summary

Chapter 3 provided information about the purpose of this embedded, explanatory mixed method research study. The study was completed to help understand why the WIC breastfeeding duration rates continue to be low with the multiple promotion and support resources offered to postpartum breastfeeding women enrolled in the WIC program in Philadelphia, PA. The quantitative research method of the study focused on the WIC breastfeeding duration measured in weeks from October 2012 compared to December 2018. It was anticipated that the data received from the WIC breastfeeding duration reports (quantitative data) will validate the perceptions as documented by the WIC mothers' breastfeeding experience (qualitative data), or the phenomenological research data collected from the in-depth interviews. The results of the data collection and analysis will be provided in Chapter 4. The interpretation of the results and recommendations for future research will be presented in Chapter 5.

Chapter 4: Results

Introduction

In this chapter, I will report the results of this explanatory, embedded mixed-method research study. The focus of this transcendental phenomenological study was to document the lived experience of breastfeeding mothers, explore the impact of the prenatal education received, and understand the effectiveness of the breastfeeding support experienced by women enrolled in the WIC program in Philadelphia, Pennsylvania. This chapter includes the characteristics of study participants; data analysis and results including the themes that were identified, findings for out-of-county hospital participants, and procedures for handling discrepant and nonconforming data, evidence of trustworthiness; and a detailed summary.

Setting

The recruitment occurred at eight WIC offices in the City of Philadelphia. I had planned to recruit from all 11 WIC offices in Philadelphia. However, I was unable to recruit from three offices. One office has a caseload which is primarily infants and children, and two offices had closed prior to the data collection stage; the WIC participants at these two offices were transferred to the remaining WIC offices at the beginning of the recruitment process.

Demographics

I designed a section of the survey to collect demographic data. I collected data based on the inclusion criteria to determine if the postpartum breastfeeding woman was to be included in the research study. The criteria included (a) enrollment on the WIC

program throughout the pregnancy; (b) delivery at a hospital located in Philadelphia, Pennsylvania; (c) delivery of an infant of any race/ethnicity; (d) delivery of an infant between October 1, 2016, and December 31, 2018; (e) delivery of an infant weighing equal to or more than 5 pounds 5 ounces; (f) delivery of an infant vaginally; and (g) breastfed the infant. The demographic results are displayed in Table 5.

Table 5

Demographics of the Research Study Participants

Demographic	**n=44**	**Percentage**
Participation in WIC during pregnancy		
YES	36	82.0
NO (excluded from study)	8	12.0
Which baby did you most recently deliver?	16	44.4
First	11	30.5
Second	5	13.8
Third	4	11.3
Fourth or more		
Age		
18-25	7	19.4
26-30	20	55.6
31-35	3	08.3
36 and over	6	16.7
Race		
Black	25	69.4
White	2	05.5
Asian	1	02.8
Hispanic	7	19.5
Bi-Racial, Multi-Racial	1	02.8
Other	0	0.0
Education Level		
Less than High School graduate	3	08.3
High School graduate	21	58.3
Some college completed	6	16.7
College graduate	5	13.9
Some graduate school completed	0	00.0
Graduate school completed	1	02.8

(table continues)

Marital Status		
Married	5	13.9
With the baby's father, not married	19	52.8
Married, not with the baby's father	0	0.0
Not with the baby's father	5	13.9
Prefer not to answer	7	19.4
Hospital of Delivery		
Albert Einstein	9	25.0
Hahnemann/Drexel University	5	13.9
Hospital of the University of Penn	10	27.8
(HUP)	5	13.9
Pennsylvania	4	11.1
Temple University	3	08.3
Thomas Jefferson	6	
Other (excluded from study)		
Did you know how you wanted to feed your baby when you delivered him/her?	35	97.2
YES	1	02.8
NO		
When did you decide on how you were going to feed your baby?		
When I was pregnant	33	92.0
At delivery	0	00.0
While I was at the hospital	1	02.8
Someone else decided for me	0	00.0
I cannot remember	2	05.2
Did you breastfeed when you were in the hospital?	34	94.4
YES	2	05.6
NO		
If NO, why not?		
• Latch Issues; Nothing was coming out		

Of the 44 WIC postpartum breastfeeding women identified, eight women were excluded from the study. Six postpartum women did not deliver their infants at a hospital located in Philadelphia. The hospitals they reported were located just over the City or County line and were not part of the inclusion criteria. Another postpartum woman who was excluded from the research study was not enrolled on the WIC program during her pregnancy. The last woman to be excluded was pregnant at the time of the data

collection. The woman who was currently pregnant had been on the WIC program as a breastfeeding woman in 2012 and was pregnant with her eighth child. These three participants did not meet the inclusion criteria of this research study. Although I interviewed the eight women while they were at the WIC office, I did not include the data collected from them in the study analysis.

The demographic data in this study showed that of the 36 participating women, most of them (44.4%) were having their first baby; a large percentage of them (30.5%) were having their second child while 13.8% stated that they were having their third child and 11.3% were having their fourth child or more. Most of the women (55.6%) were between the ages of 26-30; many (19.4%) were 18-25 years old; 16.7% were 36 years old or older; and 8.3% were 31-35 years old. The racial breakdown of the data showed that the majority of the women participating in the research study (69.4%) were Black; 19.5% were Hispanic; 5.5% of the participants were White; 2.8% were Asian; and 2.8% reported their race as biracial or multiracial. Regarding educational level, 54.3% of participants reported being a high school graduate, 16.7% reported some college completed, 13.9% reported being a college graduate, 8.3% reported being less than a high school graduate, and 2.8% reported completing graduate school. The data showed that 50.8% of the women were with the baby's father but not married, 19.4% preferred not to answer, 13.9% were married, and 13.9% were not with the baby's father. Almost all of the study participants (97.2%) knew how they wanted to feed their baby at the time of delivery; 92.0% decided on how to feed their baby while they were pregnant; 5.2% could not remember; 2.8% decided while they were in the hospital; and 94.4% of them breastfed

their baby while they were in the hospital. The two participants who did not breastfeed while they were in the hospital said the reasons for not breastfeeding were because of "latch issues and nothing was coming out."

Table 6

Descriptive Statistics of the Raw Quantitative Data

Variable	*N* Statistic	Minimum	Maximum		Mean
	Statistic	Statistic	Statistic	Statistic	Std. Error
Participant Number	36	1	36	18.50	1.756
Breastfeeding Duration	36	2.00	57.21	21.27	2.8266
Prenatal BF education received from the Medical Provider	36	1.0	4.0	2.22	0.139
Prenatal BF education received at the WIC office	36	1.0	3.0	1.61	0.121
The experience of Skin-to-Skin BF at the hospital at delivery	36	1.0	4.0	1.78	0.127
The postpartum BF education the woman received at discharge	36	1.0	4.0	2.33	0.120
The postpartum BF education the woman received at the WIC Office	36	1.0	4.0	1.69	0.125
The postpartum BF education the woman received from her Medical Provider	36	1.0	4.0	2.33	0.120

I created the content for Table 6 by entering the data by hand into a Microsoft Excel spreadsheet and importing it into SPSS version 25 Student Edition to analyze. I converted the answers listed on the participant's Likert survey listed as choices a, b, c, etc. into a numerical choice of 1, 2, 3, etc. these answers are the independent variables in the research study. To determine the duration in weeks, the researcher reviewed the WIC participant file and noted the date of delivery and after speaking with the breastfeeding women determined if she was still breastfeeding or noted the date when she stopped breastfeeding. If the woman was still currently breastfeeding, the duration ending date was listed as the current date and a note was documented that she was still breastfeeding the infant. The data was entered into the Excel spreadsheet and imported into SPSS Student version 25 to calculate the descriptive statistics. Of the 36 WIC postpartum breastfeeding women in the research study, 24 (66.6%) were still breastfeeding their infants at the time of the survey.

Data Collection

The target sample size was 30 postpartum breastfeeding women. A total of 44 WIC postpartum breastfeeding women participated in the research study. Eight participants were excluded from the study after speaking to them and learning that they did not meet the inclusion criteria. The recruitment process began on November 21, 2018 and ended on January 16, 2019.

Data Analysis and Results

The research questions and the interpretation developed during data collection serve as the key source in organizing data analysis (Creswell, 1998). Because this was a

mixed methods study, several methods were used to analyze the data. The quantitative data was collected from the QuickWIC computer data breastfeeding duration bi-annual report for each WIC office from October 2012 through December 2018. These dates were chosen because the six delivery hospitals in Philadelphia were awarded the WIC Breastfeeding Stimulus Grant became effective Federal Fiscal Year 2013 (October 1, 2012 through September 30, 2013). These data will be tracked and analyzed for trends.

The breastfeeding duration for Philadelphia County's WIC program versus Pennsylvania State Bureau of WIC from federal fiscal year 2010 through 2018 is shown in Figure 8. In fiscal year 2010, the duration rates seemed to be almost equal at approximately 15.0 weeks. The breastfeeding duration in Philadelphia County's WIC program continued to drop, even after the stimulus grant became effective in 2012. The duration for Philadelphia County's WIC program hit an all-time low in 2016 at 9.4 weeks and then began to pick up gradually to where it is now at 15.7 weeks. While the duration rates for the state of Pennsylvania dropped slightly in 2012, down from 16.7 to 14.4 weeks. However, the Philadelphia County's WIC program 2013 duration began to increase from 14.7 to where it is now at 15.7 weeks in 2018 (Pennsylvania QuickWIC Data Reports, 2005-2018).

