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Breastfeeding Perceptions, Rates of Initiation, and Duration Among Urban and Rural Women

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Abstract

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Abstract

Breastfeeding is the optimal feeding method for infants up to the age of 2. Breast milk is suited to fulfill the nutritional needs of infants while providing immunological and neurological benefits. Breastfeeding rates of initiation and duration are low in the United States, especially in the state of Georgia. The purpose of this cross-sectional study was to investigate how breastfeeding initiation and duration, self-efficacy, perceptions, and community breastfeeding resources differ based on geographical location. The social ecological model was used as the theoretical framework for this study. An online and in-person survey that combined the Iowa Feeding Attitude Scale, Breastfeeding Self-Efficacy Questionnaire and The Breastfeeding in Public Survey was administered to 150 English speaking mothers aged 18 and older with a child 1 year or younger. The research questions were addressed using various statistical analyses (crosstabs, Mann Whitney U-test, and *t* test). The study results showed no differences in the odds of breastfeeding initiation and duration among mothers in urban and rural Georgia. No differences in breastfeeding perception or the use of breastfeeding community resources were observed. The results of this study contribute to social change by identifying the need to develop breastfeeding interventions that will address breastfeeding perceptions, community resources, and breastfeeding self-efficacy in urban and rural areas.

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Dedication

I am grateful to God who gave me strength and courage to endure this process. To my son Camari, I hope that I continue to be an inspiration to you as you are to me! I would like to express my extreme gratitude to everyone who encouraged me in helping complete this dissertation. Mom, thanks for your unwavering love and support. Thanks for always lending your ear to listen to my ups and downs, but most importantly, thanks for always fostering my dreams and aspirations. Checoby, Tangee and LaShanna thanks for pushing me and continuing to encourage me throughout this journey. Lastly, Courtne thanks for always wanting me to succeed and seeing the best in me when at times I didn't. I love you all.

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Chapter 1: Introduction to the Study

Introduction

Over the last couple of decades, there has been debate over the best feeding method for newborns/infants. Researchers have reported the health benefits that exclusive breastfeeding has on maternal and infant health outcomes. In studies conducted in the United States and internationally, scholars have shown that children who received only breast milk in their first year of life have lower rates of urinary tract infections (63%); lower respiratory tract infections (72%); upper respiratory infections (63%); decreased risk of diarrhea, reduction of infant mortality and morbidity, otitis media (50%); bacterial meningitis, botulism, sudden infant death syndrome (36%); gluten intolerance (52%); and bacteremia(American Pediatric Association [APA], 2012; Eidman, 2011). Additionally, breastfeeding is beneficial for premature babies because breast milk is associated with a reduction in retinopathy of prematurity and necrotizing enterocolitis (APA, 2012). Breast feeding has also been associated with improved cardiac development and function into adulthood (Lewandosuki, 2016). Moimaz et al. (2014) suggested that breastfeeding reduces the risk of oral caries and/or misaligned teeth in respects to limiting later orthodontic treatment. Breastfeeding has also been associated with improved brain development with higher IQs, education, and higher income (Belfort et al., 2016).

For mothers, breastfeeding is associated with improved postpartum weight loss; less blood loss following childbirth and improved healing; and decreased risk of rheumatoid arthritis, cardiovascular disease, breast cancer, ovarian cancer, and diabetes (AAP, 2012;(Belfort et al., 2016; NICHD, 2009; UNICEF, 2012). Mothers who have

successfully breastfed have had lower rates of postpartum depression (Borra, Lacovuum, and Sevilla., 2015). Researchers have promoted the inclusion of breastfeeding advocacy for the Breastfeeding on the Worldwide Agenda (UNICEF) and WIC Agenda for Breastfeeding Promotion Research. The public health agendas are becoming more focused on breastfeeding and were created for breastfeeding advocacy to be the voice of mothers who are breastfeeding. These public health agencies build support from policymakers, health care providers, businesses, and communities.

Exclusive breastfeeding is regarded as the "gold standard" for infant feeding, and all medical and public health entities endorse breastfeeding (World Health Organization [WHO], 2011). The Centers for Disease Control and Prevention (CDC, 2012) Healthy People 2020 (HP) includes the following breastfeeding objectives: to improve the health and wellbeing of women, infants, children, and family and, increase the proportion of mothers who breastfeed their babies (US Breastfeeding Committee, 2013).

The APA (2012) recommended that infants be exclusively breastfed for the first 6 months of life and that continued breastfeeding with the appropriate introduction of complementary foods continues for at least a year or more. The WHO (2013) recommended continued breastfeeding up to 2 years of age and beyond. Exclusive breastfeeding is providing infants with only "breast milk from the mother or a wet nurse or expressed breast milk and no other liquids or solids except for drops or syrups consisting of vitamins, mineral supplements or medicines" (WHO, 2012, p. 6).

Relatively low rates of breastfeeding initiation and duration exist in the United States and in the state of Georgia. Most mothers wean before the recommended 6 months

because of perceived difficulties (Ip, Yeung, Chow, Chair & Dennis, 2012). In the United States in 2011, 79% of newborn infants started to breastfeed ((CDC Breastfeeding Report, 2014), 2014). Yet, breastfeeding did not continue for as long as recommended. Of infants born in 2011, 49% were breastfeeding at 6 months and 27% were breast feeding at 12 months ((CDC Breastfeeding Report, 2014), 2014). The CDC reported that of infants born in 2011 40.1% were breastfeeding at 6 months in the state of Georgia and 26.7% were breastfeeding at 12 months (as cited in Miller, 2014).

Although breastfeeding rates are increasing, women are not initiating and continuing to breastfeed for the recommend 6 months or longer (U.S. Department of Health, 2011). Women have cited perceived difficulties with breastfeeding, including pain, difficulty initiating, concerns about infant satiety, the need to return to work, inadequate milk supply, and inadequate overall support for breastfeeding (Ahluwalia, Tessaro, Grummer-Strawn, MacGowan, & Benton-Davis, 2011; Li et al., 2008). Scholars have not examined what risk markers influence breastfeeding initiation and duration between residential locations, such as urban versus rural. This body of work is an effort address the current gap regarding breastfeeding practices in those regions among child-rearing mothers.

In Chapter 1, I introduce the background, problem statement, research questions, theoretical framework, and positive social implications.

Background

A lack of exclusive breastfeeding is a public health problem. In the United States in 2012, 76.9% of infants in the United States were breastfed (CDC, 2012). However,

47.2% of infants were breastfed at 6 months, which has decreased to 25.5% at 12 months (CDC, 2012).

Despite the increase in breastfeeding rates over the last 10 years and the health benefits associated with breastfeeding, numerous barriers to breastfeeding remain. Many women in the United States are aware that breastfeeding is the best source of nutrients for most infants, but some seem to lack knowledge about its benefits and are unable to cite the risks associated with not breastfeeding (CDC, 2012). McCann, Bayar, and Williams (2007) surveyed a national sample of women enrolled in WIC and reported that only 36% of participants thought that breastfeeding would protect the baby against diarrhea. In addition, only a quarter of the U.S. public agreed that feeding a baby with infant formula instead of breast milk increases the chances that the baby will get sick (Li, Rock, & Grummer-Stramm, 2007). Additionally, information regarding breastfeeding and infant formula is rarely provided to the women's during their prenatal visits (Moore, Anderson, & Bergman, 2007). Many people, along with health professionals, incorrectly believe that because the commercially prepared formula has been enhanced, infant formula is equivalent to breast milk in terms of its health benefits (McFadden & Toole, 2007).

Many risk markers contribute to initiation and duration of breastfeeding among women of all races/ethnicities, especially to the recommended duration of 6 months, 1 year, or longer (WHO, 2012). According to the APA (2010), 71% of United States women initiate breastfeeding, and only 35% of women breastfeed for 6 months; falling short of the Healthy People 2010 goal of 50%. It is important to recognize the health benefits of breastfeeding in regard to infant health (WHO, 2012). Breastfeeding initiation

rates are lower among Black women (60%) compared to other ethnic groups (CDC, 2012). Hispanic and Asian women are meeting the Healthy People 2020 goal with breastfeeding initiation goal of 81.9% whereas Native American (77%) and White women (79%) are close to attaining the goal (Chapman & Perez-Escamilla, 2009). Even with the initiating goals, no ethnic group is meeting the HP2020 goals sustaining breastfeeding past 6 months.

There is limited research on breastfeeding initiation and duration based on residential location. Most studies have been based on nonrepresentative samples and have been limited in its ability to compare racial/ethnic differences in breastfeeding initiation based on residential location (Sparks, 2010). However, Flowers, Willougby, Cadigan, and Perrin (2008) suggested that initiation of breastfeeding may be more frequent among urban women (59%) compared with rural women (49%), and potential differences in breastfeeding rates in urban and rural areas have been infrequently explored. Flower et al. suggested that "More recent studies have not similarly directly compared breastfeeding rates in urban and rural women breastfeeding and the potential differences in breastfeeding rates in urban and rural areas have been infrequently explored" (p. 3).

Chatterij et al. (2004) and Taveras et al. (2003) suggested that breastfeeding initiation and continuation in urban communities may be influenced by several factors including support for the health system, maternal depression, participation in WIC programs, and return to work or school. Rural communities may differ in factors in regard to breastfeeding initiation and continuation from their urban counterparts due to lack of health insurance; poverty; limited access to hospital-based services; and other

shared characteristics, such as geographic isolation, few economic resources, and limited access to health care (Flower et al., 2008), which may or may not result in distinct influences on women's infant feeding decisions (Clark, Savitz, & Randolph, 2001). These differences can play a role in patterns that may or may not influence breastfeeding initiation in urban and rural communities.

Problem Statement

The state of Georgia has 159 counties with 110 being rural. Throughout the state of Georgia, health disparities between the two geographical regions are apparent. In rural Georgia, Georgians are older, poorer, and sicker than their urban counterparts (Georgia Department of Community Health, 2012). Many more Georgians live in urban areas (70%) than in rural areas (30%; Georgia Department of Community Health, 2012). Although the state's smaller rural population masks its social circumstance, the conditions in rural areas affect the state's overall productivity, health, and health care costs (Georgia Department of Community Health, 2012). Although breastfeeding is considered to be the optimum feeding method for babies, Georgia lags in breastfeeding data measures (Georgia Department of Public Health, 2016).

Residential location can play a role in breastfeeding initiation and duration. Within the residential locations of urban and rural, breastfeeding practices vary by location with racial and ethnic groups (APA, 2005; Sparks, 2010). According to the APA (2005), the highest breastfeeding rates are among children living in urban areas; conversely, the lowest rates of breastfeeding have been seen among children living in

rural areas. In this study, I investigated the perceived barriers from both geographical regions.

Although there have been numerous studies on the factors associated with breastfeeding, there is an absence of studies on urban and rural disparities for breastfeeding in Georgia. Research is limited on breastfeeding behaviors in urban and rural areas as looking for determinants of breastfeeding initiation and duration. There are differences between urban and rural rates of breastfeeding initiation and duration (Sparks, 2010); however, most research has only been based on nonrepresentative samples and has been limited in comparing racial/ethnic differences in breastfeeding initiation and duration based on residential location (Sparks, 2010).

Only a few scholars have looked at trends of urban and rural breastfeeding initiation and have suggested that rural women, particularly non-Hispanic Blacks, have lower odds of breastfeeding when compared to their urban counterparts (Sparks, 2010). Scholars have not determined what potential barriers are preventing women of all races and ethnicities in rural areas from initiating breastfeeding; research is limited on duration for breastfeeding continuation in urban and rural areas. Knowledge of these disparities would allow for breastfeeding initiation and duration outreach efforts that will target racial/ethnic backgrounds, particularly targeting race and ethnic groups that may lag behind of meeting the Healthy People 2020 Objective.

Purpose Statement

The purpose of this quantitative study was to examine the differences in breastfeeding perception, breastfeeding community resources, breastfeeding self-efficacy,

and rates of initiation and duration among urban and rural women of Georgia using a cross-sectional study design. I wished to understand these differences to determine predictors of breastfeeding among women who live in urban and rural Georgia that could lead to strategies that will help Georgian women reach the CDC Healthy People 2020 objective and improve health outcomes for mothers and infants. This research has the potential to create public health interventions; assist in breastfeeding initiatives; and help health care workers, community-based organizations, hospitals, physicians, and child-rearing mothers to improve health outcomes.

Research Questions and Hypothesis

This quantitative cross-sectional study was designed to examine the differences in breastfeeding perceptions, breastfeeding self-efficacy, breastfeeding community resources, and the odds of initiating and sustaining (duration) breastfeeding and how they may be different based on residential location (urban and rural) Georgia.

1. Do rural women have different odds of initiating and sustaining breastfeeding than their urban counterparts?

$H_0$1: Rural women do not have the same odds of initiating and sustaining breastfeeding as their urban counterparts.

H_a1: Rural women do have the same odds of initiating and sustaining breastfeeding as their urban counterparts.

2. Do women in rural areas have higher levels of breastfeeding self-efficacy than women in urban areas?

$H_0$2: Women in rural areas do not have higher levels of self-efficacy than women in urban areas.

H_a2: Women in rural areas do have higher levels of self-efficacy than women in urban areas.

3. Do women in urban areas use their available and local community breastfeeding resources more often than rural women? Please list resources.

$H_0$3: Women in urban areas do not use more of their available and local community breastfeeding resources more often than rural women.

H_a3: Women in urban areas do use more of their available and local community breastfeeding resources more often than rural women.