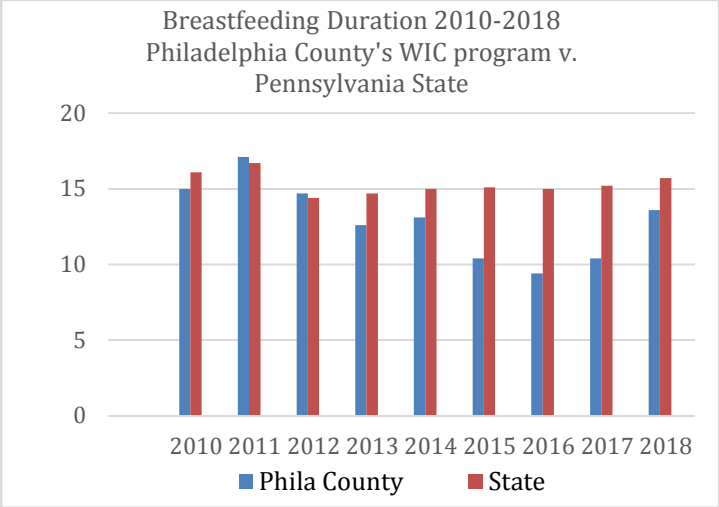

Figure 8. Breastfeeding duration from 2010 through December 2018 (Pennsylvania Quick WIC Data Reports. 2010-2018).

Geographic Information Systems (GIS) Mapping Analysis

The breastfeeding data is reported on each WIC office geographical location throughout the city and was analyzed by using the Geographic Information Systems (GIS) Mapping software. This GIS mapping software is often used to make features easier to identify on a map, quicker to find locations within a specified radius of a point, or easier to get to a points or boundaries in a city (Caliper Corporation, 2018). In addition, GIS mapping allows the researcher to customize the data to show population classifications, or "hot spots" in the forms of maps to show features such as maps of the WIC caseload in certain geographic locations where support is needed based on caseload trends. In Figure 9 a map displays the results from this data analyzed in GIS mapping that is used to show the proximity of the WIC office to the nearest delivery hospital in the City of Philadelphia, PA.

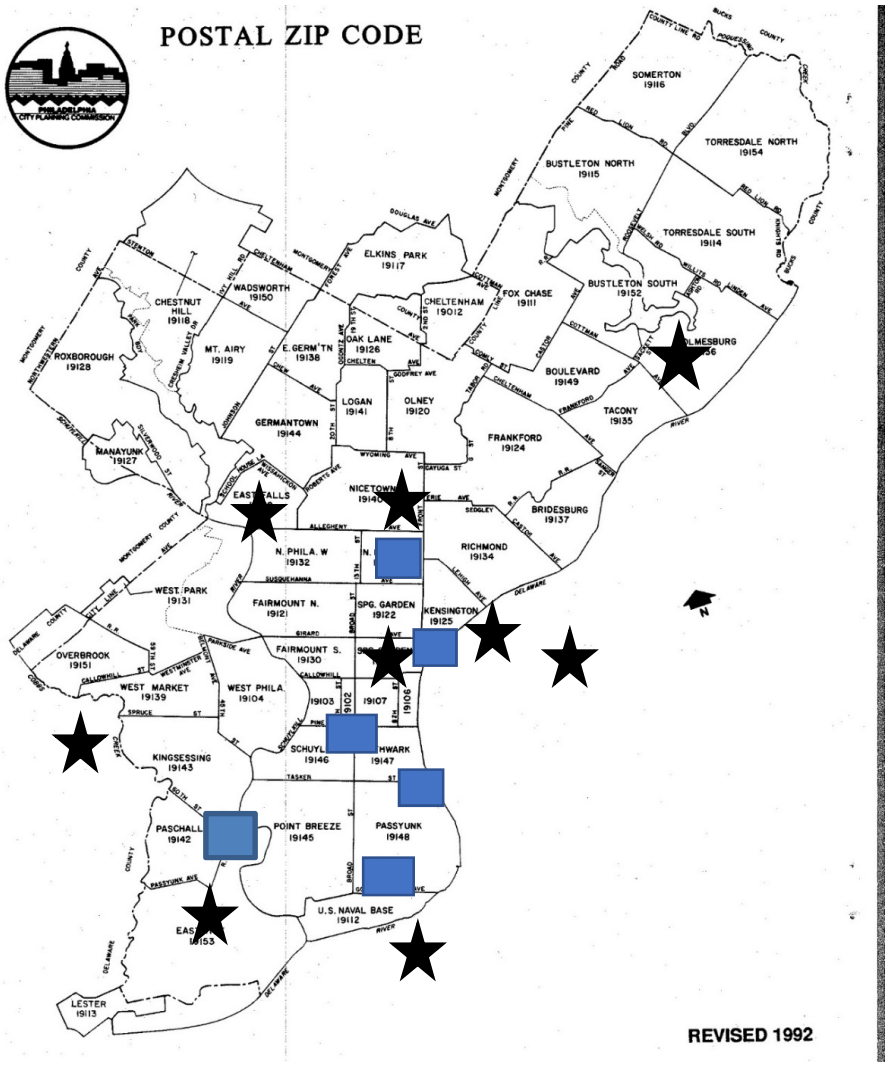

Figure 9. Map of the City of Philadelphia and the WIC offices and delivery hospitals. From "Philadelphia Map with Zip Codes. (www.lahistoriaconmapas.com)

The map of the neighborhoods of the City of Philadelphia, PA is displayed in Figure 9. The people of Philadelphia represent many cultural and ethnic backgrounds and

this can be found throughout the various sections of the wide-spread city. As the map shows, the sections from the far northeast to the lower southwest of the map, the City of Philadelphia covers 142.59 of square miles (United States Census Bureau, 2015). One of the concerns of prenatal women in Philadelphia over the past 10 years has been the limited number of hospitals that deliver infants. Some women have had concerns, especially those who live closer to the county lines, about the transportation issues a mother may face at the time she is in labor and her getting to a hospital in time to deliver her infant. For this reason, some women have been choosing to seek prenatal care in surrounding counties rather than travel to the city.

The black stars on the map shows the locations of the nine WIC offices located within the city of Philadelphia, PA that were used as the setting for the research study. The blue squares on the map are the locations of the delivery hospitals in Philadelphia, PA.

Quantitative Data Analysis Methods

Quantitative analysis: Spearman correlation. The Spearman's rank correlation or Spearman's rho, named after Charles Spearman and often denoted by the Greek letter ρ (rho) or as r_s, is a nonparametric measure of rank correlation (statistical dependence between the rankings of two variables). It asses how well the relationship between the two variables can be described using a monotonic function (Shier, 2004). Spearman's correlation measures the strength and direction of the association between two ranked variables. Most research uses the Pearson correlation coefficient to explain linear relationships, Spearman's correlation assess monotonic relationships (whether linear or

not). If there are no repeated data values, a perfect Spearman correlation of +1 or -1 occurs when each of the variables is a perfect monotone function of the other (Shier, 2004).

A monotonic relationship is a relationship that does one of the following: (a) as the value of one variable increases, so does the value of the other variables; or (b) as the value of one variable increases, the other variable value decreases (Shier, 2004). Spearman's correlation measures the strength and direction of monotonic association between two variables. Monotonicity is "less restrictive" than that of a linear relationship (Shier, 2004).

However, in this research study the researcher expected that the variables studied will closely be related to more of a monotonic relationship and will be reflected as such when plotted. The researcher used the Spearman Correlation to measure the strength of the relationship of the dependent variable (WIC breastfeeding duration) and the impact of each of the independent variables: (a) the prenatal breastfeeding education the woman received from her medical provider, (b) the prenatal breastfeeding education the woman received at the WIC office, (c) the experience of skin-to-skin breastfeeding at the hospital at delivery, (d) the postpartum breastfeeding education the woman received at discharge, (e) the postpartum breastfeeding education the woman received at the WIC office, and (f) the postpartum breastfeeding education the woman received from her medical provider. The results of each of these data sets are displayed in Tables 7 through 17.

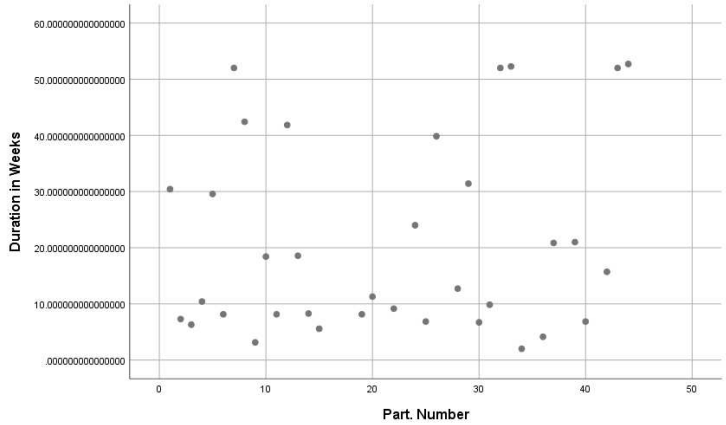

Figure 10. The monotonic relationship of WIC breastfeeding women and breastfeeding duration in weeks.

The scatterplot shows the monotonic relationship of WIC breastfeeding women and the breastfeeding duration in weeks (Figure 10). The monotonic relationship of the variables verifies the use of the use of the Spearman rank-order correlation coefficient.

Table 7

The Correlation Results Between the Breastfeeding Duration and the Prenatal Education Given by the Health Care Provider and the Influence on the Feeding Decision.

Correlation Coefficient Rs Value		0.2623
BF Duration	Sig. (2-tailed)	0.121092
	N	36
Education given at Health care Provider	Df	34

Research Question 1. How did the prenatal education given by your medical provider influence your decision to breastfeed?

Hypothesis 1: The prenatal education given by the medical provider had a statistically significant influence on the decision to breastfeed.

This hypothesis was not accepted because the correlation coefficient (r_s) result of 0.2623 showed that there was a weak relationship between the breastfeeding duration and the influence of prenatal education given by the health care provider on the decision to breastfeed (r_s value was in the range of 0.20-0.39). The *p* value for r_s was 0.12 ($p > 0.01$) which means that the hypothesis cannot be accepted.

Table 8

The Correlation Results Between the Breastfeeding Duration and the Influence of Prenatal Education Given at the WIC Office and the Influence on the Feeding Decision.

Correlation Coefficient Rs Value		0.2255
BF Duration	Sig. (2-tailed)	0.185935
	N	36
Education given at WIC Office	Df	34

Research Question 2. How did the prenatal education given at the WIC office influence your decision to breastfeed?

Hypothesis 2. The prenatal education given at the WIC office had a statistically significant influence on the decision to breastfeed.

This hypothesis was not accepted because the correlation coefficient (r_s) result of 0.2255 showed that there was a weak relationship between the breastfeeding duration and the influence of prenatal education given by WIC office on the decision to breastfeed (r_s value was in the range of 0.20-0.39). The *p* value for r_s was 0.185 ($p > 0.01$) which means that the hypothesis cannot be accepted.

Table 9

The Correlation Results Between the Breastfeeding Duration and the Experience of Skin-to-Skin Breastfeeding at the Hospital at Delivery and the Influence on the Feeding Decision.

Correlation Coefficient Rs Value		-0.0921
BF Duration	Sig. (2-tailed)	0.592717
	N	36
Experience of Skin-to-Skin at the Hospital	Df	34

Research Question 3. How did the experience of skin-to skin at the hospital at delivery influence your decision to breastfeed?

Hypothesis 3. The experience of skin-to-skin at the hospital at delivery had a statistically significant influence on the decision to breastfeed.

This hypothesis was not accepted because the correlation coefficient (r_s) result of -0.0921 showed that there was no relationship between the breastfeeding duration and the influence of prenatal education given by WIC office on the decision to breastfeed (r_s value was in the range of 0.00-0.19). The p value for r_s was 0.59 ($p > 0.01$) which means that the hypothesis cannot be accepted.

Table 10

The Correlation Results Between the Breastfeeding Duration and the Postpartum Education Given at Discharge and the Influence it had on the Feeding Decision.

Correlation Coefficient Rs Value		0.2086
BF Duration	Sig. (2-tailed)	0.223465
	N	36
Postpartum Education given at Discharge	Df	34

Research Question 4: How did the postpartum education given at discharge influence your decision to breastfeed?

Hypothesis 4: The postpartum education given at discharge had a statistically significant influence on the decision to breastfeed.

This hypothesis was not accepted because the correlation coefficient (r_s) result of 0.2086 showed that there was a weak relationship between the breastfeeding duration and the influence of prenatal education given by WIC office on the decision to breastfeed (r_s value was in the range of 0.20-0.39). The p value for r_s was 0.22 ($p > 0.01$) which means that the hypothesis cannot be accepted.

Table 11

The Correlation Results Between the Breastfeeding Duration and the Postpartum Education Given at the WIC Office and the Influence it had on the Feeding Decision. .

Correlation Coefficient Rs Value		0.1499
BF Duration	Sig. (2-tailed)	0.385037
	N	36
Postpartum Education given at Discharge	Df	34

Research Question 5. How did the postpartum education given at the WIC office influence your decision to breastfeed?

Hypothesis 5: The postpartum education given at the WIC office had a statistically significant influence on the decision to breastfeed.

This hypothesis was not accepted because the correlation coefficient (r_s) result of 0.1499 showed that there was a very weak relationship between the breastfeeding duration and the influence of prenatal education given by WIC office on the decision to breastfeed (r_s value was in the range of 0.00-0.19). The *p* value for r_s was 0.38 ($p > 0.01$) which means that the hypothesis cannot be accepted.

Table 12

The Correlation Results Between the Breastfeeding Duration and the Postpartum Education Given by the Medical Provider and the Influence it had on the Feeding Decision.

Correlation Coefficient Rs Value		0.1641
BF Duration	Sig. (2-tailed)	0.338897
	N	36
Postpartum Education given by the Medical Provider	Df	34

Research Question 6. How did the postpartum education given by the medical provider influence your decision to breastfeed?

Hypothesis 6. The postpartum education given by the medical provider had a statistically significant influence on the decision to breastfeed.

This hypothesis was not accepted because the correlation coefficient (r_s) result of 0.1641 showed that there was a very weak relationship between the breastfeeding duration and the influence of prenatal education given by the medical provider on the decision to breastfeed (r_s value was in the range of 0.00-0.19). The p value for r_s was 0.33 ($p > 0.01$) which means that the hypothesis cannot be accepted.

Multiple Regression. According to Triola 2005, multiple regression is the estimated relationship between a dependent variable and two or more independent variables. The general purpose of multiple regression is to analyze the relationship between several independent or predictor variables and a dependent variable (Triola,

2005). This research study utilized multiple regression analysis to answer research question number seven.

Research Question 7. Which of the variables is best predictor of increased breastfeeding duration?

Hypothesis 7. There was a variable that had a statistically significant influence on the decision to breastfeed.

Multiple regression analysis was used to analyze the relationship between the dependent variable (WIC breastfeeding duration in weeks) and the independent variables: (a) the prenatal breastfeeding education the woman received from her medical provider, (b) the prenatal breastfeeding education the woman received at the WIC office, (c) the experience of skin-to-skin breastfeeding at delivery, (d) the postpartum breastfeeding education the woman received at discharge, (e) the postpartum breastfeeding education the woman received at the WIC office, and the postpartum breastfeeding education the woman received from her medical provider. The results for research question (RQ7) are shown in Table 13.

Table 13

Explained Results of Multiple Regression Analysis (RQ7)

	Variable	t	Regression Coefficient (B)	Sig. (p-value for t)	Results
1	The Prenatal breastfeeding education received from the Medical Provider	0.876	3.9	0.388	Not significant because the p-value for t is greater than 0.05.
2	The Prenatal breastfeeding education received at the WIC office	-1.06	-4.8	0.298	Not significant because the p-value for t is greater than 0.05.
3	The skin-to-skin breastfeeding experience at the hospital at delivery	-1.09	-8.5	0.067	Not significant because the p-value for t is greater than 0.05.
4	The postpartum breastfeeding education given at discharge	0.566	4.6	0.576	Not significant because the p-value for t is greater than 0.05.
5	The postpartum breastfeeding education given at the WIC office	2.5	12.8	0.017	Was significant because the p-value for t was greater than 0.05.
6	The postpartum breastfeeding education given by the medical provider	0.179	1.6	0.85	Not significant because the p-value for t is greater than 0.05.

I expected that the results would show a positive and significant influence on the decision to breastfeed given by the WIC staff. However, I expected that the influence on the decision to breastfeed would be stronger from the prenatal breastfeeding education given from the WIC office (Table 13). This result was expected because the WIC staff have been working hard on providing breastfeeding education to all women over the last

twenty plus years on the benefits of breastfeeding. The WIC staff, especially the professionals and the breastfeeding peer counselors, have been making every effort to provide each woman with volumes of education each time she comes into the office for service. The professional staff receive annual mandated training to provide the most updated information and education on breastfeeding and pass that onto the WIC participants. They also have been given annual update training on breastfeeding promotion and support during in-service meetings and monthly professional meetings to maintain continuing education credits. Since the 1980s the education protocol has improved greatly and all staff promote and support breastfeeding as the ultimate feeding method in the WIC program.

The results *R Squared*, *Standard Error of the Estimate*, *F Change*, *Df,* and *Significance of Change* through multiple regression are displayed in Table 14. The results for *Df, Mean Square, F,* and *Significance level (p-value)* through ANOVA are displayed in Table 15.

Table 14

Model Summary

Mode	R Square	Std. Error of the Estimate	F Change	df1	df2	Sig, F Change
1	0.312	15.453467	2.193	6	29	0.073

The results for multiple regression shows that $R^2 = .312$, which means that 31.2% of the dependent variable was explained by the independent variable and the demographic variables. The Significant F Change (F-Test) was significant at 0.073 (p-value).

Therefore, the significance of the relationship between the variables is weak. The null hypothesis was accepted because the p-value for the F-test was >.01. The only variable that had any significant influence on the decision to breastfeed was variable number 5 (Postpartum education given at the WIC office).