4. Are there differences in breastfeeding perceptions among women in urban and rural areas?

$H_0$4: There are differences in breastfeeding perceptions among women in urban and rural areas.

H_a4: There are no differences in breastfeeding perceptions among women in urban and rural areas.

Theoretical Framework

According to the social ecological model (SEM), no single factor can explain why some women may initiate and sustain breastfeeding. This model was developed and used by many public health entities to promote public health agendas and research by addressing all levels of social and environmental influences on an individual's health behaviors (McLeroy, Bibeau., Steckler., & Glanz, 1988). The SEM framework was used

to evaluate the relationship between risk markers and breastfeeding outcomes (see Chapter 2). Previous scholars in other states who have looked at geographical locations, such as urban and rural, used the SEM. Based on the SEM, it could be hypothesized that early identification of known or suggested risk markers toward breastfeeding outcomes could create and foster healthy breastfeeding environments and encourage breastfeeding initiation and duration within Georgia. The SEM includes each level of interaction with equal importance. These categories may overlap, especially when using this model to address issues with breastfeeding initiating and sustainability (Raffle, Ware, Borchardt, & Strickland, 2011).

According to Raffle et al. (2011), the various levels of SEM can create changes that can influence individual's behaviors directly and indirectly. According to the SEM, interpersonal breastfeeding can be viewed as the outcome of interaction among many factors at five levels: (a) individual (interpersonal) beliefs, barriers, needs, inadequate knowledge, embarrassment, social reticence, negative perceptions and experiences to breastfeeding; (b) relationship/interpersonal- in direct contact, social networks, self-efficacy, and support systems, such as family, friends, health care providers, perceived threat to father-child bond and work groups (Rattle et al., 2011); (c) organizational/institution-return to work or school, lack of workplace facilities, unsupportive health care environments; (d) community- discomfort about nursing in public and places to nurse/express with hand washing facilities and refrigerator (Weiner & Weiner, 2011); and (e) policy- protect against aggressive advertising of infant formula, maternity paid leave, and flexible work schedule (WHO, 2015).

The U.S Department of Health and Human Services (2011) determined that environmental factors influence mothers directly and may influence her ability to engage in healthy behaviors, which impacts the infant's health. Identifying risk markers related to breastfeeding at each level of the social-ecological can increase the likelihood of making a positive impact on mothers toward breastfeeding (Raffle et al., 2011).

Nature of the Study

In this study, I used a quantitative cross-sectional design. The design was selected based on its ability to compare multiple variables at the same time (ie., age, race, and education level in relation to breastfeeding initiation and duration). This design allowed me to examine first-order associations for key factors of interests, such as geographical locations (urban and rural). This design allowed for the use of diverse groups that may differ in variables of interests (age and race) but share other characteristics such as educational backgrounds and ethnicity (Sedgwick, 2013). For the data collection process, WIC facilities and the use of lactation consultants were used for data collection.

Operational Definitions

The following terms and acronyms were used in this dissertation:

Any breastfeeding: The feeding of an infant or young child of any mother's breast milk, including expressed breast milk (APA, 2012).

Baby Friendly Hospital Initiative: Launched in 1991 is an effort by UNICEF and the WHO to ensure that all maternities, whether free standing or in a hospital, become centers of breastfeeding support (UNICEF, 2015).

Breastfeeding: The feeding of breast milk to an infant straight from the female human breasts (WHO, 2003).

Breastfeeding initiation: Having initiated breastfeeding within 48 hours of birth; either the mother puts the baby to the breast or the baby is given any of the mother's breast milk (UNICEF, 2015).

Breastfeeding duration: The numbers of weeks a mother breastfeeds or pumped breast milk up to the time of the interview, and it is listed as breastfed 8 or more weeks (Washington State Health Department, 2014) of exclusive breastfeeding for 6 months (26 weeks) of an infant's life (UNICEF, 2015).

Education level: Education was based on the highest-grade level completed by the individual, which included Grades 7-12, trade school, technical school, some college, baccalaureate, and graduate school.

Exclusive breastfeeding: Exclusive breastfeeding means that the infant receives only breast milk. No other liquids or solids are given–not even water–with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals, or medicines (WHO, 2012).

Formula feeding: Infant formula is a manufactured food designed and marketed for feeding to babies and infants under 12 months of age, usually prepared for bottle-feeding or cup-feeding from powder (mixed with water) or liquid (with or without additional water).

Partial breastfeeding: "Giving a baby some breastfeeds, and some artificial feeds, either milk or cereal, or other food" (WHO, 2012, p. 6).

Pumped milk or expressed milk: Milk pumped using an electric breast pump machine or via hand and stored at appropriate temperatures until ready for use; milk could also be expressed by a wet nurse (WHO, 2015).

Rural areas: Consist of all territory, population, and housing units located outside of urbanized areas and urban clusters (U.S. Census Bureau, 2013).

Self-reported breastfeeding practices: Women indicating which method was used to feed infant/child (e.g., formula, exclusive breastfeeding, and partial feeding [formula and breastfeeding]).

Special Supplement Nutrition Program for Women, Infants, and Children (WIC): A federally funded health and nutrition program for infants and children age 1 to 5 years (including foster children), pregnant women, breastfeeding mothers (up to 1 year), and postpartum women (up to 6 months; GA DPH, 2014). For the purposes of this study, the WIC program was used as a designated facility for self-administered questionnaires and finding participants.

Urban areas: A central city and the surrounding densely settled territory that together have a population of 50,000 or more and a population density generally exceeding 1,000 people per square mile (U.S. Census Bureau, 2013).

Description of Research Variables

The research variables in this study were based on previous research and the gap in the literature. The independent and dependent variables are described below:

The dependent variables were the following:

Breastfeeding initiation: Having initiated breastfeeding within 48 hours of birth; either the mother puts the baby to the breast or the baby is given any of the mother's breast milk (UNICEF, 2015).

Breastfeeding duration: The number of weeks a mother breastfeeds or pumped breast milk up to the time of the interview, and it is listed as breastfed 8 or more weeks (Washington State Health Department, 2014) of exclusive breastfeeding for 6 months (26 weeks) of an infant's life (UNICEF, 2015).

The independent variables were the following:

Maternal race: The race of the mother (e.g., Black, White, Asian, American Indian/ Alaska Native, Hawaiian Native and Pacific Islander, or mixed race).

Maternal ethnicity: The ethnicity of the mother as Hispanic or Latin American.

Maternal residence: Urban or rural; urban-includes a central city and the surrounding densely settled territory that together have a population of 50,000 or more and a population density generally exceeding 1,000 people per square mile (U.S. Census Bureau, 2013). R*ural areas* consist of all territory, population, and housing units located outside of urbanized areas and urban clusters (U.S. Census Bureau, 2013).

Community breastfeeding resources: Resources that are available to breastfeeding mothers in their local areas can use to help and encourage breastfeeding practices, such as local health care professionals, breastfeeding coalitions, WIC Programs, La Leche League, Maternal and Child Health Bureau, workplace accommodations, workplace policies, and policies regarding breastfeeding.

Perceptions of breastfeeding: Feelings and views from mothers on breastfeeding and mothers' views about the benefits and potential barriers to breastfeeding.

Self-efficacy: Refers to the individual's belief in his or her capacity to execute behaviors necessary to produce performance attainments. Self-efficacy also reflects confidence in the ability to exert control over a person's own behavior, motivation, and social environment (Bandura, 1977, 1994).

Covariate variables were the following:

Maternal age: The mother's age at the time of sampling.

Maternal education: The number of years of education.

Maternal status: Whether the mother is single, married, separated, or divorced.

Maternal income: The total household income before taxes. Above or below the poverty line.

Assumptions

In this study, self-reported feeding methods, breastfeeding practices, breastfeeding self-efficacy, and community breastfeeding resources associated with breastfeeding outcomes were obtained using various questionnaires. Self-reported information can be inaccurate, and it can be affected by social desirability and recall bias (Wong, Tarrant, Luan-Lok, 2013). In this study, several assumptions were applied:

1. Respondents will self-report accurate and truthful information on actual feeding practice

2. It is assumed that mothers are aware of the benefits of breastfeeding for infant/child.

3. Accurate information regarding breastfeeding and support will enhance self-efficacy and result in positive breastfeeding outcomes.

Limitations

There were several limitations of this study. First, access to information about this topic was limited because there were no previous published studies about breastfeeding initiation and duration for residential location in the state of Georgia. Most research used for this study were conducted over 5 years ago. Second, the questionnaire required mothers to self-report infant feeding practices, and some respondents may not accurately disclose this information or report false information. The study was for English speaking women. The data collected at WIC facilities may have limited certain demographics, which limited the generalizability of the result. Therefore, using a cross-sectional design can make it difficult to make a causal inference (Bland, 2001); the use of a quantitative study, in general, requires large sample sizes and may result in logistical difficulties in gathering sufficiently large sample before the study gets started (Creswell, 2003). According to Hennekens and Buring (2009), the primary limitation of cross-sectional design is the susceptibility to bias due to low response and the classification due to recall bias.

Scope and Delimitations

The scope of this study was delimited to examining breastfeeding perceptions, breastfeeding self-efficacy, breastfeeding community resources, and the odds of initiation and sustaining (duration) in urban versus rural areas of Georgia. I wished to determine if

breastfeeding rates are different based on residential locations and, if so, what potential breastfeeding barriers are associated with breastfeeding mothers in those corresponding areas. I did not intend to observe breastfeeding behaviors or breastfeeding mothers' attitudes toward breastfeeding.

Significance of the Study

Breastfeeding rates in urban and rural areas of Georgia continue to lag national averages (CDC, 2012). Breastfeeding rates, initiation, and duration of breastfeeding has been researched throughout Georgia; however, scholars have not examined the different risk markers related to breastfeeding initiation and duration in urban and rural areas. In the state of Georgia, the percentage of infants breastfed increased from 64.8% in 2007 to 70.3% in 2011 (Georgia Department of Public Health, 2014). However, the percentage in Georgia was lower than the national average forever breastfed at 79.2% (CDC, 2014). As of data collected in 2011, an increase of over 16% is needed in Georgia to meet the HP2020 goals for breastfeeding (CDC, 2014).

This research is important in determining differences in urban and rural rates of breastfeeding. Although national and local data on women's health and outcomes according to geographical location are limited, there are disparities for rural women (Georgia Department of Community Health, 2011); rural Georgians living are faced with the same diseases as other Georgians, but they tend to suffer at higher rates of morbidity (Georgia Department of Community Health, 2011). According to maternal health outcomes for women in rural areas, when compared with urban areas, prenatal care initiation in the first trimester was lower in rural areas when compared to their

counterparts' urban (United States Health and Human Services Agency for Healthcare Research and Quality, 2012). Mothers may not receive the right information regarding breastfeeding and the benefits for mother and child if no prenatal care was done.

The results of this research can provide insight into perceived barriers that may affect breastfeeding initiation and duration among women in urban and rural areas. This research can help to achieve the Healthy People 2020 objective for breastfeeding and to create a collaborative partnership from many state and local health entities to find better ways to gather information from women about their breastfeeding routines and challenges. In addition, the results of this study can be used to find ways to reduce disparities to overcome barriers regarding breastfeeding initiation and duration.

Insights from this study could aid public health interventions/programs, clinicians (lactation consultations & OBGYN), peer supporters, WIC clinics, health educators, and families (spouses, mothers, and fathers) in achieving breastfeeding initiation. This research will contribute to the development of curricula for medical schools and educational programs for other health professionals and in health science programs to examine breastfeeding initiation and duration.

Social Change Implications

The positive social implications of this study are to increase public information illustrating the benefits of breastfeeding, fostering environments for breastfeeding mothers, and improving breastfeeding initiation and duration among child-rearing mothers. This study may impact breastfeeding rates in many geographical locations through early identification of mothers at risk for not breastfeeding and/or for early

cessation. Early identification of populations who may face risks and barriers can be followed by prevention programs that will aid mothers in creating long-terms results in hopes of reaching HP2020 goals for breastfeeding, reducing infections/diseases associated with never breastfed infants, reduced medical care costs, and contributing to a more productive workforce for breastfeeding mothers.

Summary

The purpose of this study was to examine the perceived barriers from child-rearing mothers that may affect breastfeeding initiation and duration from urban versus rural areas in the state of Georgia. The APA (2012) recommended that babies be exclusively breastfed for about the first 6 months of life, with no additional foods (except Vitamin D) or fluids unless indicated by a medical physician. The benefits of breastfeeding are multifaceted, and the benefits that breastfeeding (human milk) including expressed and pumped milk has on infant and mothers extend beyond those maternal and infant health into society.

Despite the evidence suggesting the superiority of breast milk, many women choose to forgo breastfeeding and bottle feed their infant or cease breastfeeding altogether and not adhering to the APA's (2013) recommendations. Several challenges may correspond to the cessation of breastfeeding or impede the breastfeeding decision, such as age, education, race, employment, workplace accommodation, support, and confidence to perform breastfeeding.

Chapter 2 will include a review of the literature on breastfeeding initiation, barriers to breastfeeding, and geographical isolation. I will also discuss the theoretical

framework. The methodology will be discussed in Chapter 3, including research design, setting and population, sampling method, data collection, and ethical consideration. The fourth chapter will include the analysis of the data collected. Lastly, the concluding chapter will include the summary, conclusions, limitations, discussion and implications of findings, and future recommendations for further studies.