Table 15

ANOVA

Model	Sum of Squares	df	Mean Square	f	Signf.
Regression	3141.686	6	523.614	2.193	0.073[b]
Residual	6925.480	29	238.810		
Total	10067.166	35			

Table 16

Influences on Infant Feeding

Distribution of Responses Regarding Influences on Infant Feeding

Question	Strongly Agree	Agree	Strongly Disagree	Disagree
Prenatal education at Health Care Provider influenced decision	7 (19.4%)	16 (44.5%)	10 (27.8%)	3 (8.3%)
Prenatal education at WIC Influenced decision	19 (52.8%)	12 (33.3%)	5 (13.9%)	0 (0.0%)
Experience of Skin-to-Skin Influenced decision	14 (38.9%)	17 (47.2%)	4 (11.1%)	1 (2.8 %)
Postpartum education at discharge Influenced decision	4 (11.1%)	17 (47.2%)	14 (38.9%)	1 (2.8%)
Postpartum education at WIC Influenced decision	16 (44.5%)	16 (44.5%)	3 (8.3%)	1 (2.8%)
Postpartum education at Health Care Provider influenced decision	4 (11.1%)	17 (47.2%)	14 (38.9%)	1 (2.8%)

Research question 1 was: How did the prenatal education given by your medical provider influence your decision to breastfeed? The results from the survey data in Table 16 showed that, of the 36 WIC postpartum breastfeeding women responding, 7 (19.4%) strongly agreed and 16 (44.5%) agreed; a total of 23 (63.9%) stating that their health care provider had an influence on their infant feeding decision. However, 13 (36.1%) of the women stated that their health care provider did not have an influence on their infant feeding choice. The qualitative data collected in phase two of this embedded, mixed method study provided more data to support this quantitative result.

Research question 2 was: How did the prenatal education given at the WIC office influence your decision to breastfeed? The results from the survey data in Table 16 showed that, of the 36 WIC postpartum breastfeeding women responding, 19 (52.8%) strongly agreed and 12 (33.3%) agreed, a total of 31 (86.1%) agreeing that the WIC office staff had an influence on their decision to breastfeed. However, 5 (13.9%) of the women stated that the WIC office staff did not have an influence on their decision to breastfeed. The qualitative data collected in phase two of this embedded, mixed methods study provided more data to support this quantitative result.

Research question 3 was: How did the experience of skin-to-skin breastfeeding at the hospital at delivery influence your decision to breastfeed? The results for the survey data in Table 16 showed that, of the 36 WIC postpartum breastfeeding women responding, 14 (38.9%) strongly agreed and 17 (47.2%) agreed a total of 31 (86.1%) stating that the experience of skin-to-skin had an influence on their decision to breastfeed.

However, 5 (13.9%) of the women stated that the skin-to-skin experience did not influence their decision to breastfeed.

Research question 4 was: How did the postpartum education given at discharge influence your decision to breastfeed? The results for the survey data in Table 16 showed that, of the 36 WIC postpartum breastfeeding women responding, 4 (11.1%) strongly agreed and 17 (47.2%) agreed, a total of 21 (58.3%) stating that postpartum education given at discharge influenced their decision to breastfeed. However, 15 (41.7%) of the women stated that the education given at discharge did not influence their decision to breastfeed. The qualitative data collected in phase two of this embedded, mixed method study provided more data to support this quantitative result.

Research question 5 was: How did the postpartum education given at the WIC office influence your decision to breastfeed? The results for the survey data in Table 16 showed that, of the 36 WIC postpartum breastfeeding women responding, 16 (44.5%) strongly agreed and 16 (44.5%) agreed, a total of 32 (89.0%) stating that the postpartum education given at the WIC office influenced their decision to breastfeed. Only 4 (11.1%) of the women stated that the postpartum education given at the WIC office did not influence their decision to breastfeed. The qualitative data collected in phase two of this embedded, mixed method study provided more data to support this quantitative result.

Research question 6 was: How did the postpartum education given by your medical provider influence your decision to breastfeed? The results for the survey data in Table 16 showed that, of the 36 WIC postpartum breastfeeding women responding, 4 (11.1%) strongly agreed and 17 (47.2%) agreed, a total of 21 (58.3%) stating that the

postpartum education given by their health care provider influenced their decision to breastfeed. However, 15 (41.7%) of the women stated that the postpartum education given by their health care provider did not influence their decision to breastfeed. The qualitative data collected in phase two of this embedded, mixed method study provided more data to support this quantitative result.

Research question 7 was: Which of the variables is the best predictor of increased breastfeeding duration? The results for the survey data in Table 16 showed that, 19 (52.8%) of the postpartum women strongly agreed that prenatal education at the WIC office and 16 (44.5%) strongly agreed that postpartum education received at the WIC office a total of 35 (97.3%) of the women stated that the WIC office education was the best predictor of increased breastfeeding duration. The results from this table also showed that 7 (19.4%) of the postpartum women strongly agreed that prenatal education from their health care provider and 4 (11.1%) of the women stated that postpartum education from health care provider for a total of 11 (30.5%) was the best predictor of increased breastfeeding duration. The qualitative data collected in phase two of this embedded, mixed methods study provided more data to support this quantitative result.

Qualitative Data Analysis Methods

The qualitative research question for this mixed method study was: How do women enrolled for WIC benefits describe the experience of choosing a feeding method for their infants? The sub-questions of the research study included: (a) What was the impact of the prenatal breastfeeding education that the woman received from her medical provider on her infant feeding decision; (b) What was the impact of the prenatal

breastfeeding education that the woman received at the WIC office on her infant feeding decision; (c) What was the impact of the breastfeeding education that the woman received at the hospital at delivery on her infant feeding decision; (d) What was the impact of the postpartum breastfeeding education that the woman received at discharge on her infant feeding decision; (e) What was the impact of the postpartum breastfeeding education that the woman received from her medical provider on her infant feeding decision; (f) What was the impact of the postpartum breastfeeding education that the woman received at the WIC office on her infant feeding decision; (g) What was the impact of the postpartum breastfeeding support that the woman received from family and friends on her infant feeding decision; (h) What was the impact of the postpartum breastfeeding support that the woman received from the lactation resources on her infant feeding decision; and (i) What was the impact of the woman's breastfeeding self-efficacy on her infant feeding decision?

Qualitative Analysis- MVKMAP. I used the phenomenological analysis method, Moustakas (1994) modified version of two methods: van Kaam's method of analysis and Stevick-Colaizzi-Keen's method of analysis (MVKMAP) to analyze transcribed in-depth interviews (Moustakas, 1994). The analysis included seven steps:

1. Listing and preliminary grouping- list every expression relevant to the experience (Horizonalization).

2. Reduction and elimination- test each expression for two requirements: a) it should contain a moment of the experience that is a necessary; and b) it has to be able to be extracted and labeled. If these two requirements are not met, then the expression is eliminated. Also, overlapping, repetitive, and vague expressions are also eliminated.

3. Clustering and Thematizing the Invariant Constituents (participant's responses)
---clustering the related expressions into a thematic label.

4. Final identification of the expressions and themes by validation. Check the expressions and their accompanying theme against each participant's complete transcription for: (a) explicitly and compatibility; and (b) if they are not explicit and compatible, then they are not relevant to the participant's experience and should be deleted.

5. The relevant expressions and themes for each participant are used to create an individual textual description of the experience (incorporate verbatim examples from the transcribed interviews).

6. For each participant an individual structural description of the experience is constructed based on the individual textural description.

7. For each participant and individual textural-structural description of the meanings and essences of the experience (incorporate the expressions and themes). Then develop a composite description of the meanings and essences of the experience, representing the group as a whole (pp. 120-121).

I began to tally the study participant responses as the research participants completed the surveys. The qualitative transcribed notes were entered into the tally sheet by hand and common themes began to emerge. I highlighted the "like" themes and entered them into a table. I then categorized the sub-themes to correspond to the themes stated by the research participants and listed on the tally sheet. Some of the like themes had obvious sub-themes and other had no sub-themes. The themes and sub-themes from the appendix are listed in Table 17.

Table 17
Qualitative Coded Themes

Question	Theme(T)	Sub-Theme (S)
1) When you went to your medical provider, what did he/she say about breastfeeding?	- Breastfeeding is best **(T1)**	-Healthy for baby **(S1)** -Doctor encourages it **(S3)** -Should breastfeed **(S2)**
2) When you went to the WIC office during the pregnancy, do you remember talking about breastfeeding? What did the staff tell you about breastfeeding?	- Breastfeeding is best **(T1)**	-Breastfeeding basics **(S5)** -Should breastfeed **(S2)** -Healthy for baby **(S1)** -Benefits of breastfeeding **(S4)**
3) Who was your biggest support person? Was the person with you when you delivered the baby? Are they still supportive?	- Family **(T2)** - WIC Peer Counselor **(T3)** - Hospital Staff **(T4)**	-Baby's father **(S6)** -My mother **(S7)**
4) Did anyone speak with you about breastfeeding when you delivered the baby? If so, who?	- Yes, hospital staff **(T4)**	
5) What was discussed about feeding the baby when you were discharged?	- Breastfeeding **(T5)**	-Cues **(S8)** -Latching **(S9)** -Positioning **(S10)**
6) When you went to your medical provider after you delivered what feeding information was discussed?	- Breastfeeding **(T5)**	- How often **(S11)**
7) When you went to the WIC office after you delivered your baby what feeding information was discussed?	- Breastfeeding **(T5)**	-Cues **(S8)** -Latching **(S9)** -Positioning **(S10)**
8) After you had your baby what advice did you receive from your family and friends? How did that impact how you feed your baby?	- Breastfeed more **(T6)** - Use formula **(T7)** - Do both **(T8)** - Give it up **(T9)**	
9) After you had your baby did you reach out to any lactation resources? Which ones? Were they helpful?	- Hospital staff **(T4)** - WIC staff **(T3)**	
10) How prepared do you think you were to breastfeed your baby? How comfortable do you feel now? What do you think made you more (or less) comfortable?	- Very prepared (**T10)**	- More prepared now **(S12)** - A little nervous **(S13)** - Not prepared **(S14)**
11) What advice would you give to women about how to feed their new baby? Who should they go to with questions?	- Get support **(T11)**	- Speak to a WIC Peer **(S15)** - Join a group **(S16)** - Don't give up **(S17)**

The Qualitative Codes developed into the 11 themes identified with a (T) (Table 17).

1. (T1) Breastfeeding is the best method of feeding.
2. (T2) Family as a method of breastfeeding support.
3. (T3) WIC Peer Counselor as a method of breastfeeding support.
4. (T4) Hospital staff as a lactation resource.
5. (T5) Breastfeeding as a topic of feeding education.
6. (T6) To breastfeed more as advice given by family and friends.
7. (T7) To use formula as advice given by family and friends.
8. (T8) To "do both" meaning formula and breastfeed as advice by family and friends.
9. (T9) To "give it up" meaning stop breastfeeding as advice by family and friends.
10. (T10) Very prepared as an answer to how prepared a woman was to breastfeed her new baby.
11. (T11) Get support for advice to a pregnant woman about infant feeding.

The themes (T) generated 17 sub-themes, identified by (S), (Table 17).

1. (S1) Healthy for the baby
2. (S2) Should breastfeed
3. (S3) Doctor encourages it
4. (S4) Benefits of breastfeeding
5. (S5) Breastfeeding basics
6. (S6) Baby's father- biggest support
7. (S7) My mother- biggest support
8. (S8) Cues of hunger
9. (S9) Latching
10. (S10) Positioning
11. (S11) How often to feed
12. (S12) More prepared to breastfeed now
13. (S13) A little nervous about breastfeeding
14. (S14) Not prepared to breastfeed
15. (S15) Speak to a WIC peer counselor
16. (S16) Join a BF support group
17. (S17) Don't give up on breastfeeding

Analysis of Themes

Medical Provider and Prenatal Breastfeeding Education. The researcher's analysis of the study participant's responses to the question about the breastfeeding education given by the medical provider at the first prenatal visit (Question 1) generated one major theme and three sub-themes. The *breastfeeding is best* (major theme) generated the *healthy for baby* (sub-theme), *doctor encourages it* (sub-theme), and *should breastfeed* (sub-theme). In addition the quantitative data showed that, of the 36 WIC postpartum breastfeeding women responding, 23 (63.9%) strongly agree; and 7 (19.4%) agree; a total of 30 (83.8%) stating that the medical provider influenced her decision to breastfeed her baby. The qualitative data lends strength to the quantitative data result. However, encouragement from medical providers ranged from a very proactive, "yes we encourage breastfeeding", and an agreeable "yeah you should try it," to nothing about breastfeeding discussed. Research participant #25 said that "they did not discuss breastfeeding at my medical provider; I researched it on my own."

The WIC Office and Prenatal Breastfeeding Education. The researcher's analysis of the study participant's responses to the question about the breastfeeding education given at the WIC office when the woman was pregnant (Question 2) generated one major theme and four sub-themes. The *breastfeeding is best* (major theme) generated *breastfeeding basics* (sub-theme), *should breastfeed* (sub-theme), *healthy for baby* (sub-theme), and *benefits of breastfeeding* (sub-theme). In addition the quantitative data showed that, of the 36 WIC postpartum breastfeeding women responding, 19 (52.8%) strongly agreed and 12 (33.3%) agreed; a total of 31 (86.1%) stating that the prenatal

breastfeeding education given at the WIC office had an influence on their decision to breastfeed. Research participant #32 stated that "we talked about the benefits of breastfeeding and I told her that I breastfed all my kids."

The Most Supportive Person in the Breastfeeding Decision. The researcher's analysis of the study participant's responses to the question about the most supportive person who helped the woman decide to breastfeed the baby (Question 3) generated three major themes and two sub-themes. The members of the woman's *family* (major theme), *WIC peer counselor* (major theme), and *hospital staff* (major theme) were all major themes that generated the *baby's father* (sub-theme) and the *woman's mother* (sub-theme) as sub-themes. In addition, some of the participant's responses included overwhelming prenatal and postpartum breastfeeding support from the WIC peer counselor who works at the WIC office where the mother receives her WIC benefits and from the Breast pump Manager at the Administrative Office as well. For example, participant # 3 stated that, "although I had a lactation counselor at the hospital, I felt much more comfortable coming into the WIC office and to the see the peer counselor at the WIC Administrative office because they took the time to work with me and my baby." Participant #2 recommended that, "If you have any issues with breastfeeding, go to the WIC office and ask for the peer counselor because she will help you to get the baby latched." Finally participant # 43 said, "I would send the women to the WIC office because they really help you feel comfortable in your feeding decision."

Breastfeeding Education Given at Delivery. The researcher's analysis of the study participant's responses to the question about the breastfeeding education given at

delivery (Question 4) generated one major theme and no sub-themes. The *hospital staff* (major theme) was the only response that women gave that was significant. The responses given by research participants on this topic ranged from stating that the nurses or other hospital staff gave words of encouragement to nothing discussed about breastfeeding. Participant #7 stated, "No, they did not say anything about breastfeeding; they just put the baby on my chest." This woman did not seem to notice that she was participating in skin-to-skin breastfeeding initiation. When it was mentioned to her, she agreed that the process encouraged the baby to breastfeed. In this example, the research participant turned what she thought was a negative answer into a positive experience of skin-to-skin breastfeeding initiation.

Breastfeeding Education at Discharge. The researcher's analysis of the study participant's responses to the question about the breastfeeding education given at discharge (Question 5) generated one major theme and three sub-themes. The topic of *breastfeeding* (major theme) was given as the response by most research participants which generated *cues* (sub-theme), *latching* (sub-theme) and *positioning* (sub-theme) as the sub-themes. In addition, the quantitative data that was collected about the influence of the education at discharge on the feeding decision showed that, of the 36 WIC postpartum breastfeeding women responding, 4 (11.1%) strongly agreed and 17 (47.2%) agreed; a total of 21 (58.3%) stating that this education had an influence on their decision to breastfeed their baby. Participant responses included topics such as the sub-themes listed above.

Medical Provider and Postpartum Breastfeeding Education. The researcher's analysis of the study participant's responses to the question about the breastfeeding education given by the medical provider after delivery of the baby (Question 6) generated one major theme and one sub-theme. The topic of *breastfeeding* (major theme) was given as the response by most research participants which generated *how often* (sub-theme) as the sub-theme. In addition, the quantitative data that was collected about the influence of the education given by the medical provider after delivery of the baby showed that, of the 36 WIC postpartum breastfeeding women responding, 4 (11.1%) strongly agreed and 17 (47.2%) agreed; a total of 21 (58.3%) stating that the postpartum education given by their health care provider influenced their decision to breastfeed. Most responses from the women stated that their medical provider asked how often they breastfed and encouraged them to continue to breastfeed.

The WIC Office and Postpartum Breastfeeding Education. The researcher's analysis of the study participant's responses to the question about the breastfeeding education given by the WIC office staff after delivery of the baby (Question 7) generated one major theme and three sub-themes. The topic of *breastfeeding* (major theme) was given as the response by most research participants which generated *cues* (sub-theme), *latching* (sub-theme) and *positioning* (sub-theme) as the sub-themes. In addition, the quantitative data that was collected about the influence of the education given by the WIC office staff after delivery of the baby showed an overwhelming result that, of the 36 WIC postpartum breastfeeding women responding, 16 (44.5%) strongly agreed and 16 (44.5%) agreed; a total of 32 (89.0%) stating that the postpartum education given at the

WIC office influenced their decision to breastfeed. Only 4 (11.1%) of the women stated that the postpartum education given at the WIC office did not influence their decision to breastfeed. The sub-themes listed were discussed at the WIC office with most research participants, however many other positive responses included: discussion of *feeding schedule, storage of breastmilk, pumping, breast pain, introducing solid foods with breastfeeding, number of wet and dirty diapers, breastmilk composition, and exclusivity.* Participant # 4 stated that, "I learned everything I needed to learn from the WIC staff." Participant # 32 stated that, "we went over his feeding schedule and talked about using the breast pump. The peer counselor showed me how to breastfeed without it hurting."

Breastfeeding Advice from Family and Friends. The researcher's analysis of the study participant's responses to the question about the feeding advice from family and friends and its impact on the feeding decision (Question 8) generated four major themes and no sub-themes. The topics of *breastfeeding more* (major theme), *use formula* (major theme), *do both breastmilk and formula* (major theme), and *give up breastfeeding* (major theme) were all major themes that were expressed by the research participants. In some cases, the first major theme of *breastfeed more* had a positive impact on some women, while others expressed that the negative influences did not seem to impact their decision to breastfeed their infants. Participant # 30 stated, "My family encouraged me to breastfeed longer and this helped me to continue." Participant # 4 stated, "My friends and family said that breastfeeding was too much for me. But it did not matter, I breastfed." Participant #32 said, "Everyone kept trying to get me to give my baby formula, which just made me want to breastfeed even more."

Additional Lactation Resources. The researcher's analysis of the study participant's responses to the question about reaching out to any lactation resources for help (Question 9) generated two major themes and no sub-themes. The topics of *hospital staff* (major theme) and *WIC office staff* (major theme) were the themes expressed by research participants. The responses from the research participants ranged from naming the sources (hospital staff or WIC staff) to no resources were contacted for help. Most participants contacted the hospital staff while they were in the hospital or the WIC office staff once they returned home.