Chapter 2: Literature Review

Organization of the Review

In this literature review, I will address the risk markers associated with breastfeeding initiation and duration and the impact that these risk markers have on a mother's decision to breastfeed and to continue to breastfeed in urban and rural locations. I will explore the nature of breastfeeding, benefits of breastfeeding, breastfeeding definitions, and barriers associated with breastfeeding and breastfeeding rates. In addition, I will describe the theoretical framework, the SEM, to investigate how constructs of this model have been applied to studies of breastfeeding initiation and duration. Consequently, I will explore previous research on health behaviors associated with breastfeeding. Lastly, a review of previous interventions grounded in evidenced-based research and methodologies will be presented. The chapter will conclude with a summary of literature reviewed.

Data Sources and Searching the Literature

The literature review was conducted using relevant literature that was identified through several databases and search engines such as CINAL, PUBMED, Psych Info, Academic Search Premier, EBSCOhost, Educational Resource Information Center (ERIC), MEDLINE, Healthsource: Nursing/Academic Educational Resource Information, and Google and Google Scholar. The following keywords were used in combination or singly to gather the most relevant literature: *breastfeeding, breastfeeding rates, breastfeeding initiation, breastfeeding duration, race, ethnicity maternal age, socioeconomic status, SEM, breastfeeding self-efficacy, policies for breastfeeding,*

workplace accommodations, public breastfeeding, urban population, rural population, infant feeding methods, and cross-sectional. The search was narrowed down to current information, and the years 2008 -2015 were reviewed with years earlier than 2008 including as seminal review. Some literature was used beyond the 5-year publication due to limited research on the current topic. I included over 55 peer-reviewed articles including qualitative and quantitative studies to build a concrete perspective on factors/risk markers influencing breastfeeding initiation.

Sociodemographic Characteristics for Breastfeeding Mothers

Race and Ethnicity

Race plays a part in breastfeeding. Understanding how race contributes to breastfeeding initiation and duration depends on understanding the underlying risk markers contributing to racial/ethnic differences in breastfeeding. In the United States, there are racial/ethnic differences in breastfeeding rates (CDC, 2010). To monitor how states approached the HP 2010 objectives for breastfeeding initiation and duration among different racial/ethnic groups, the CDC (2013) analyzed data from the National Immunization Survey (NIS) for children born during 2003-2006; of the mothers who sampled within the NIS data, 75% had initiated breastfeeding, 43% were breastfeeding at 6 months, and 22.4% were breastfeeding to 12 months or longer. Among the mothers of Hispanic and Latino descent, 2,895 had breastfeeding rates at 80.6%, 46.0%, and 24.7% for initiating and sustaining breastfeeding, while rates for Black or African American mothers (2,606) were 59.7%, 27.9%, and 12.9% (CDC, 2013).

The CDC National Immunization Survey (CDC, 2010) showed that non-Hispanic Blacks had a lower prevalence of breastfeeding initiation than non-Hispanic Whites in all but two states; Hispanics had a lower prevalence than non-Hispanic Whites in Western states and higher in Eastern states. According to the CDC Breastfeeding MMWR (2010), 54.4% of African American mothers, 74.3% of White mothers, and 80.4% of Hispanic mothers attempted to breastfeed.

Breastfeeding rates continue to lag for African American mothers living in the Southeast (CDC, 2010). In 13 states, primarily Southern states, African American mothers have a 20% lower rate of breastfeeding initiation then white breastfeeding mothers (CDC, 2010). In six states (Alabama, Arkansas, Kentucky, Louisiana, Mississippi, and South Carolina), the prevalence of breastfeeding initiation among African American women was less than 45% (CDC, 2010). In the state of Georgia, the rates for Hispanic breastfeeding initiation was 76.5% for 6 months and 42.9% for 12 months; for White, non-Hispanics, the breastfeeding initiation rates were 38.1% for 6 months and 17.2% for 12 months; for Black non-Hispanics, the breastfeeding initiation rates were 27.3% for 6 months and 11.8% for 12 months (CDC, 2010). According to the CDC (2010), in Georgia 68.2% of mothers ever breastfeed, 31.8% of mothers breastfed for at 6 months, 12.9% of mothers breastfed for 12 months, 22.2% of mothers breastfed exclusively for 3 months, and 6.2% of mothers breastfed exclusively for 6 months. From 2007 to 2010, there is a decline in percentage for breastfeeding initiation and duration.

According to the CDC (2010), Hispanic women had the highest breastfeeding rate among all racial/ethnic groups, with 80% initiating breastfeeding immediately after birth

and 45% continuing for at least 6 months later. In respects to the HP2010 goals, 71% of the U.S. women initiated breastfeeding and only 35% of women breastfed for 6 months (AAP, 2005). Subsequently, breastfeeding initiation rates are still low for Black women (60%) when compared to their counterparts (Chapman & Perez-Escamilla, 2012). Hispanic and Asian women are currently meeting the HP2020 goals for breastfeeding initiation of (81.9%, whereas Native Americans and White women are close to attaining the goal (Chapman & Perez-Escamilla, 2012). The widest range of variation with breastfeeding initiation by ethnicity is reflected at any breastfeeding at 6 months postpartum (Chapman & Perez-Escamilla, 2012). However, no ethnic groups are meeting the HP2020 goals for sustaining breastfeeding past 6 months (Chapman & Perez-Escamilla, 2012).

When examining breastfeeding rates up to 6 and 12 months, Asian women have the highest rates of breastfeeding, whereas Black women have the lowest (Chapman & Perez-Escamilla, 2012). Chapman and Perez-Escamilla (2012) stated that rates of any breastfeeding at 6 and 12 months among Hispanic, Native American, and White women are similar, but still needs improvements in attaining the HP2020 goals at 6 months and 12 months.

Within the United States, 24% of breastfed babies receive formula supplementation within 2 days of life (CDC, 2007). This practice is most common among Black (32%) and Hispanic (33%) infants (Chapman & Perez-Escamilla, 2012). Regarding supplementation, no ethnic group is meeting the HP2020 goal for the reduction of breastfed infants of 2-day-olds receiving formula. Chapman and Perez-Escamilla (2012)

reported that exclusive breastfeeding rates at 3 and 6 months' postpartum follow a similar pattern with the lower rates observed among Black women. Some other potential breastfeeding outcomes among Blacks and Hispanics women include breastfeeding ambivalence (Kaufman, Deenadaylan, & Karpati, 2010), the availability of free formula from WIC (Chapman & Perez- Escamilla, 2012), high levels of comfortability with formula feeding, limited availability of WIC breastfeeding support for minority women (Evans, Labbok, & Abrahams, 2011), and surrounding issues of trust and perceived mistreatment of providers (Chapman & Perez- Escamilla, 2012). The disproportionate numbers of breastfeeding initiation and duration among child-rearing mothers in the United States shows the populations who need improved breastfeeding outcomes.

Maternal Age

Rates of breastfeeding initiation and duration can be influenced by several underlying risk markers, such as maternal age. Young mothers are less likely than older mothers to breastfeed their infants (ChildTrendsDatabank, 2014). The biggest influences on breastfeeding stem from social relationships, social support, and the physical demand for breastfeeding (Doshier, 2014; Nesbitt et al., 2012). Additionally, the mother's knowledge of breastfeeding and her capabilities of performing this behavior should be considered. Adolescents who are in the role of motherhood may need to develop and achieve self-concept, role attainment, and decision-making skills to determine whether to breastfeed and how long she will breastfeed her baby (Doshier, 2014; Nesbitt et al., 2012).

Mothers who are 30-years-old or older are most likely to breastfeed than mothers between the ages of 20-29. Mothers who are older than 30 had initiation rates of 79.3% for always breastfeeding, 50.5% for breastfeeding at 6 months, and 27.1% for breastfeeding 12 months or longer (CDC, 2013). Younger mothers' rates for breastfeeding were 69.7%, 33.4%, and 16.1%, respectively (CDC, 2013). Biro, Yelland, and Brown (2014) showed that younger women were just as likely as older women to initiate breastfeeding within the first week.

Maternal Education and Marital Status

Maternal education is an additional factor to consider when examining breastfeeding practices. Mothers with a college degree or postgraduate degrees are most likely to have ever breastfed (88.3%) and to continue to breastfeed (US Department of Health and Human Services, 2011). Two-thirds of infants born to mothers with high school diplomas were likely to breastfeed or breastfeed at all (US Department of Health and Human Services, 2011). According to Reat, Crixell, Von Bank, Thornton, and Friedman (2014), of infants born in 2010, 91% of mothers with a college education ever breastfed their infants, compared to 81% of those with some college education, and 69% for those with a high school degree and those with less than a high school degree. In addition, 68% of mothers with college education breastfed for 6 months, while 46% with some college education, and 38 and 34% breastfed compared to mothers with high school degree and less than a high school degree (Reat et al., 2014).

In relation to breastfeeding duration, 59.9% of college graduates continued breastfeeding at 6 months and 31.1% continued to breastfeed at 12 months when

compared to high school graduates (CDC, 2013). High school graduates with no college experience breastfeed at 31.4 % at 6 months and 25.1% at 12 months (CDC, 2013). In China, Liu et al. (2013) found that mothers with higher education levels were less likely to breastfeed their infants than mothers with lower levels of education. Mothers with higher levels of education had professional careers that make it more difficult to exclusively breastfeed (Li et al., 2013). Additionally, having a higher income based on education levels allows mothers to buy breast milk substitutes, such as formula (Li et al., 2013). The CDC (2013) showed that mothers with more education were more likely to breastfeed; yet, Li et al. suggested that Chinese women with higher educations did not have higher rates of breastfeeding due to having professional careers. Women who have less schooling are less likely to receive or seek out information regarding infant feeding or are less likely to understand and use the information they do receive in helping decide which feeding method is ideal for their situation (CDC, 2013). Therefore, prenatal health promotion materials should target women with different education levels and lower literacy (CDC, 2013).

Mothers who are married are significantly more likely to breastfeed their infants than nonmarried mothers (U.S Department of Health, 2011). On national levels, the CDC (2011) reported that 87% of infants born in 2011 to married women were breastfed, compared to 67% being breastfed who were born to unmarried mothers. Married Black women are twice as likely to have breastfed than unmarried Black women (Brand, Kothari, & Stark, 2011). In Scotland, Ajetunoobie et al. (2014) established that infants

who were born to married parents were significantly more likely to breastfeed than infants of single or cohabitating parents.

Socioeconomic Status and Breastfeeding

In addition to maternal race, age, and education, socioeconomic status (SES) of the mother plays a role in breastfeeding rates. In the United States, SES varies across the country by race and ethnicity. African Americans and Hispanics persons are disproportionately represented among the lower SES, while Asian persons and White persons are represented among the higher SES groups (Wen-Chi, Wu, & Chiang, 2015). Associations between breastfeeding and SES are complex and challenging because SES is a contingency for other risk markers that may hinder breastfeeding initiation and duration (ie., knowledge, attitudes, beliefs, and experiences that may lead a woman to an infant feeding choice).

Education and employment have been associated with SES and breastfeeding. Women who have more than a high school diploma were more likely to research infant feeding practices and the pros and cons of breastfeeding versus formula feeding. However (CDC, 2013), maternal income has been shown to affect breastfeeding because maternal income is associated with employment, which may affect if a woman decides to breastfeed (CDC, 2013; Heck, Braveman, Cubbin, Chávez, & Kiely, 2006). Income may influence breastfeeding as being a marker of knowledge and attitudes because women who have higher incomes tend to be more knowledgeable about infant feeding practices and may be able to afford feeding supplies (CDC, 2013; Heck et al., 2006). When compared to women of lower SES, the ability to afford formulas is inversely associated

with the use of formula, perhaps because public programs such as WIC allow for low SES women to purchase formula (CDC, 2013; Heck et al., 2006).

Employment may decrease breastfeeding in women with low SES because they lack workplace accommodations for expressing breast milk and because some may work in hazardous conditions that might affect their breast milk (CDC, 2013; Heck et al., 2006). Women with a higher SES are more likely to work in a facility that supports breastfeeding mother and/or home environments. SES is associated with attitudes toward breastfeeding, which reflects experiences with health care providers or peer groups, whose opinions the mother may value (CDC, 2013; Heck et al., 2006).

Wen-Chi, Wu, and Chiang (2015) found that high SES is associated with a greater likelihood of breastfeeding in Canada, United States, New Zealand, and Australia. In Taiwan, high maternal education is associated with the greater likelihood of breastfeeding (Chuang et al., 2007; Wen-Chi, Wu, & Chiang 2015). In China, maternal education and household income were negatively associated with breastfeeding and, in Hong Kong, a positive relationship was shown between education and breastfeeding but showed a negative relationship between income and breastfeeding (Wen-Chi, Wu, & Chiang, 2015). In addition, in five Southeast Asian countries, low maternal education was associated with increased risk of nonexclusive breastfeeding in Vietnamese and Cambodian mother; high household wealth was associated with an increased risk of nonexclusive breastfeeding in Indonesian mothers (Wen-Chi, Wu, & Chiang, 2015). These findings underline how the relationship between SES and breastfeeding are different between countries.

In the United States, infants born to mothers in 2011 living below the poverty line were less likely to breastfeed and were less likely to continue breastfeeding when compared to those with higher incomes (CDC, 2011). In the state of Georgia in 2011, 91.4% with an annual income of less than $10,000 who received prenatal care reported a doctor, nurse, or another health care worker talking to them about breastfeeding their baby, compared to 95.6% in $10,000-$24,999, 90.3% in $25,000-$49,999, and 83.9% in $50,000 and over (CDC, 2011). The U.S. rates in 2011 for mothers living below the poverty line was 71% when compared to 78% of mothers living at 100 to 199% of the poverty line, 86% of mothers living at 200 to 399% of the poverty line, and 91% of mothers at 600% of the poverty or greater for breastfeeding at 6 months (CDC, 2011).