Breastfeeding Preparedness (Self-efficacy). The researcher's analysis of the study participant's responses to the question about self-efficacy and how prepared the woman was to breastfeed her baby when she first had him/her as compared to how comfortable she is now (Question 10) generated one major theme and three sub-themes. The answer of *very prepared* (major theme) was the major theme and *more prepared now* (sub-theme), *a little nervous* (sub-theme), and *not prepared* (sub-theme) were the sub-themes. This question addressed the self-efficacy the woman had about her ability to breastfeed her new baby. The responses from the participants were interesting. Participant # 4 stated, "I was not prepared." Participant # 32 stated, "I was very prepared because I breastfed my other kids. I am still very comfortable breastfeeding." Some participants thought they were prepared, but were not. Participant # 43 stated, "I thought I was prepared, but I was not. Once I got the help I needed and the baby and I got a good flow I felt more comfortable."

Breastfeeding Advice to Pregnant Women. The researcher's analysis of the study participant's responses to the question about what advice would the women give to other pregnant women about how to feed their new baby and who would you tell them to go to with breastfeeding questions (Question 11) generated one major theme and three sub-themes. The topic of *get support* (major theme) was the overall major theme expressed by most research participants with *speak to a WIC peer counselor* (sub-theme), *join a BF support group* (sub-theme), and *don't give up on breastfeeding* (sub-theme) as the sub-themes that emerged from this question. All research participants had positive comments to share with pregnant women about breastfeeding. Participant # 19 stated, "breastfeeding has more benefits for both mon and baby." Participant # 33 said, "take your time, it is natural and it is not supposed to hurt."

Surveys from Women Delivering at Out-of-County Hospitals

The researcher reviewed the surveys of the eight participants that were not included in the data analysis. Six of the research participants delivered their infants at hospitals located outside of the City of Philadelphia, PA. However, they received WIC benefits at an office located in the city. A review of their responses showed that the breastfeeding education and support they received at the WIC office was positive. One of the participants stated, "I was nervous because I never breastfed before but I am very comfortable now that I talked with the WIC peer counselor." Another participant delivered her infant at a hospital outside of the city but at a Baby Friendly Hospital. She stated that the nurses encouraged her to breastfeed while she was at the hospital and this helped her, but she was supported even more when she talked with the peer counselor at

her WIC office. This participant stated that, “the peer counselor kept reassuring her that she was doing a great job breastfeeding and this made her more comfortable and wanted to continue.”

Discrepant Cases and Nonconforming Data

Searching the data for discrepant or nonconforming results is a key part of validity testing in qualitative data analysis (Maxwell, 2004). Results that are expected or cannot be explained by an interpretation can lead to a modification in the conclusion of the study. It is best to report the discrepant data and allow the reader to draw their own conclusion.

The discrepant cases and nonconforming data for each qualitative interview question were:

- Question 1: Three research participants did not discuss breastfeeding with their medical provider and three others could not remember.
- Question 2: Two research participants did not discuss breastfeeding at the WIC office and one other could not remember.

Six of the 36 women interviewed for the research study were over 36 years old, two had their second child, one had her third, two had her sixth and one had her seventh baby. They stated that they were experienced at breastfeeding and did not need any help. Participant # 33 who just had her sixth child, stated that she “exclusively breastfed all of her kids for at least 18 months.”

- Question 4: Two research participants said that no one spoke to them about breastfeeding when they delivered the baby.

However Participant # 7, stated that "they just placed the baby on my chest." She did not seem to understand that this was part of the skin-to-skin process.

- Question 5: Three research participants said that nothing about feeding was discussed when they were discharged and three others said that could not remember.
- Question 6: Eight research participants said that nothing was discussed about feeding the baby when you went to your medical provider after delivery and three others said they could not remember.
- Question 7: One research participant said that breastfeeding was not discussed at the WIC office when she returned for her appointment after delivery.
- Question 8: Five research participants said that they did not receive any advice from family or friends and one other said that she could not remember.

Evidence of Trustworthiness

Throughout my time working with the women in the WIC offices, I repeated that I was a student and that their answers to the questions were confidential. The women, in most cases, wanted to share their knowledge about breastfeeding and were eager to explain their experience at the delivery hospital. Some of the study participants had knowledge of the mechanics of breastfeeding, some had previous experience breastfeeding their older child(ren), and others were not informed to the extent that they would be able to breastfeed for a long period of time. However, the study participants were comfortable talking with me and gave their information willingly. The study participants reporting discrepant and/or nonconforming data had no problem honestly

giving me the information. I was very comfortable talking with the women and I believe they trusted me, as well.

Summary

Chapter 4 presented the demographic characteristics of the research study participants, descriptive statistics of the raw quantitative data and the results from the following analyses: (a) analysis of breastfeeding duration in weeks, (b) map of the City of Philadelphia and the WIC Office and delivery hospital locations, (c) Spearman's rank correlation coefficient, (d) scatterplot of postpartum breastfeeding women and breastfeeding duration in weeks, (e) multiple regression, (f) distribution of responses regarding influences on infant feeding, and the qualitative data analysis (g) Moustakas modified version van Kaam's and Stevick-Colaizzi-Keen's method of analysis (MVKMAP) of Phenomenological data. The major key findings included: (a) the prenatal breastfeeding education given at the WIC office had an influence on the woman's decision to breastfeed, (b) the postpartum education given at the WIC office influenced their decision to breastfeed. Only 4 (11.1%) of the women stated that the postpartum education given at the WIC office did not influence their decision to breastfeed, (c) some of the participant's responses included overwhelming prenatal and postpartum breastfeeding support from the WIC peer counselor who works at the WIC office where the mother receives her WIC benefits and from the Breast pump Manager at the Administrative Office as well. For example, participant # 3 stated that, "although I had a lactation counselor at the hospital, I felt much more comfortable coming into the WIC office and to the see the peer counselor at the WIC Administrative office because they

took the time to work with me and my baby." Participant #2 recommended that, "If you have any issues with breastfeeding, go to the WIC office and ask for the peer counselor because she will help you to get the baby latched," and (d) all research participants had positive comments to share with pregnant women about breastfeeding. Participant # 19 stated, "breastfeeding has more benefits for both mon and baby." Participant # 33 said, "take your time, it is natural and it is not supposed to hurt." Participants who were not included in the data analysis also responded positively to the support received at the WIC office.

As stated earlier in Chapter 2, a research study completed from 2005 until 2011 in a Michigan WIC Program and its breastfeeding peer program and 5,429 WIC women who had initiated breastfeeding. The results showed that (77%) of the women were still breastfeeding at the end of the first month; and (55.0%) remained breastfeeding for three months; (40%) remained breastfeeding for six months; and (26.0%) remained breastfeeding for one year (Rozga et al., 2014). This study demonstrated how peer counselor programs improved outcomes in low-income populations.

Chapter 5 discusses (a) the interpretation of the findings, (b) limitations, (c) implications for Social Change, (d) recommendations for Future Study, and (e) the conclusion of the study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This chapter begins with a discussion of the findings from Chapter 4. I interpret the results of the quantitative and qualitative data analyses. In this chapter I also discuss the limitations of the study and its implications for social change, offer recommendations for future study, and provide a conclusion to the study.

Interpretation of the Findings

In this research study I used the mixed methods, explanatory embedded design. I collected all data and analyzed the quantitative data first. In this research study the qualitative data were collected in the form of an open-ended survey and an in-depth interview. The qualitative phase provided support to the quantitative data. I used SCT, specifically four of the 11 constructs (environment, situation, self-efficacy, and reinforcements), as the theoretical framework for this research study. These four constructs were chosen as the focus of this study because they explain the factors that influence the breastfeeding woman's decision about feeding her infant. After obtaining the results of the SPSS analysis, I found that the only variable that had a significant influence on the decision to breastfeed was Variable 5: Postpartum breastfeeding education given at the WIC office. Analysis of variables showed weak or very weak correlations. The variable, postpartum breastfeeding education given at the WIC office, showed a *p-value* (.017) for *t* that was less than .05 showing a significant correlation.

As I expected, the postpartum breastfeeding education given at the WIC office was a significant factor that influenced a woman's decision to breastfeed her infant. An

analysis of the breastfeeding duration showed that, of the 36 postpartum women, 24 (66.6%) women were still breastfeeding at the time of the interview.

Limitations of the Study

The main limitation of this study was the use of the phenomenological research design. Using the phenomenological design strategy, I recruited a purposive sample of 36 postpartum breastfeeding WIC women. Although the sample was appropriate for the study, use of purposeful sampling in phenomenological studies does not allow for generalization to the general population (Bandura, 2001). I relied on self-reported data by the postpartum breastfeeding woman at a vulnerable time delivering an infant. This time period may have been stressful for participants, and details of the delivery and breastfeeding support may only be as good as each woman can remember.