Employment for Breastfeeding Mothers

Parttime Versus Fulltime

Despite the benefits that breastfeeding offers mothers and their children, rates of breastfeeding initiation and duration are still low in the United States. Many risk markers contribute to breastfeeding initiation and duration, and employment is cited as a barrier to breastfeeding. Balkam, Cadwell, & Fein (2010) reported that maternal employment has been described as a barrier to breastfeeding in numerous studies across many countries and cultures. According to Balkam, Cadwell, & Fein (2010), the United States Department of Health and Human Services Blueprint for Action on Breastfeeding singled out the workplace as one of the most important barriers to breastfeeding for women in the United States. About 70% of employed mothers in the United States whose children are under the age 3 works full time (Balkam-Johnson et al., 2010). One-third of the women

returned to work within 3 months and two-thirds returned within 6 months of their infants' birth (Balkam, Cadwell, & Fein, 2010). When compared to other developed countries, the United States is slow in initiating policies for supporting parents who choose to breastfeed and return to the workforce. Although more mothers are breastfeeding and returning to work, researchers have not documented the variations of breastfeeding initiation and duration based on full-time and part-time employment (less than 35 h/week) work status (Mandal, Roe, & Fein, 2010).

As stated previously the APA recommends breastfeeding for ≥ 12 months, and longer as desired (APA, 2010). For mothers going back to work, this can seemingly pose a significant barrier. The combination of working and breastfeeding may require considerable lifestyle changes. These changes may or may not hinder breastfeeding initiation, but mothers might be concerned about leaving their child/children in daycare or someone else's care. When mothers choose to breastfeed while working she must be near her infant or pump and store her milk while at work. Moreover, it is vital to evaluate mothers reentering the labor force and the impact that employment has on breastfeeding mothers.

The U.S. does provide breastfeeding mothers with the opportunity to use the Family and Medical Leave Act (FMLA) which provides up to 12 weeks of unpaid leave for both women and men following the birth of a child. This act is providing substantial support to families, but families in other developed countries, such as Ireland receive 18 weeks of leave at 70% pay and families in Sweden receive up to 480 days of leave at 90% pay, Norway with 42 weeks at 100% of salary; France, with 16 weeks a 100%

salary, and Germany with 14 weeks at 100% of wages (Galtry, 2003; United Nations Statistics Division, 2009).

Mandal et al. (2010) used longitudinal data from the Infant Feeding Practices Study II, collected between 2005 and 2007, for over 1400 mothers were used. Mandal et al. (201) concluded that fulltime employment decreased both breastfeeding initiation and duration relative to not working. The study found that parttime employment expectations of less than 20 h/week marginally increased initiation relative to full-time work expectations, while any level of part-time employment upon return to work (<35h/week) increased breastfeeding duration relative to full-time employment, whether the mother returned to work before or after 12 weeks (Mandal et al., 2010). According to Mirkovic et al. (2014), mothers who work full-time were less likely to initiate breastfeeding 55.0% in comparison to part-time mothers 66.3%.

Data from the Early Childhood Longitudinal Study-Birth Cohort (2011) investigated the effects of the occupational type and postpartum employment on breastfeeding initiation. The study concluded that mothers with babies 9 months of age (n= 4,500) breastfed at (66.8% and 27.6%, respectively). This data showed higher rates of breastfeeding for mothers who were parttime employed had initiation rates of 71.9%, and a considerable number of mothers were still breastfeeding at 6 months (Ogbuanu et al., 2011).

Nonetheless, full-time employment status is negatively correlated with breastfeeding initiation and duration, suggesting that employment status is a significant barrier to breastfeeding (Mandal et al., 2010). This correlation from Mandal et al. (2010),

suggested that a mother who plans to return to fulltime or parttime work after maternity leave can have a significant impact on breastfeeding initiation and duration. Also, researchers found part-time work to have a weaker or no significant correlation to breastfeeding measures; therefore, suggesting that parttime work has a much less impact if the mother does not return after 12 weeks postpartum (Mandal et al., 2010).

Fein (2010) suggested that job-sharing, flexible work scheduling, and extended maternity can be a decisive factor in increasing breastfeeding initiation and duration, and possibly reaching the HHPS 2020 goals for breastfeeding. These findings suggested that the level of employment is a critical factor for child-rearing mothers who breastfeed to continue breastfeeding depends significantly upon work status.

Workplace Support

Employer's attitudes, perceptions, and lack of support of breastfeeding mothers can be detrimental to breastfeeding mothers. Mothers who believe that breastfeeding while working may seem impossible and stressful may not consider breastfeeding at all. With employment listed as a significant barrier to breastfeeding; elements within the workplace environment should be identified in the hopes of creating an environment to promote breastfeeding practices. Subsequently, upon returning to work, space and time to express milk, concerns about support from employers and co-workers, and real or perceived low milk supply are real concerns for breastfeeding mothers (Arthur et al., 2003; Shealy, Li, Benton-Davis & Grummer-Strawn, 2005). Women Bureau (2014) collect data on US mothers with children under the age of three showed that 70.0% were employed. Companies, however, are not always sure about the role that they may play in

support and to promote breastfeeding (Burk, 2015). With the lack of work lactation programs that encourage, and support breastfeeding may force mothers to abandon their breastfeeding efforts (Stratton & Henry, 2011).

According to Stewart-Glenn (2008), elements of employer supportive breastfeeding practices can include private space with a locking door (other than a bathroom stall); time to express milk at work, and adequate refrigeration. Lactation programs are becoming more prevalent in the workplace it is essential to recognize how these programs are a contributing factor to breastfeeding initiation and duration. There is no universally accepted construct of workplace lactation program; it's a program that is created in the workplace to provide education and professional support to women who wish to continue providing breast milk to their babies after they return to work (Balkham, Cadwell, & Fein, 2010).

The US Department of Health and Human Services (2008) stated that worksite lactation programs are now the norm among large employers. Worksite lactation programs have saved hundreds of thousands of dollars with smaller companies reaping similar benefits (Balkam, Cadwell, & Fein, 2010). This evidence suggests that worksite lactation programs can be an impressive return on investment.

The importance of lactation breaks can be compared to regular break time within the work hour, which provides the employee the opportunity to eat/drink, smoke, restroom breaks, and at some facilities physical activity. The United States Breastfeeding Committee (2010) suggested the need for lactation breaks for milk expression are a temporary accommodation for a subset of the labor force, and these breaks can be a

transition back to work after maternity leave. If a woman works an 8hr shift, she would need two breaks to express milk, for a 12-hour shift three breaks (US Breastfeeding Committee, 2010).

Balkham et al. (2010) employed a cross-sectional survey approach for a workplace lactation program with 303 women who participated in the lactation program for nine months. The program included prenatal classes on how to breastfeed a baby; how to maintain the breastfeeding relationship after return to work; telephone support available from nurses for new mothers; return to work consultation with nurses; and access to lactation rooms. Researchers concluded that employees who participated in the workplace lactation program were primarily older, white and married. Well-educated, high-income mothers were more likely to initiate and continue breastfeeding successfully as previous research has shown (Balkham et al., 2010).

Research by Tsai (2013) highlighted a study involving 981 women from a large electronics company in Taiwan who worked in a labor extensive work environment. The participants had recently taken maternal leave and completed a questionnaire seeking to understand their perception of breastfeeding support from their employer/workplace. The study concluded with mothers reporting their perceptions of access to dedicated lactation rooms with 63.8% not using pumping breaks, and 50.2% did not sustain to breastfeeding after returning to work (Tsai, 2013). Similar studies by Stratton and Henry (2011) and Balkham, Cadwell, and Fein (2010) showed that for continuing to breastfeed past six months women took advantage of pumping breaks and were encouragement by

colleagues or supervisors to take pumping breaks (Burk, 2015; Tsai, 2013) higher education level, lower workload, and dedicated lactation room.

Information regarding breastfeeding and the benefits of breastfeeding mothers is not reaching employers. Bridges, Frank, & Curtin, 1997; Witters-Green (2003) found two reports that suggested that almost half of employers thought formula-fed infants were as healthy as breastfed infants. Studies conducted with several businesses indicated that majority of workplaces do not have written policies on breastfeeding and supervisors dealt with requests on from lactating workers on a need by need basis (Stratton and Henry, 2011; Witter-Green, 2003).

Stratton and Henry (2011) conducted a one-on-one semi-structured interview to answer three questions concerning workplace support from seven businesses in Illinois who employed low-income, hourly-waged and full-time ranging from fifteen to two-hundred employees. Three questions were asked of employees: "1) What are the employers' beliefs about outcomes they may experience from providing workplace breastfeeding support (WBS)? 2) What are the employers' attitudes toward providing WBS? And 3) What are the employers' intentions regarding the provision of WBS (Stratton & Henry, 2011)"? The researchers concluded that support for breastfeeding was on a case-by-case basis. Many employers were unsure what role the company played in establishing workplace stations and support (Stratton & Henry, 2011). Stratton & Henry (2011) also concluded that employers with larger companies made no effort in implementing breastfeeding support programs due to the limitation of business size.

Tsai (2014) found that exploring workplace breastfeeding support was a great predictor of intention to use breast-pumping breaks and if larger and small companies created and enacted policies for breastfeeding more employees may be more comfortable in using the pumping breaks. The researcher concluded that when working mothers have encouragement from colleagues to use the breast pumping breaks, awareness of the breast pumping breaks, and greater awareness of the benefits of breastfeeding, it was significant predictors of the use of breast-pumping breaks after returning to work (Tsai, 2014; Balkham et al., 2010).

Mills (2009) stated that employee support and "buy-in" is critical to lactation programs and most companies want a return on investment for creating a lactation program and providing support. Policies should be developed to help demonstrate and communicate support for workplace lactation programs and outline the responsibilities of the company to the mother and the duties of the mother to the company (U.S Department of Health and Human Services, 2008).

Johnston-Balkham, Cadwell, and Fein (2010) stated that most companies that have lactation programs have employees that are engaged in lactation programs interventions correlated with the length and degree of breastfeeding success. Ortiz, McGilligan, and Kelly (2004) found that with a lactation program in place with high numbers of full time employed mothers (84.2%) breastfed an average of 9.1 months, indicating that the possibility of good corporate lactation programs could be an option for over part-time flexibility (Ortiz-McGilligan, and Kelly (2004); Johnston-Balkam, Cadwell, and Fein, 2010).

Companies' supporting workplace accommodations

Concerning employers and their thoughts on workplace accommodations (lactation programs), the most perceived impact is decreased productivity, there is a small percentage of research that explores breastfeeding mothers and their return to the workforce. In 2005, 90% of employers who earned a spot on the 100 Best Companies for Working Mothers offered workplace lactation programs (Good for Babies, 2005). Over the recent years' states have passed legislation to protect women's rights to breastfeed in the workplace after returning from maternity leave and encouraging employers to provide a safe and clean environment for mothers to express (or pump) their milk (Meek, 2001). Besides, lactation breaks have been placed on the list, and many businesses are using a range of strategies to address these barriers/challenges of the working mother (US Breastfeeding Committee, 2010). One key point is to understand the benefits of lactation rooms and lactation breaks.

When employers began to think about implementing a lactation program, other factors can outweigh the greater good of establishing a program of such nature. Most companies are enthralled to be the forefathers of promoting health and wellness among their employees and their family. With providing such programs, some companies can face limited budgets, and lactation programs might compete with other benefits for funding (US Breastfeeding Committee, 2010). Using data from companies that have implemented lactation programs can serve as a model for other companies, employer groups, and the federal government to launch such programs (Ross Products Division, Abbott Laboratories, 2003; Shealy et al., 2005). Establishing workplace lactation

programs can create a return on investment (ROI), an opportunity to improve the bottom line of the company (US Breastfeeding Committee, 2010). Fein et al., 2008 suggested that mothers who bottle feed have more than twice of one-day absences to care for sick children in comparison to breastfeeding mothers. In fact, absenteeism can cost the company more than 15% of the company's low payroll and up to $775 per employee (Fein, Mandal, & Roe, 2008). Concluding that lactation breaks can be scheduled but absences to care for a sick child cannot.

Slavit (2009), research demonstrated how companies are benefitting from supporting workplace accommodations for child-rearing females; one example is Aetna estimated that implementing this accommodation has saved the company $1,435 in medical claims per breastfed infant during the first year of life, which total claims savings of $108,737 per year with a return investment of 3 to 1. According to the US Breastfeeding Committee (2010), "corporate lactation programs have demonstrated as much as a (28%) decrease in absenteeism and a (36%) reduction in sick child health care claims". Not to mention that when companies invest in a lactation program, it can result in a $3:1 return on investment (US Breastfeeding Committee, 2010). Home Depot saw a return on investment from reduced absenteeism and increased productivity. Home Depot looked at national reports and saw that the average mother misses 9 days of work in the first year (Slavit, 2009). Mothers in the Home Depot program only missed 3 days due to infant illness; with cost analysis, Home Depot save $42,000 at a minimum cost of 100 dollars per day of absenteeism (Slavit, 2009).

Additionally, breastfeeding lowers insurance claims for businesses, companies that support lactation programs experience higher productivity, employee job satisfaction, morale, and enhanced loyalty to the company (Tuttle & Slavit, 2009). Research conducted by Tuttle & Slavit (2009), concluded that companies that implement lactation programs tend to have an (80-90%) retention rate for child-rearing employees and these programs can be an incentive for female employees and enhances companies' images within their community. It is imperative for companies to consider workplace accommodations for breastfeeding mothers upon their return to the workforce. Breastfeeding is a public health issue and with the support of the workplace can help mothers continue to breastfeed knowing that their employer is encouraging and on board with their infant feeding decision. Most importantly it is good for the employer's bottom line and reducing any unnecessary expenses (US Breastfeeding Committee, 2010).

The creation of the Affordable Care Act Section 4207: Reasonable Break Time for Nursing Mothers was amended to include essential pieces of legislation to protect nursing mothers returning to work and their desire to continue to provide human milk for their infants (Froh & Spatz, 2013). The creation of this act is creating protection for breastfeeding mothers in which was once the lack of federal legislation addressing workplace stations (e.g., lactation rooms) for breastfeeding mothers. That being the case several states have inconsistent state laws, as well as conflicting interpretations of existing federal laws related to pregnancy and disability (US Breastfeeding Committee, 2010). With the creation of this law has enabled the US to join multiple countries that

employ this protection for lactation breaks at work, even though the only fraction of the law applies, but it most certainly is a start.

Murtagh & Moulton (2009), identified states which laws supported breastfeeding using the Westlaw databases of the statutes of all 50 states. In that database, the researchers found 23 states, the District of Columbia, and Puerto Rico had enacted 28 laws containing a total of 51 provisions relevant to breastfeeding in the workplace. "Within these provisions, 21 focused on break times for breastfeeding or expressing milk, while 19 focused on private locations for breastfeeding activities (2 location provisions for Indiana: 1 for private and 1 for public employees), 8 prohibited breastfeeding-related employment discriminations, and 3 encouraged employers to provide "infant-friendly" or "mother-friendly" workplaces" (Murtagh & Moulton, 2009)

Essentially, "the amended section 7 of the Fair Labor and Standards Act (FLSA) requires employers (with more than 50 employees) to provide "reasonable break time for an employee to express breast milk for her nursing child for 1 year. After the child's birth each time the employee needs to express milk a place, other than a bathroom, that is shielded from view and free from intrusion from coworkers and the public should be provided for the employee to express breast milk" (Froh & Spatz, 2013). Froh & Spatz (2013) stated that recent amendments to Section 4207 are for an employee to have coverage by the FLSA, the business or organization must have a minimum of two employees and an annual dollar volume of at least $500,000 or if it is a hospital, care facility, school/preschool, and/or government agency. If this is not the case, then the employee would have to get individual coverage under the FLS if his/her work requires

the employee to participate in interstate commerce (Froh & Spatz, 2013). With this act is does cover non-exempt employees (i.e., hourly workers) and in most situations, there are accommodations already in place to support break time for nursing mothers but can vary from state to state.

In efforts to help assist employers with meeting the requirements of this legislation, the U.S. Department of Health and Human Services offers resources, The Business Case for Breastfeeding (U.S. Department of Health and Human Services, 2010). This resource demonstrates how companies'/organization benefits when they support lactation programs and supporting breastfeeding at the workplace. The research in this literature has shown how necessary breastfeeding accommodations can be to help increase breastfeeding initiation among child-rearing mothers. Although there are not many studies on the effectiveness of lactation interventions, combined interventions used and assessed in the existing programs can work to improve breastfeeding rates overall (Stewart-Glenn, 2004). Furthermore, these findings will challenge companies to incorporate policies to encourage breastfeeding for their employees.

Public Breastfeeding and Public Breastfeeding Stations

Choosing to breastfeed is arguably a significant issue among child-bearing women in the United States. With the benefits of breastfeeding revered by researchers; it can raise deep-seated anxieties about breastfeeding, especially how the public views breastfeeding. In some sense doctors and public health, entities are promoting breastfeeding, but breastfeeding women are somewhat marked and marginalized in the public sphere for that decision (Boyer, 2011). The decision to breastfeed and attitudes

about breastfeeding in public are profoundly shaped by education, class, age, race, and ethnicity (Li et al., 2008; Tarrant and Kearney, 2008). Stuebe & Bonuck (2011) mothers who felt comfortable breastfeeding in public intended to exclusive breastfeed longer than those who felt uncomfortable.

Johnston-Robledo et al., (2007) found that society's view on breastfeeding in public has given many young women internalized cultural taboos. Doshier (2015) saw that surrounding this issue women who rate higher on self-objectification questions are more likely to anticipate feeling embarrassed or concerned about breastfeeding in public as compared to their counterparts with a lower rating of self-objectification (Johnston-Robledo et al., 2007; Doshier, 2015). Another challenge was that men saw breastfeeding as sexual activity and breastfeeding in public may receive negative attention; they also felt that the media supported these beliefs and that it was lack of exposure of mothers breastfeeding in public to in which contributed to these views (Henderson et al., 2011). In addressing some of the challenges interventions have been created to help women deal with breastfeeding in public. One response to help address these barriers to breastfeeding in public is the Marin Breastfeeding Coalition campaign involves life-size cutouts of women breastfeeding placed in various locations, in hopes that breastfeeding in public will educate the community on the benefits and laws regarding breastfeeding in public and with the purpose of normalizing breastfeeding in public places (Farroq, 2009; Doshier, 2015).

Acker (2009) conducted a study that included 106 college students and 80 adults. The participants were shown a series of nine people DOIng various things in public and

private, two of the pictures added a mother breastfeeding. One of the photos showed a mother breastfeeding in the privacy of her own home and the other mother breastfeeding in public (Acker, 2009; Doshier, 2015). Each participant was asked to answer questions regarding the normalcy of that activity shown, negative feelings and positive evaluation (Acker, 2009). Acker found that most the participants rated the picture of the mother breastfeeding in public more negatively than the mother breastfeeding in private and this could be due to the unfamiliarity of the behavior, sexist attitude, and hypersexualization of breast in society. A similar study conducted by Boyer suggested that in the realms of visual and creative imagery surrounding women's sexual parts can become challenging in changing how women breasts are displayed. Boyer (2012) deemed that a woman's experience of breastfeeding in public can be like a drawing on a figure of killjoy due to public discomfort or the discomfort of others.

To make women feel comfortable Boyer (2012) suggested that societal norms need to evolve, so breastfeeding is considered to be a regular occurrence. Also, stating that women who want to breastfeed in public should be prepared with strategies to cope with adverse reactions or difficulties they may encounter while nursing. Moreover, with establishing lactation rooms in public places such as shopping malls or public buildings could help remove the barrier of breastfeeding in public areas, for example living in Atlanta, Georgia and using the busiest airport, Hartfield-Jackson Atlanta International Airport (HJAIA), does not have designated lactation rooms for employees or customers. The airport will ask mothers to feed their children in the bathroom stalls or call in advance to arrange a private place to pump or breastfeed, but none of this information is

provided on their website when or if the lactation rooms will be established (Bocks, 2015).

Marsden & Abayomi (2009) conducted a qualitative study using interviews with employees of local businesses (cafes and restaurants) where staff should encounter women breastfeeding. The companies were identified as 'baby friendly' using the local maternity hospital's Infant feeding support and sources of help booklet (Marsden & Abayomi, 2009). The businesses were selected so that 50% of them would not have breastfeeding policies or area specified for breastfeeding and the other 50% would. Semi-structured interviews were conducted and were audiotaped in private rooms or quiet workspaces. Topics covered during the discussion were individual opinions and knowledge, breastfeeding facilities, and observed public reactions to breastfeeding (Marsden & Abayomi, 2009). The findings of the study involved 11 staff (2 males and 7 females) between the ages of 20 to 36 years. Four of them worked in breastfeeding-friendly environments, and 5 operated in facilities with no breastfeeding policies established or public breastfeeding stations. Some of the respondents had children that they breastfed themselves or significant others that breastfed.

Many of the employees and supervisors had encountered women breastfeeding in their facilities but had no problem with it, but many had seen evidence of public disapproval. Many said that if a complaint did arise, they would defend the breastfeeding mother or refer it to management. Marsden & Abayomi (2009) stated that the employee's views did not differ regardless of whether their workplace had breastfeeding policies or not. Older employees with children were more knowledgeable and confident about

breastfeeding while younger employees were less accepting seeing women breastfeed their children in public and some stated that it made them “feel uncomfortable” (Marsden & Abayomi, 2009). According to Acker (2009), this could be because it is odd behavior in the younger society.

Modern American society has paid considerable attention to the sexual and aesthetic functions of women’s breast with objectivity. With this formulation tuts, glares and funny looks serve as indicators that women are breastfeeding in public are ‘failing’ in their duty to maintain public comfort because they are refusing to breastfeed in a normalized way, in the prescribed space (Boyer, 2012). Boyer (2012) conducted 11 interviews, and surveyed 46 people, and investigated 180 websites posting on parenting websites in search of women’s experiencing with breastfeeding in public. In her research, she found that most women had negative experiences with breastfeeding in public. Some of the respondents stated that they felt as though they were making others uncomfortable by nursing in which made them uncomfortable, while others reported that “you can just tell that everyone else was embarrassed and that made it difficult” (Boyer, p.6 2012).

As mentioned earlier, Marsden & Abayomi (2009) study showed employees were generally accepting of breastfeeding facilities, and it should be more widely accepted and available, offering a welcoming and clean environment for mothers to nurse. Li et al. (2004) found that providing lactation rooms in the USA help to alleviate some of the challenges/barriers to breastfeeding in public. Subsequently, Acker (2009) and Brown et al. (2009) argued that increased exposure to public breastfeeding would make it a more cultural norm and increase positive attitudes toward breastfeeding. Thus, with the

Government's Equality Act (2010), this bill protects mothers who wish to breastfeed in places that they have a legal right to breastfeed in places like cafes, shops, and public transport (UNICEF, 2009).

Considering the media contributes significantly to that theory it would be encouraging for the press to display or portray breastfeeding as a standard, desirable, and achievable activity for women of all cultures and socioeconomic levels as stated by the Department of Health and Human Services' Blueprint for Action on Breastfeeding (US Department of Health and Human Services, 2000). These studies contribute to the body of literature by investigating the barriers to breastfeeding in public and the importance of public breastfeeding stations.

Urban and Rural Breastfeeding

Breastfeeding is a multifaceted process with exceptional benefits and is widely acknowledged. The factors that influence breastfeeding vary according to the economic and sociocultural environment (e.g., urban and rural). Given these factors and the various practices that may be associated with breastfeeding exclusively for six months or greater can depend significantly on geographical region. In Georgia, breastfeeding initiation is still currently below the national average, and the duration of any breastfeeding is 12 months or shorter ((CDC Breastfeeding Report, 2014) Card, 2014). However, information regarding factors that influence breastfeeding in urban and rural areas of Georgia has yet to be studied.

A cross-sectional study in the rural and an urban area in Tanzania aimed at identifying factors related to early infant feeding practices (Shiriam, Gebre-Medhin, &

Greiner, 2011). The study included 320 mothers from each area with infants below 7 months of age. The researchers found that 84% of rural mothers and 93% of urban mothers ($p < 0.001$) initiated breastfeeding within 6 hours of delivery and exclusive breastfeeding was rarely practiced in either area (Shiriam, Gebre-Medhin, & Greiner, 2011). Moreover, residing in the urban area was positively associated with the duration of exclusive breastfeeding ($p < 0.001$), but not with that of predominant breastfeeding (Shiriam, Gebre-Medhin, & Greiner, 2011). In Georgia, breastfeeding rates are not broken down by geographical location such as urban and rural; therefore, this research is so important.

Also, the researchers found that knowledge about colostrum for the baby was significantly correlated with the duration of exclusive breastfeeding in the rural mothers and with the predominant breastfeeding in the urban group. Comparable results were found in a study conducted in India regarding breastfeeding practices, in which suggested as many as 59 (14.75%) urban and 98 (25.79%) rural mothers discarded the colostrum (Ashwuni, Katti, and Mallapur, 2014). In the rural area, no association was found between information about breastfeeding given at different contacts with a health facility and the duration of either exclusive or predominant breastfeeding (Shiriam, Gebre-Medhin, & Greiner, 2011); and in the urban areas mothers who received information about breastfeeding from the health care personnel breastfed for a longer period (Shiriam, Gebre-Medhin, & Greiner, 2011).

Ashwini, Katti, and Mallapur (2014) conducted a one-year long community-based cross-sectional study by random sampling 380 rural mothers and 400 urban mothers

having a 1-year-old child were selected. Information regarding sociodemographic variables, breastfeeding practices was recorded through a multi-indicator coverage survey. In the districts that were used in India for this study were Maharashtra and the state showed a prevalence of exclusive breastfeeding in an urban area was 49.0% and in the rural area was 37% (Kameshwararao, 2009). Early initiation of breastfeeding rate was 42.50% in urban and 42.89% in rural area. Exclusive breastfeeding rate under 6 months of age was 16.25% in urban and 15.26% in rural area. Continued breastfeeding rate at 1 year was 100% in urban and 99.21% in rural area (Ashwini, Katti, & Mallapur, 2014). This study compared urban and rural mothers to find what infant feeding practice was widely used and to see other socio-demographic factors that influence breastfeeding practices.