Recommendations

There is a need for research on continuing breastfeeding education for health care professionals, especially those who are working in maternity care and Baby Friendly hospitals. According to Baby-Friendly USA, Inc., there are currently 558 certified BFHI facilities in the United States with many others striving for the certification. Once a facility receives BFHI certification, care for breastfeeding women becomes a key focus (Baby-Friendly USA, Inc., Guidelines and Evaluation Criteria, 2016). The *Ten Steps for Breastfeeding Success* is the guideline that is followed to ensure that the facility is achieving its goal (Baby-Friendly USA, Inc., 2016). However, based on the data collected from the surveys, only 21 of the 36 (or 58.3%) study participants documented that the referrals they receive at discharge influenced their decision to breastfeed (Step

10). My recommendation is that the Baby-Friendly USA organization needs to have a method in place to evaluate this step. According to Baby-Friendly USA, Inc.'s (2016) Guidelines and Evaluation Criteria, "The designated health care professional(s) should ensure that, prior to discharge, a responsible staff member explores with each mother and a family member or support person the plans for infant feeding after discharge" (p.22). The guidelines continue to list examples of support to be provided including the name and phone numbers of community-based support groups, breastfeeding support services, and individual lactation resources (Baby-Friendly USA, Inc., 2016). Listed under this guideline are six methods to evaluate if this has been completed at least 80% of the time at the facility.

Although 58% of the postpartum breastfeeding women in the study stated that information given at discharge influenced their feeding decision and listed certain topics that were discussed, no one stated that they were given support group information or phone numbers to the WIC counselor for breastfeeding support. A successful hospital/community continuity of care system requires an understanding of where patients can go for follow up outpatient breastfeeding education (Baby-Friendly USA, Inc., 2016, p.22) . Health care providers need to understand the importance of providing their patients with breastfeeding support information at discharge (Baby-Friendly USA, Inc., 2016, p.22). The low-income women in this study may rely on peers because they may not have any other person to give them confidence or support. The WIC peer counselor staff and nutrition professionals are trained to understand the obstacles women face when they do not have a strong breastfeeding support system at home. With

continued support, WIC postpartum breastfeeding women may be able to breastfeed longer, ultimately leading to healthier families.

Implications

This study is important for social change because it brought to light some of the issues that a postpartum breastfeeding woman experiences when she is faced with deciding on a method of feeding her infant. It helped to explain where participants receive their infant feeding education and support, when they obtain education and support, and how the education and support is accepted and influences the feeding decision. The results of the research study helped me to understand where women get their education about infant feeding and care. The study also showed me where education in the community needs to be given in order to increase breastfeeding duration. I also identified the comfort levels, or self-efficacy, a breastfeeding woman has after she experiences delivery and is willing to share her story. This study contributes to social change by identifying the need for breastfeeding support by medical providers, hospitals, and WIC offices at the prenatal period not only at the postpartum appointment.

The community group, Multi-Hospital Task Force, needs to include, not only hospitals located in the City of Philadelphia, but also those just outside of the city limits. These hospitals provide health care to women who live in Philadelphia and participate in WIC offices in the city. These hospitals should be represented on the task force so that they can obtain the information on breastfeeding that is shared with city hospitals. This would help them learn more about the BFHI process and may lead to them becoming BFHI-certified.

Conclusion

The breastfeeding education provided since the early 1980s by the WIC staff is impressive; however, breastfeeding duration rates within the Philadelphia WIC program have not increased. Lack of support for postpartum breastfeeding women enrolled in WIC once they leave the hospital after delivery is reflected in their short-term breastfeeding duration rates (Cross-Barnet et al., 2012). The nonprofit agency that manages the WIC program in Philadelphia provides benefits to over 56,000 women, infants, and children in nine WIC offices. The WIC staff in each office consists of a management team, nutrition professionals, paraprofessional staff, and a breastfeeding peer counselor. This peer counselor works to develop relationships with pregnant and breastfeeding women when they are enrolled on the program until the baby is born. During this time, the woman meets with the peer to discuss her feeding plans. It is at this time and throughout her pregnancy until she returns with her newborn when she develops a trusting relationship with the WIC peer counselor. The responses from the research participants indicated that they received professional breastfeeding education and at the same time developed supporting relationships. Many of the women stated that the "WIC peer counselor was and still is their biggest supporter of breastfeeding."

This research study gave me the opportunity to better understand the challenges that women enrolled in the WIC program face when they are contemplating a feeding method for their infant. Although the results showed that the WIC peer counselor is a crucial part of the support system, they alone cannot increase breastfeeding rates without the help of the community health care profession.

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Appendix A: Healthy People Initiative, Healthy People 2020 Goals, Surgeon General Call to Action

Healthy People Initiative

The *Healthy People Initiative* has been the national public health, science-based initiative that provides objectives for improving the health of all Americans (United States Department of Health and Human Services (USDHH), n.d.). According to the initiative, *Healthy People* has established benchmarks and monitored progress over time in order to: (a) encourage collaborations across communities and sectors; (b) empower individuals toward making informed health decisions; and (c) measure the impact of prevention activities (United States Department of Health and Human Services, n.d.).

Healthy People 2020 Goals

There are four breastfeeding objectives and five sub-objectives that relate to breastfeeding for Healthy People 2020 Initiative found under the Maternal, Infant, and Child Health topic section. The first goal: "Increase the proportion of infants who are Breastfed"- (81.9%) of all infants should initiate breastfeeding; (60.6%) of all infants should be breastfed at six months; (34.1%) of all infants should be breastfed for one year; (46.2%) of all infants should be exclusively breastfed through three months; (25.5%) of all infants should be exclusively breastfed through six months (United States Department of Health and Human Services, n.d.).

Surgeon General Call to Action

The *Surgeon General's Call to Action to Support Breastfeeding* is a publication offered by the United States Department of Health and Human Services to help people

and organizations understand and contribute to the health of mothers and their children. The documents in the publication detail the specific action steps needed to promote and support breastfeeding in the community. In this report, two specific action steps are listed in the community section specifically targeting ways that communities can be influenced such as -Action 3: Strengthen programs that provide mother-to-mother and peer (individual) support and counseling; and Action 4: Use community-based (group) organizations to promote and support breastfeeding. Both of these actions specifically mention various community-based collaborations such as WIC programs, community health care settings, support groups, head start programs, home visits, etc. all programs that should be referred to immediately after hospital discharge to help expand the support that women have received in the hospital to help extend the duration of breastfeeding (United States Department of Health and Human Services, n.d.).

Additional action steps listed in *The Surgeon General's Call to Action to Breastfeeding*, listed in the Mothers And Families section, is the need to include family members including the spouses, partners, and grandparents in the counseling sessions so that they can assist the mothers in feeding decisions and provide the mothers with support to breastfeed her newborn as needed (United States Department of Health and Human Services, n.d.).

Appendix B: 4-D Pathway to Baby-Friendly Designation

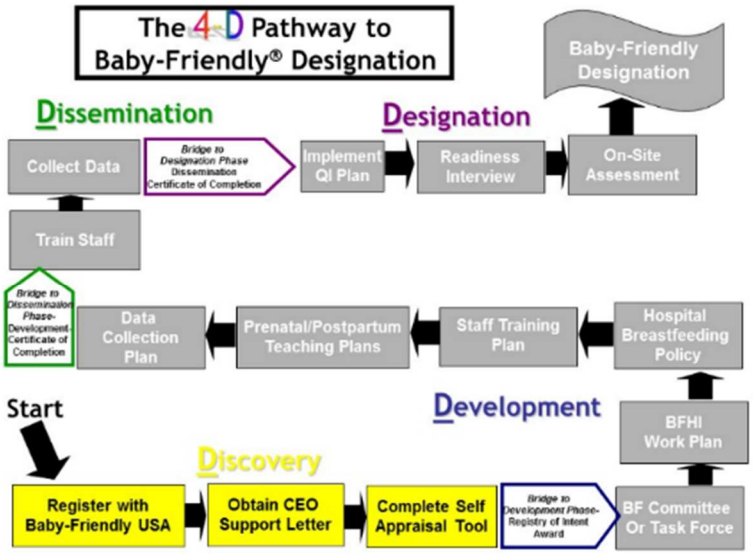

Figure 11. 4-D pathway to Baby-Friendly designation.

From "Baby Friendly USA, the gold standard of care," by Baby Friendly USA, Inc., 2010. (http://www.babyfriendly USA). © Baby-Friendly, USA, Inc. 2010.

The process involves the following four phases:

1. Discovery Phase: The first phase in the process. In this phase, the facility must register their intent to apply for BFHI certification with Baby-Friendly USA, obtain a support letter from the facility's CEO and complete a facility self-appraisal tool (Baby-Friendly USA, Inc. designation process, 2010).
2. Development Phase: The second phase in the process which is the planning phase. This usually lasts for up to one year. The facility can only enter this phase once the discovery phase is completed. The facility pays a fee and receives a tools kit that

will direct them in planning them to develop policies, training, evaluation, and plans to help them move the next two phases toward BFHI certification (Baby-Friendly USA, Inc. designation process, 2010).

3. Dissemination Phase: The third stage in the process which is referred to as the implementing phase. The facility can only reach this phase once the development phase is completed and a certificate of completion is received from Baby-friendly USA. A dissemination tool kit is sent to the facility. During this time, the facility will disseminate plans about the BFHI process to staff and patients as the facility rolls out the development plans. Training of staff is an important part of this phase (Baby-Friendly USA, Inc. designation process, 2010).
4. Designation Phase: The fourth and final phase in the process which is referred to as the assessing phase. One of the final steps in this phase is that the facility must address the purchasing of breast milk substitutes, pacifiers, bottles, and other infant feeding equipment that before becoming baby-friendly was not a facility cost. The facility must also request a Telephone Readiness Assessment Interview within Two months of entering this phase. During the interview, members of the evaluation team from Baby-friendly USA will provide

> feedback on various areas of needed improvement that will need to be in place prior to the on-site visit. The on-site visit needs to be scheduled within eight months entering the designation phase. The on-site assessment is a two-stage process. If the facility does not pass the first visit, they are given a corrective action plan and a time frame to correct the areas of deficiency. A re-assessment will be completed to see if the corrections have been completed and a certificate can be given to the facility (Baby-Friendly USA, Inc. designation process, 2010).

No two facilities striving for BFHI designation are the same and some may take longer to complete each individual phase than others. The Baby-Friendly USA organization is a resource to help facilities to get through the process.

Appendix C: Permissions to Use <redacted> and <redacted> s Survey Questions

Hello Judith,

Thank you for your email. I definitely want to learn more about your project. Please send me your availability for a phone meeting in the next two weeks. In the meantime, you are more than welcome to modify my survey questions. Let me know if you have any additional questions. Thank you.

<Redacted> , PhD, RN, IBCLC
Assistant Professor
UCSF School of Nursing
San Francisco, CA 94143-0606
Phone: redacted
Email: redacted

Please note I am now using my Igbo name - <redacted>, Please update your contacts. Thank you!

From: Judith M. Khanuja
Sent: Friday, April 07, 2017 5:52 PM
To: <redacted>
Subject: Question

Hello Dr. <redacted>,
I am so excited that I found YOU! I am just reading your dissertation that I found and I am so impressed with your study.

I am currently completing my dissertation on Baby-friendly hospitals and I have a similar situation about family support. I was hoping that I could use some of your questions that you used when completed your study with your community. I also work with families in <redacted> and with the WIC program. We have over 70,000 women, infants, and children on our program and many of them struggle with family support and breastfeeding, in general. My study is to work with the six hospitals which just recently obtained BFHI designation and track the duration rates of BF in the WIC program. Support is one of our issues.

I am sorry to ramble on, I want to write you to ask for your permission to modify your survey (slightly) and use it to ask WIC mother about their support system.

I look forward to your response and would love to talk with you at your earliest convenience, if need be.
Thank you so much!
Judith M. Khanuja, MPH, CLC

My Pleasure! Let me know if I can be of further assistance.

<redacted>

On Mon, Jul 17, 2017 at 6:51 PM, Judith M. Khanuja < redacted> wrote:

I can't thank you enough, you are so kind! I appreciate you & accept ALL your prayers to help in my progress & completion!!

On Jul 17, 2017, at 5:38 PM, <redacted> wrote:

Dear Judith,

First, please accept my congratulations for your adventurous and persevering spirit - doctoral studies can be grueling! God put you there, however, and He will see you through it. Second, I am honored that you would consider using my research questions in your study!! Of course you may use my questions, modifying them as you need to do your work. We're all in this state called "life" together, and HAVE to help each other along. Should you need more, just call, text, or email....and please keep me posted as to your progress. I pray God's wisdom on you as you complete this portion of your journey.

Blessings,

<redacted>

On Sat, Jul 15, 2017 at 1:53 PM, Judith M. Khanuja <redacted> wrote:

Hi <redacted>,

My name is Judy Khanuja and I am a student completing my dissertation at Walden University. In addition to being a doctoral student, I am also the Nutrition Education Coordinator for the WIC Program in <redacted> and have been working with <redacted> for the past 24 years. <redacted> speaks very highly of you and directed me to read your dissertation. When I read your document, I could see why she suggested contacting you to ask for your approval to use your survey questions (with modification) in my study.

My research topic is also about breastfeeding but will focus on what support system WIC women have that makes her continue to breastfeed. I am looking at retrospective WIC data of a period of four years in four of our WIC offices to see why our duration rates continue to be so low with the numerous support systems we have in the community.

I would truly appreciate your approval for me to use some of your survey questions as I believe they would help to answer my research questions.

Thank you for your help,
Judy Khanuja
(PhD Candidate Walden University)

Appendix D: Approval Letter From <redacted> WIC Bureau Director

Good Morning, Judy –

Thank you for the email. I'd be happy to see how we can accommodate your request. I will need to touch base with <redacted> to discuss impact and data availability but I will circle back with you shortly. I'm sure we will need to set up a meeting to discuss more specific details and to fully understand your needs.

Have a great day!

<redacted> | Director
Bureau of Women, Infants and Children (WIC)
Pennsylvania Department of Health

www.health.state.pa.us

From: Judith M. Khanuja [mailto:redacted]
Sent: Monday, May 08, 2017 8:54 PM
To: <redacted>
Subject: Personal Request

Hi Mr. Cramer,

I met you a few years ago and I work as the WIC Nutrition Education Coordinator in <redacted>. I am also a graduate student in my "free" time. I am attaching a letter to you because I have a request.

I look forward to your response.
Sincerely,

Judith (Judy) Khanuja, MPH, CLC

Appendix E: Quantitative Likert Survey of WIC Participants

WIC Participant Infant Feeding Survey – (Likert Survey)

1) The prenatal education given at your medical provider influenced your decision to breastfeed.
   a. Strongly Agree
   b. Agree
   c. Disagree
   d. Strongly Disagree

2) The prenatal education given at the WIC office influenced your decision to breastfeed.
   a. Strongly Agree
   b. Agree
   c. Disagree
   d. Strongly Disagree

3) The experience of skin-to-skin breastfeeding at the hospital at delivery influenced your decision to breastfeed.
   a. Strongly Agree
   b. Agree
   c. Disagree
   d. Strongly Disagree

4) The postpartum education given at discharge influenced your decision to breastfeed.
   a. Strongly Agree
   b. Agree
   c. Disagree
   d. Strongly Disagree

5) The postpartum education given at the WIC office influenced your decision to breastfeed.
   a. Strongly Agree
   b. Agree
   c. Disagree
   d. Strongly Disagree

6) The postpartum education given by your medical provider influenced your decision to breastfeed.
    a. Strongly Agree
    b. Agree
    c. Disagree
    d. Strongly Disagree

Appendix F: Qualitative Survey of WIC Participants

1) When you went to your medical provider for the first prenatal visit, what did he/she say about breastfeeding?

2) When you went to the WIC office when you were pregnant, do you remember talking about breastfeeding? What did the staff tell you about breastfeeding?

3) Who was your biggest support person who helped you to decide how to feed your baby? Was that person with you when you delivered the baby? Are they still supportive of your decision?

4) Did anyone speak with you about breastfeeding when you delivered the baby? If so, who?

5) What was discussed about feeding the baby when you were discharged?

6) When you went to your medical provider after you delivered your baby what feeding information was discussed?

7) When you went to the WIC office after you delivered your baby what feeding information was discussed?

8) After you had your baby what feeding advice did you receive from your family and friends? How did that impact how you feed your baby?

9) After you had your baby did you reach out to any lactation resources for help? If so, which ones? Were they helpful? How?

10) How prepared do you think you were to breastfeed your baby when you first had him/her? How comfortable do you feel now? What do you think made you more (or less) comfortable?

11) What advice would you give to pregnant women about how to feed their new baby? What would you say about who they go to with questions they might have about infant feeding?

Appendix G: Demographic Survey of WIC Participants

WIC Office: _____Family ID#:_____

Please select the answer that best reflects your choice.

1) Did you participant in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) when you were pregnant?
   a. Yes
   b. No

2) Which baby did you most recently deliver?
   a. First
   b. Second
   c. Third
   d. Fourth or more

3) Which age group do you fall into?
   a. 18 to 25 years old
   b. 26 to 30 years old
   c. 31 to 35 years old
   d. 36 or older

4) Which race category are you?
   a. Black
   b. White
   c. Asian
   d. Hispanic
   e. Bi-Racial, Multi-Racial
   f. Other

5) What is your education level?
   a. Less than high school graduate
   b. High school graduate
   c. Some college completed
   d. College graduate
   e. Some graduate school completed
   f. Graduate school completed

6) What is your relationship with the baby's father?
   a. Married
   b. With the baby's father, but not married
   c. Married, but not with the baby's father
   d. Not with the baby's father
   e. Prefer not to answer

7) Where did you deliver your baby?
   a. Albert Einstein Hospital
   b. Hannheman/Drexel University Hospital
   c. Hospital of the University of Pennsylvania (HUP)
   d. Pennsylvania Hospital
   e. Temple University Hospital
   f. Thomas Jefferson Hospital
   g. Other: _____

8) Did you know how you wanted to feed your baby when you delivered him/her?
   a. YES
   b. NO

9) When did you decide on how you were going to feed your baby?
   a. When I was pregnant
   b. At delivery
   c. While I was at the hospital
   d. Someone else decided for me
   e. I cannot remember

10) Did you breastfeed while you were in the hospital?
   a. YES
   b. NO
   c. If NO, why not?

      _____

Appendix H: Approval Letter from Local WIC Director to Conduct Research

NORTH, Inc. Memorandum

TO: Walden University IRB

FROM: <redacted>, Executive Director *LMK*

DATE: August 21, 2018

RE: Authorization for Student to Conduct Research

As the Executive Director of <redacted> WIC Program in <redacted> County Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), I am giving Judith M. Khanuja authorization to interview WIC mothers as a part of the requirements for her dissertation project, "The Effects of Breastfeeding Support on WIC Breastfeeding Duration."

I have discussed the project with Judy at length and feel that it will provide documentation of the needs of the WIC breastfeeding population and address the barriers that the parents experience. This information will be helpful as we train entry level nutrition professionals to be more sensitive to the WIC parents as they make the best decision to feed their new infants.

If there are questions, please do not hesitate to contact me <redacted>.