The researchers found that initiation of breastfeeding was delayed beyond 4 hours by 24.0% in urban and 33.68% rural mothers which were a statistically significant difference ($P<0.05$) (Ashwini, Katti, & Mallapur, 2014). Rates of breastfeeding were delayed by urban mothers after delivery due to their physical inability like pain or tiredness (38.78%); in rural areas mothers, did not report of any pain or any physical incapabilities. Their delayed initiation was because of elders who advised them not to initiate breastfeeding early (46.09%). A study by Gupta et al (2010) who conducted a survey in the urban slum of Lucknow, India and the study revealed that only 36.60% mothers-initiated breastfeeding within one hour of delivery and some of the reasons for delaying breastfeeding was discomfort in the mother (16.90%) no secretion of breast milk (31.00%), family custom/belief (52.10%).

On the contrary, programs and interventions need to be directed to populations of specific geographic areas that may need improvement for breastfeeding initiation and duration. Regions such as the Appalachian Region is a 329916 km² area follows the Appalachian Mountains which is 42% rural in which includes 13 states: New York, Pennsylvania, West Virginia, Maryland, Ohio, Virginia, Kentucky, Tennessee, North Carolina, South Carolina, Alabama, Georgia, and Mississippi (Gibson-Davis & Brooks-Gunn, 2006). These states do have urban areas, but much of the mountainous region is geographically isolated, and approximately 50% of Appalachia's 410 counties had fewer than 30,000 people in 2000 (Pollard, 2010). In some communities, these areas can thrive, grow and develop; while in some areas there is isolation which has resulted in the continued absence of necessary infrastructure (roads, water, and sewage) and access to health care and support (Appalachian Regional Commission, 2010).

Concerning breastfeeding decisions in this region has been limited due to few resources offered, limited maternity leave, and the need to return to work (Scott, Binns, & Graham, 2006). For women living in this region access to health care professionals, socioeconomics, and rural living have significantly impacted breastfeeding decisions (Wiener, 2011). Direct comparisons between urban and rural women and their differences in breastfeeding initiation have infrequently been explored (Flowers et al., 2008). Wiener & Wiener (2011) conducted a secondary analysis using the U.S. 2007 National Survey of Children's Health Data. Data were compiled for prevalence, insurance coverage, and medical home (a source of comprehensive primary care) determinations according to rural or urban location. Of the interviews conducted for

2007, the National Survey for Children's Health stated that 27,388 children aged 0-5 years for which information was obtained found that rural and urban prevalences were weighted to reflect population densities (Wiener & Wiener, 2011). Moreover, the data revealed that the national urban areas had a prevalence of breastfeeding of 0.770 (CI 0.757-0.784); for Appalachia, it was 0.715 (CI 0.702-0.728). Looking nationally rural areas had a significantly lower prevalence of breastfeeding of 0.687 (CI 0.661-0.713); and for Appalachia, it was 0.576 (CI 0.554-0.598) (Wiener & Wiener, 2011). According to Wiener & Wiener (2011), none of the states in the Appalachia had a prevalence of breastfeeding above the national rural prevalence or national urban prevalence.

The study also suggested that rural areas in the Appalachia had more women who did not breastfeed. In which supports the literature that breastfeeding may be more frequent among urban women (Chertok, Luo, Culp, & Mullet, 2010). Rural children had an OR (odds ratio) of 1.28 of not being breastfed when compared to the United States overall (Wiener & Wiener, 2011). The researcher found for urban children the odds ratio of 1.73 of not being breastfed when compared to the USA overall and 1.35 odds ratio when compared to other rural areas of the USA (Wiener & Wiener, 2011).

Other studies conducted internationally suggest that rural mothers breastfeed at a higher rate when compared to urban areas, for example, a study done in urban and rural Delhi, India indicated that mothers in the rural setting 35% initiated breastfeeding within 1 hour of birth and 21% in urban of the 153 urban and 130 rural mothers that participated (Oommen et al., 2009). Consequently, for exclusive breastfeeding urban mothers in Delhi, India had a higher percentage of breastfeeding initiation of 74% urban mothers and

36% rural mothers. This study shows how great there is a need for explicitly addressing the barriers that rural and urban women in any area may face and addressing other factors that may influence the intention to breastfeed or not.

Theoretical Framework

The Social Ecological Model

The theoretical framework that will be guiding this work is the social ecological model of health. For this study using the social ecological model, all 5 levels were considered: individual, interpersonal, organization, community, and policy. These levels will help to address risk markers associated with breastfeeding within the two geographical areas. Further research is necessary to determine which risk markers strongly influence breastfeeding initiation and duration. Identifying these markers can show how they may be directly or indirectly associated with breastfeeding exclusivity based on residential location.

McLeroy et al. (1988) stated two concepts associated with the social ecological model (SEM) 1) behavior affects and is affected by multiple levels of influence 2) individual behaviors shapes, and is shaped by, the social environment. The model recognizes the complex role played in the development of health problems and the success or failure of attempts to address these problems (CDC, 2011). This model also focuses on integrating approaches to change the physical and social environments instead of focusing solely on modifying individual health behaviors (CDC, 2011). According to Raffle et al. (2011) identifying factors related to public health problems at each level of

the SEM can help identify intervention programs to increase the possibility of making a substantial impact on one's behavior.

The SEM model will be useful since individuals exist in a social ecological system, changing individual level behaviors and creating a new social norm requires creating and enabling an environment that is facilitating to change and removing barriers that may inhibit change at the individual, community, organization, and policy level (UNCIEF, 2014). The SEM has been successfully applied to many studies as well as studies associated with breastfeeding and breastfeeding outcomes. Accordingly, women would be more receptive to breastfeeding behaviors, if all levels of the SEM are conducive to helping her achieve her goal of breastfeeding and continuing to breastfeed.

The SEM relates to this study because all levels of the SEM play an intricate part in a mother's decision to breastfeed. If a mother is knowledgeable about breastfeeding and has the belief that she can perform breastfeeding she may consider breastfeeding (individual) as a feeding option. With the support from family, friends, peers, and health care providers (interpersonal), workplace support (community), lactation consultants or lactation organizations (organizations), and WIC, breastfeeding legislation (policy) all play a considerable role in infant feeding decision.

In this model, five behavioral patterns are viewed: (a) individual/intrapersonal, (b) relationship/interpersonal, (c) organizational/institutional, (d) community, and (e) policy (McLerory et al, 1988). These factors can greatly influence a mother's decision to initiate breastfeeding and to sustain breastfeeding. Within the SEM, the individual/intrapersonal category will encompass the beliefs, barriers, attitudes, and experiences of breastfeeding

mothers (Raffle et al., 2011) and will include individual and immediate determinants of behaviors such as knowledge, personality traits, and attitudes (McLeroy et al., 1988; Bylaska-Davies 2011). Many different risk markers/factors influence breastfeeding initiation and duration. However, the literature using the social ecological model will only focus on attitudes, identified barriers, beliefs, inadequate knowledge, and experiences to breastfeeding in which tend to have the largest impact on maternal feeding choice. Age, race, ethnicity, education level, employment, breastfeeding in public are individual factors that were discussed earlier in the literature review but are significant factors using the SEM.

Individual/Intrapersonal Factors Influences on Breastfeeding

At the individual/intrapersonal level, factors such as maternal attitude, knowledge, intention, breastfeeding self-efficacy, perceived insufficient milk supply and faith in breast milk are all modifiable factors that influence breastfeeding rates at the intrapersonal level within the SEM (Stroope, 2012).

Literature shows substantial evidence of the benefits of breastfeeding, but the perceived ease of breastfeeding in comparison to formula feeding may differ from one mother to the next. The public's perception of breast milk and formula varies across many countries. Some women feel that formula feeding is more comfortable because it doesn't require a strict schedule and infant weight gain is not much of a concern (Rojjanasrirat & Sousa, 2010). Also, many women see infant formula just as good as breast milk (Stuebe, 2009), while others think that feeding a baby formula instead of breast milk increases the chance the baby will get sick (Li et al., 2007). Moore and Cotty

(2006) found that some women reported formula feeding as a reassuring method of infant feeding, where the mother feels less embarrassed about her infant feeding choice, and that she can visually monitor the amount of milk her infant is eating, and care for the infant in her absence is much easier with formula feeding. Women who were advised about the "benefits of breastfeeding" viewed lactation as a "bonus," like a multivitamin, that was helpful but not essential for infant health (Stuebe, 2009). Moore and Coty (2006) found that other women saw breastfeeding as easier, economical, convenient, healthier, natural, and more satisfying for mother and child; but the idea of expressing milk seemed more time to consume for feeding in the absence of the mother and was far more complicated than formula feeding (Holmes et al., 2009; Raffle et al., 2011).

These distinctions ultimately influence parents' decision about which infant feeding methods are more suitable for their infant and lifestyle; therefore, infant feeding decisions can be significantly affected by family and friends and how the feeding method is perceived by the individual (Rojjanasrirat & Sousa, 2009; Raffle et al., 2011).

Positive maternal attitude toward infant feeding is a vital component and reliable predictor of infant feeding (Wokjcick et al., 2010). Zhou, Younger, and Kearney (2010) conducted a cross-sectional self-administered survey of 322 Chinese immigrant mothers on maternal breastfeeding knowledge and attitudes, along with socio-demographic variables. A Chi-square analysis was used to determine independent associations. Despite much awareness of the advantages of breastfeeding 80% indicated the main reason for breastfeeding is that "breastfeeding is better for the baby" (Zhou, Younger, and Kearney, p.3 2010). The mothers also indicated that they were conscious of the unique health

benefits of breast milk 90%, and 60% recognized some disease-protective effects of breast milk (Zhou, Younger, and Kearney, 2010). Rojjanasrirat and Sousa (2010) found that women with positive attitudes toward breastfeeding with high motivation to breastfeed long term were more likely to overcome obstacles or adversities with breastfeeding if they arrive. Women with favorable attitudes toward breastfeeding and intended to breastfeed to 6 months were more likely to be fully breastfeeding or giving a more significant effort towards breastfeeding to the recommended time (De- Jager et al., 2013).

Literature varies on the significant impact of a mother's attitude toward breastfeeding initiation and sustainability (Parkinson, Russell-Bennett, & Previte, 2010). Nevertheless, women who have less favorable attitudes to breastfeeding included formula feeding more convenient 58.6% and a better choice for working/studying mothers 88% (Zhou, Young, and Kearney, 2010). However, Zhou, Young, and Kearney (2010) in their research showed that mothers with favorable attitudes to breastfeeding had more than three-quarters of the respondents denying that they did not like breastfeeding, and two-thirds agreed that formula feeders missed one of the greatest joys of motherhood.

One particular study documented attitudes about WIC participation status of low-income women in two hospitals in California. The study found that participants who formula feeding were more likely to have negative attitudes towards breastfeeding including: thinking that breastfeeding was embarrassing and difficult in public, difficult if someone else feeds/cares for the child, and physically painful and uncomfortable and were likely to be influenced by the negative attitudes of family/friends or partner/husband

(Wojcicki, 2010). Other studies have evaluated the relationship between attitudes toward breastfeeding and breastfeeding intention and have found that partner or friend/family support is essential (Persad and Mesinger, 2008) as is confidence or prior experience (Kloeblen-Tarver, Thompson, and Miner, 2002) and fear of pain (Noble et al., 2003); (Hurley, Black, Papas, and Quigg, 2008) in deciding not to breastfeed.

Many women who chose to initiate breastfeeding may experience problems their first week of postpartum and has shown to have a negative impact on sustaining breastfeeding efforts (Dewey et al., 2003; Kronborg & Vaeth, 2009), even among mothers with the most excellent determination to exclusively breastfeed (Dewey et al., 2003; Raffle, 2011). Early problems discussed in the literature with feeding are widely described. It has been documented that many women face physical difficulties with getting the baby to latch on properly which results in nipple cracking, bleeding and pain (Bailey, 2007; Flower, 2008, Harris et al., 2003; Kelleher, 2006; Manhire et al., 2007). With these physical difficulties women, have stated that they have experience damaged nipples, their milk not transferring while pumping, and ineffective sucking from infant (Kronborg & Vaeth, 2009; Ruowei et al., 2008). The pain and discomfort experienced by some of the women are greatly surprised by the intensity and duration of the pain (Mackean & Spragins, 2012). This discomfort may increase the probability of terminating breastfeeding efforts (Ruowei et al., 2008).

In addition to the physical difficulties of painful breast and nipples, physical feeding issues are described such as the baby rejecting the breast or not sucking (Reshaw & Henderson, 2012); and women have described perceived milk supply (Bailey, 2007;

Flower et al., 2008; Gatti, 2008; Heinig et al., 2009; Twamley et al., 2011) for other reasons to discontinuing breastfeeding early. Gatti (2008) found that many women discontinue breastfeeding during the first weeks because of perceived milk supply. According to Gatti (2008), 35% of women wean early and state that this was a primary reason for stopping. Shala (2010) reported that about only 5% of women have physiologic and real insufficient milk for their baby (D. Hector et al., 2005). When determining inadequate milk supply women primarily used infant satisfaction cues as their primary indication of sufficient milk supply (Mackean & Spragins, 2012; Gatti, 2008). Based on these infant cues many women would discontinue breastfeeding if they perceived their infant was still hungry or not satisfied without any professional evaluation of their milk supply (Gatti, 2008). Shala (2010) found that insufficient milk supply was generally considered a perceived than "real," and that other factors may play a role in women doubting their milk supply.

Raffle et al. (2011) suggest that when mothers have perceived milk supply or insufficient milk supply, supplementation with formula is indicated by the health care provider and the recommendation is often followed. When mother's face these difficulties, it can lead mothers to use formula as a permanent feeding choice and decreasing breastfeeding in which decreases breast milk supply.

Breastfeeding for some mothers is a skill that becomes easier with a great deal of practice. The longer a mother continues to breastfeed, the easier she believes it is (Mackean & Spragin, 2012). Andrew & Harvey (2011) reported that breastfeeding does require some technical skill, which can be developed through support from others who

have experienced breastfeeding. This support can vary depending on the individual and may include family, friends, peers, and health professional. This support can also translate and assist in the development of self-efficacy and confidence (Macken & Spragin, 2012). Prominent level of confidence can give breastfeeding mothers the belief that she can make a defined change even under conditions where the behavior change is particularly difficult (e.g., continuing to breastfeed while returning to work or maintaining breastfeeding when it becomes difficult or painful) (Risica, 2008).

Maternal self-efficacy is the belief based on how well one perceives they can perform the task necessary to achieve the specified goal or behavioral change. Self-Efficacy is perceived self-efficacy in which influences all aspects of behavior, including initiation and cessation of breastfeeding (McCarter-Spaulding & Gore 2009). Maternal self-efficacy has been found to be a great predictor of breastfeeding duration (Dennis & McQueen, 2007).

Ideally, research has shown that self-efficacy has been extensively used to describe maternal confidence/self-efficacy and how it is positively correlated to breastfeeding duration and the higher the woman's confidence about the feeling of breastfeeding the more likely she is to continue the behavior (Noel-Weiss, Bassnett, & Cragg, 2006). Notably, mothers who are more efficacious (confident) are more likely to choose to breastfeed, persist when confronted with difficulties, employ self-encouraging thoughts, and react positively to perceived problems (Dennis, 2002). The relationship between breastfeeding self-efficacy and duration have been noted and studied throughout

various countries and has shown the significance of self-efficacy and breastfeeding initiation.

A study examined 150 primiparous mothers using secondary analysis of the data using grounded theory wanted to see the process of contributing to breastfeeding decisions among Caucasian and African American women from three major cities (Avery et al., 2009). The researchers were primarily interested in distinguishing women who breastfeed successfully to those who do not. They reported that breastfeeding is a learned skill and if the mothers achieved a level of "confident commitment" before birth; they could withstand lack of support by significant others and shared challenges (Avery, Zimmerman, Underwood & Magus, 2009). In contrary, if the confident commitment was not achieved the decision to breastfeed fell apart once the mother faced a challenge (Avery, Zimmerman Underwood & Magus, 2009).

Pollard (2009) evaluated self-efficacy (maternal confidence) among 70 mothers using a descriptive correlational design who delivered at a regional hospital in North Carolina to assess self-efficacy. To measure self-efficacy, the Breastfeeding Self-Efficacy Scale was used by the 70 mothers. Of all the factors that contribute to breastfeeding initiation and duration breastfeeding initiation rates of 69.7% and 36.7 % at six months. Mothers who scored significantly high on the Breastfeeding Self-Efficacy Scale were a statistically significant predictor of breastfeeding length (Pollard, 2009). Another study by Taveras et al. 2009 identified similar findings. Particularly in a prospective cohort study of 1,163 American low-risk mother-and-infant pairs found that and suggested that mothers who expressed confidence in their ability to breastfeed 1 to 2 days postpartum

were positively related to continuation of breastfeeding at 2 and 12 weeks (Taveras et al., 2009). Moreover, the researchers also found the opposite; mothers who had low confidence in breastfeeding and their ability to breastfeed 1 to 2 days postpartum (OR= 2.8; 95% CI: 1.02-7.6) were almost three times as likely to discontinue breastfeeding altogether (Taveras et al., 2009).

Equal findings were also identified in a study by Ertem, Votto & Leventhal (2010) examining breastfeeding confidence among mothers who were eligible for Women, Infants, and Children (WIC) Program. In this longitudinal observational a study of 64 mothers the researchers found that women who lacked confidence early in the postpartum period would be breastfeeding at 2 months postpartum (RR: 2.38, 95% CI: 1.82-6.18) were more likely to discontinue breastfeeding within the first 2 weeks postpartum (Ertem, Votto, & Leventhal, 2010). Ertem, Votto, & Leventhal (2010) found that mothers who weren't confident in their ability to breastfeed for 2 months were almost 12 times more likely to stop breastfeeding before 2 months when compared to those who were most confident (Ertem, Votto & Leventhal, 2010).

Additionally, another prospective study of 198 women using a multivariate analysis of 11 psychosocial and demographic factors and demographic factors and demographic factors, antenatal confidence was one of the most significant predictors of breastfeeding duration (O'Campo, Faden, Gisden, & Waden, 2010). In addition, a descriptive, longitudinal cohort study involving African descent women (125) who were planning to breastfeed in determining if self-efficacy predicts duration and pattern. In which resulted in higher levels of breastfeeding self-efficacy predicted longer duration

and more exclusive breastfeeding at 1 and 6 months postpartum in which is consistent with prior research ($p<.01$) (McCarter-Spaulding & Gore, 2009).

Within the literature is myriad studies evaluating the level of confidence on breastfeeding outcomes and have identified a positive correlation with increased confidence and increased breastfeeding duration and exclusivity (O'Campo et al., 1992; Papinczak &

Turner, 2000; Taveras et al., 2003). Nonetheless, a lack of confidence has been correlated with early discontinuation of breastfeeding and low exclusive breastfeeding (McCarter-Spaulding & Gore, 2009). These findings can be evident in prenatal and postnatal assessments of the mothers' confidence (Dennis, 2002). Ideally, these same results can be seen in diverse countries such as Australia, Canada, Mexico, the United Kingdom and the United States (McCarter-Spaulding & Gore, 2009); not to mention adolescents and women who participate in their local WIC programs.

Overall, regardless of the barriers that breastfeeding mothers may face self-efficacy (maternal confidence) has been identified as a salient variable that affects breastfeeding initiation and duration across all demographic and socioeconomic factors.

Interpersonal Level Factors Influencing Breastfeeding

Within the Social Ecological Model, interpersonal factors are identified and may include social networks such as family, friends, co-workers, and health care providers. The support and opinions from these formal and informal groups play a significant role in influencing the behavior and attitude related to breastfeeding initiation and duration. These social networks can provide emotional and encouraging support for breastfeeding

mothers and offer firsthand experiences from mothers who experienced the breastfeeding journey, or it can be more difficult if these social networks express displeasure or behave in ways that counter breastfeeding success (Raffle et al., 2011).

Many women perceive breastfeeding as an inconvenience and the commitment to breastfeeding may outweigh the greater good of breastfeeding. It is vital to consider the mother's support system, members of the mother's social support system should be included in the decision to breastfeed. If a mother does not feel that she has a great support system around her to breastfeed, then she most likely will not initiate breastfeeding (Stremler & Lovera, 2004). Some mothers do not ask for help or advice from family and friends due to receiving contradictory information from those sources (Bylaska-Davies 2011).

Social support comes in many facets and may include: father, grandmother, friends, health care workers (e.g., nurses, midwives, lactation consultants, and physicians), and support from their mothers. Determining the aspect of social support that is most influential is critical in initiating and sustaining breastfeeding, especially from mothers who are undecided about what infant feeding method is suitable.

The International and National Policy documents suggested that support is necessary for maternal and infant well-being (Commission on the Family, 1998; World Health Organization, 2005) and helps facilitate mother's adaptation to motherhood (Leahy-Warren, McCarthy, & Corcoran, 2009). Many women stated that their breastfeeding decision weighed heavily on the support from their husbands or fathers of their child/children. Other studies suggest that in many families, fathers may oppose to

breastfeeding just because of concerns toward what their role would be in feeding, how would they bond with the infant, and how would the mother assume her responsibilities when it came to household chores (General's Call to Breastfeeding, 2011).

Previous research shows that mothers in the postnatal period reported that help from fathers and mothers, both with household chores and infant care to be of immense importance to them (Leahy-Warren, McCarthy, & Corcoran, 2009). Reeves, Close, Simmons, & Hollis (2006) examined whether social support systems influenced decisions to breastfeed using an administered 34-item questionnaire among pregnant women and women who had children from six north Florida counties. Within this study, the researchers found among the various broad demographics that approximately 46.3% strongly agreed that the nurses and the baby's father encouraged them to breastfeed their babies. Also, 34% of the participants strongly agreed that their mother encouraged them to breastfeed.

In another study, findings from the Office of Surgeon General "A Call for Breastfeeding" (2015) described a randomized controlled trial of a two-hour prenatal intervention with fathers on how to be supportive of breastfeeding. Researchers found that a far higher rate of breastfeeding initiation among participants' partners 74% than among partners of controls 14% (Wolfberg et al., 2004).

The African American Breastfeeding Alliance, Inc (AABA) and the U.S. Department of Health and Human Services (DHHS) Guide suggested that if the father is educated in advance about the benefits of breastfeeding regarding health, emotional, and monetary interests, he should be there to support her decision (AABA & DDHS, 2009).

Warren asserted a descriptive correlational design using a 28-item questionnaire to measure social support in first-time motherhood and confidence in infant care practices. Researchers used a convenience sample of 135 first time mothers, and 74% completed the questionnaire; resulting in appraisal support (information that is useful for self-evaluation) having a statistically significant moderate relationship with confidence in infant care practices ($r=0.4$; $P< 0.01$). The researchers showed that informational support (advice, suggestions, and information) had a weaker but statistically significant relationship ($r = 0.2$, $P <0.05$). The respondents stated that their primary source of social support was appraisal support were husbands/partners and their mothers (Warren, 2005). Pisacane, Continisio, Aldinucci, & D'Amora (2005) found that 25 % of women who partners participated in a prenatal program and/or intervention program on how to prevent and address common problems with breastfeeding and/or lactation (such as painful nipples or insufficient milk) were still breastfeeding at six months, compared to 15 % who partners were only informed about the benefits of breastfeeding.

Literature supports that paternal support for breastfeeding can influence breastfeeding initiation and maintenance of breastfeeding (Simpson, 2012), contribute to maternal breastfeeding confidence, influence decisions regarding duration and weaning (McQueen et al., 2011), and without the fathers' support mothers are more likely to breastfeed for a shorter duration (Simpson, 2012; McQueen et al., 2011). According to Bar-Yum and Darby (2009), found that paternal support influences breastfeeding decisions, assistance at the first feeding, duration of breastfeeding, and the risk factors for bottle feeding.

Furthermore, in research there is compelling evidence that fathers have a tremendous, profound effect on the influence of initiation and maintenance of breastfeeding (Pollard & Guill, 2009), as well as their significant contribution to maternal breastfeeding confidence as stated previously and fathers help to influence decisions regarding duration and weaning (Pollard & Guill, 2009). In some instances, if fathers are not influential in the decision to breastfeed or does not assist with the first feeding may result in the risk for bottle feeding (Simpson, 2012). In other words, fathers can have a profound impact on maternal breastfeeding. This research fills the gap in research, but more research is needed to identify the methods and means of support that fathers can give their partners to ensure breastfeeding continues for the recommended six months (Giugliani, 2009). Additionally, when fathers are not able to be supportive, breastfeeding rates were lower (Simpson, 2012). Giugliani et al. (2009) found that fathers' involvement in parenting is associated with positive cognitive, developmental, improved breastfeeding rates, higher receptive skills, and higher academic achievement. In other words, fathers need to be better prepared to assume their new roles in being supportive of their partner's decision to breastfeeding. More research is needed to ascertain what fathers think they have to assist their partners to be effective breastfeeding advocates. Research among breastfeeding mothers identifies fathers as a primary source of support (Simpson, 2012).

Research suggests that social support may come from different avenues for breastfeeding mothers for example mothers who choose to breastfeed may garner support from their grandmother. Mothers often turn to grandmothers for help rather than to their health care providers for information and support about infant feeding decisions and

issues. Many women who are grandmothers are becoming grandmothers may have limited experience with breastfeeding (Grassley, Spenser, & Law, 2012). In which may result in new mothers reporting that formula is the infant feeding method most often chosen by their female relatives (Grassley, Spenser, & Law, 2012). According to Grassley, Spenser, & Law (2012) in the United States, grandmothers who are unaware of the current American Academy of Pediatrics recommendations about the benefits and sufficiency of exclusive breastfeeding for the first 6 months may advocate for formula, which can undermine a mother's milk supply (Banks, 2003; Grassley & Eschiti, 2008).

A quasi-experimental with a two-group posttest design was used to evaluate grandmother's knowledge, attitudes, and intent to recommend breastfeeding. The study used 49 grandmothers using a convenience sampling method. The grandmothers who participated in the intervention would demonstrate higher scores for attitude, knowledge, and intent to recommend breastfeeding than grandmothers in the control group. The groups were given four data collection instruments: demographic questionnaires, the Iowa Infant Feeding Attitude Scale, the Infant Feeding Test and the intent to Recommend Breastfeeding Scale. The results suggested using a one-way ANOVA showed the similarity of demographic characteristics of the intervention and control groups. The control and intervention groups were similar with respect to the following: education level, $F(1, 47) = 3.43$, $p = .07$; race, $F(1, 47) = 1.84$, $p = .18$; participant was breastfed, $F(1, 47) = 3.26$, $p = .08$; and participant breastfed her infants, $F(1, 47) = .49$, $p = .49$. The groups were also similar regarding age: $t(47) = 1.55$, $p = .13$ (two-tailed) (Grassley, Spenser, & Law, 2012). An independent t-test found that the intervention group had

higher posttest knowledge scores than the control group but had no significant differences in attitude scores or intent to recommend breastfeeding (Grassley, Spenser, & Law, 2012).

The study results suggested that participation in an intervention may facilitate grandmothers' breastfeeding knowledge, which has been identified by both grandmothers and mothers as desirable (Grassley & Eschiti, 2007, 2008). The literature supports that grandmothers can benefit from being given updated information about breastfeeding. Besides, the researchers suggested the development of various strategies to accommodate the breastfeeding mother's extended network.

Another significant source is health providers. Health providers play a vital and critical role in impacting the likelihood of breastfeeding for mothers. If they present breastfeeding information to mothers' the greater chance women may consider breastfeeding as an infant feeding choice (Shannon, O' Donnell, & Skinner, 2007; Witters-Green, 2003); it is highly recommended that health care providers discuss the benefits of breastfeeding with expecting mothers during one or if not all prenatal visits (Raffle, 2011). However, according to Raffle et al. (2011), in rural areas, some mothers do not have infant feeding conversations with their health care providers these conversations are rarely discussed. In addition, health care providers do not always endorse breastfeeding (Witters- Green, 2003) or address the substantial benefits associated with breastfeeding and encouraging mothers to choose to breastfeed as a healthier option.

Health care providers should make sure that they have the most updated knowledge on breastfeeding so that they can inform and help women who are having breastfeeding difficulties, feeding concerns, and educating their breastfeeding mothers about the importance and significant benefits of breastfeeding at all prenatal visits (Raffle, 2011). Additionally, at prenatal visits and even after birth women should be given contact information for community support groups, in which would help women take time to consider breastfeeding as a feeding method, time to prepare and learn more about this feeding option (Shannon et al., 2007). With health care providers being a great contender in a woman's choice to breastfeed having direct contact with a lactation consultant can aid in initiation success. The lactation consultant can assist in encouraging skin-to-skin contact to increase successful bonding (Moore, Anderson, & Bergman, 2009; Shannon et al., 2007); and, providing support, infant positioning for breastfeeding techniques, and successful latching skills (Raffle et al., 2011). The consultant can also help the women by sitting with mothers through a successful feeding session, recognize infant cures, and to reduce nipple pain the consultant can encourage mothers to break contact and re-create latch in which may decrease negative breastfeeding experiences (Shannon et al., 2007). Therefore, health care providers and lactation consultants should stress the importance of following up with their lactation consultant and pediatricians in which may guarantee successful breastfeeding experiences and optimal feeding for the infant (Raffle et al., 2011; Shannon et al., 2007).

Organizational Level Factors Influencing Breastfeeding

Organization factors within the SEM framework identify specific influences that influence a women's decision to breastfeed such as the health care setting, the local health department, health care systems, and workplace. These influences may come from physicians (e.g., obstetrician-gynecologists, pediatricians, and family practitioners), nurses, midwives, and lactation consultants who can either be beneficial to a women's decision to breastfeed or undermine her decision (Raffle et al., 2011). Support of breastfeeding by physicians and other health care providers who interact with pregnant women in their prenatal period play a key role in laying down the foundation for breastfeeding success (Ohio Department of Health, 2015). Routine discussions at prenatal visits about breastfeeding goals and expectations will help health care providers and the expectant mother work together to identify support, address questions regarding breastfeeding, breastfeeding anxieties, and identify individuals who will have an impact on her success (Ohio Department of Health, 2015). According to OlaOlorun & Lawoyin (2006), the success and duration of breastfeeding had health care providers who were knowledgeable about breastfeeding, supportive, health care providers who provided health education related to breastfeeding, and the nurse and lactation consultant aiding women while they breastfeed their infant.

Another significant factor in the initiation and duration of breastfeeding is routine hospital practices. Some customary practices have a negative impact on breastfeeding outcomes (Raffle et al., 2011). These everyday practices have resulted in women reporting that nurses have given their newborn infants formula against/their wishes (U.S

Department of Health, 2011). Cria et al. (2012) using the 2005-2007 Infant Feeding Practices Study II prenatal questionnaires were given to women through 12 months. The study found that all women who participated had intended to breastfeed even after discharge exclusively, 15 % had already given up exclusively breastfeeding their infant highlighting the primary practice was infants receiving non-breast milk feeding, with very few infants likely to have a medical need for supplementation, and the mother not being asked her feeding method (Cria et al., 2012).

Hospital supplementation of breastfeeding is associated with delayed onset of (20-22) lactations, suboptimal breastfeeding practices, perceived problems with breastfeeding during the hospital stay and shorter duration of exclusive breastfeeding (20-22). Hospital supplementation is not uncommon 78% of US hospitals routinely supplement healthy breastfed infants (23). The Healthy People 2020 goals- are to "reduce the proportion of breastfed newborns who receive formula supplementation within the first 2 days of life" to 14.2% (HHS, Healthy People 2020, 2011). Other hospital practices that negatively impact breastfeeding practices are the practice of separating mother and infant (Moore et al., 2009). Research has shown that when mother and baby are kept together after birth mothers tend to breastfeed for frequent and longer intervals decreasing the likelihood of formula supplementation (Shannon et al., 2007). Other significant changes to hospital practices immediately after birth include: allowing the mother to have skin to skin before dressing (unless complications with birth) at least for the first hours and bathing and physical assessments in the room parent(s) (Shannon et al., 2007; Raffle et al., 2011).

Although hospital practices that support breastfeeding are essential, they alone are not sufficient for ensuring women achieve their breastfeeding intention (Cria et al., 2012). Even with the creation of Baby-Friendly Hospital practices, fewer than half exclusively breastfeed if they intended (Cria et al., 2012). The WHO launched the Baby-Friendly Hosptial Initiative (BFHI) and UNICEF to transform practices in maternity hospitals worldwide (Philipp& Radford, 2006; Bylaska-Davies, 2011). BFHI facilitates, supports, and protects breastfeeding without commercial influences such as providing free samples of formula (Bylaska-Davies, 2011). More than 20,000 health care facilities in more than 15 countries around the world have received Baby-Friendly Certification (Abrahams & Labbok, 2009) by implementing the Ten Steps to successful breastfeeding. Abrahams & Labbok (2009) provided evidence from developed and developing countries indicates that the BFHI has had a direct impact on breastfeeding rates at the hospital level (Cria et al., 2012). In a randomized controlled trial noted improved rates of any and exclusive breastfeeding at 3 and 6 months and any breastfeeding at 12 months, infants of mothers giving birth at hospitals randomized to follow BFHI policies, compared to those delivering at control hospital (Cria et al., 2012). Rosenbery et al. (2008) analysis of data from 57 hospitals in Oregon, United States, showed that breastfeeding rates at 2 days, and two weeks postpartum increased with the institution's implementation of the Ten Steps.

DiGirolamo, Grummer-Strawn, Fien (2008), found results of the United States Infant Feeding Practices II study indicated that mothers who experienced no Baby-Friendly practices in-hospital were 13 times more likely to stop breastfeeding before six weeks than mothers who experienced six specific Baby-Friendly practices. In the state of

Georgia, the CDC reported in 2012 that only 14 % of hospitals have a model breastfeeding policy and less than 4 % follow at least nine of the ten recommended practices (CDC, 2012). Moreover, the CDC reported in 2011 that in Georgia and many another Southern states-the percentage of births at "Baby-Friendly" hospitals that promote breastfeeding was zero (Miller, 2012). Further research is needed to evaluate and fully understand the impact of organizational factors such as health care providers, hospital practices, and Baby-Friendly Hospital Initiative on a cross-national breastfeeding trend.

Community Levels Influencing Breastfeeding

Within the social-ecological model, community factors explore settings, such as schools, workplaces, neighborhoods, social environments, and places where individuals frequently visit (e.g., stores, restaurants, etc.) (CDC, 2015; Raffle et al., 2011). These hosts of factors can influence a woman's ability to initiate and sustain breastfeeding along with the elements of SEM. The extent in which the community encourages, embraces, and supports breastfeeding mothers can positively influence women to initiate and sustain breastfeeding (Raffle et al., 2011), a perceived lack of support for breastfeeding from the community can result in deterring a woman from initiating breastfeeding (Raffle et al., 2011).

Many women sense disapprovals of breastfeeding in public spaces and tend to feel embarrassed and uncomfortable. These experiences contribute to mothers feeling isolated (Henderson et al., 2011; Sparles & Babineau, 2011). A key finding in public breastfeeding embarrassment is the disapproval of the male counterpart. A study

conducted in three large cities in the U.S. with a 121 women and men both Caucasian and African American both groups showed disapproval of breastfeeding in public. The results of this study were that men acknowledged the contradictions between the public exposure of breasts in the cultural context versus public exposure while breastfeeding (Macken & Spragins, 2011). The men felt that breastfeeding was not the norm and completing wrong but seeing that same woman in a bar with her breasts semi showing were a good thing (Macken & Spragins, 2011). In the study, none of the participants mentioned any knowledge about laws supporting public breastfeeding. It may seem that informal cultural norms have a more considerable influence on public attitudes and behaviors (Macken & Spragins, 2011).

Policy Levels Influencing Breastfeeding

The social ecological model policy level relates to the regulatory channels of local, state, and federal policies that are designated to promote and protect the well-being of communities through supporting healthy initiatives, early detection, disease prevention, and management (Raffle, 2011). Policies to breastfeeding help foster and create initiatives to increase breastfeeding initiation and duration.

Breastfeeding has been promoted worldwide, and guidelines have been put into national objectives to encourage breastfeeding. The U.S. Department of Health and Human Services via the Healthy People 2020 objectives have created specific target rates that are specific to breastfeeding initiation and duration; targets for breastfeeding duration are (ever, at three months, at six months, and at one year) (HHS, Healthy People 2020, 2011; Raffle et al., 2011). The goals established for breastfeeding are significant and are

vital to initiation and duration. These specified goals are not being met in all the states of the U.S. In the western societies, and there is a notion that of a bottle-feeding culture, and breast isn't always the best. The distribution of formula samples in hospitals and various Women, Infants, and Children (WIC) programs still widely practiced in North American (Holmes et al., 2009). WIC programs provide free formula to low-income breastfeeding women, a group of U.S. women that traditionally have lower breastfeeding rates and should actively be encouraged to breastfeed (Holmes et al., 2009; Stolzen, 2010).

Breastfeeding mothers are widely protected throughout the U.S., 49 states have created legislation regarding breastfeeding in public locations (CDC, 2010). Within the 50 states, only 16 states have created legislation that mandates employer lactation support (Raffle et al., 2011). These mandates assure that employers one creating space for lactation and pumping and expressing milk (Raffle et al., 2011). In the form of space and time to breastfeed or pump (Raffle et al., 2011). In the state of Georgia regarding the workplace, pumping is voluntarily left up to the employer. The employer may provide reasonable unpaid break time each day to a mother who needs to express milk for her infant child (CDC, 2015). The employer may also make reasonable efforts to provide a room or other location near the work areas, other than a toilet stall, where milk expression can be done privately (CDC, 2015). At the federal level legislation, has provided women with the ability to breastfeed in any federal building or on any federal property (Bylaska-Davies, 2011). Other legislation has been submitted to protect breastfeeding rights and breastfeeding women from discrimination (Bylaska-Davies, 2011).

Raffle et al. (2011) found that most states have specific regulations for child care centers while protecting the mother's right to breastfeed her child while receiving child-care, in the state of Georgia there are no laws for breastfeeding legislation for child care facilities. These policy influences both positive and negative aspects of breastfeeding and have a greater impact on breastfeeding initiation and duration. The policies that can be created can potentially help states within the U.S meet the Healthy People 2020 objectives and help eliminate barriers that many women face when deciding to breastfeed.

Summary

Breastfeeding as discussed earlier is a global public health recommendation, and that exclusive breastfeeding (EBF) should be practiced for six months or longer. The benefits of breastfeeding continue to be supported throughout the literature. Significant nutritional anti-allergenic, immunological, and psychological benefits of breast milk have been identified (Handayani, Kosin & Jiar, 2010). Several studies have described the multi-faceted advantages of human milk (Chezem et al., 2003; Kim, 1994; Ball & Bennett, 2001; Flowers et al., 2008; Pollard, 2011). Additionally, the literature also supports the benefits of breastfeeding with the mother and the gains on the economy that breastfeeding implores (WHO, 2001). For many women, the infant feeding decision can be a complicated decision and may include several influences such as psychological, social, and economic factors (Handayani, Kosin & Jiar, 2010). Several authors have identified education, age, maternal education, employment, and public breastfeeding as some of the critical factors in the promotion of breastfeeding. These factors listed can

also be some of the reasons that women may choose to bottle-feed completely. Besides, social support, maternal confidence, and self-efficacy are important influences on breastfeeding practice as well.

As previously indicated, breastfeeding rates in the United States according to the CDC 2010 breastfeeding report card were 75% in the early postpartum period, with 43% breastfeeding at six months, 27.4% at 12 months, 33% of women exclusively breastfeeding at three months and 13.3% exclusively breastfeeding at 6 months (Centers for Disease Control, 2009).

In the state of Georgia breastfeeding rates still lag the national average of 79.2% for-ever breastfeeding; the state of Georgia (70.3%), breastfeeding at six months Georgia 40.1% US (49.4%), breastfeeding at 12 months for the state of Georgia was 20.7% when compared to the US average at (26.7%). Exclusive breastfeeding at three months in the state of Georgia in 2014 was 27.2%, and the US average at exclusive breastfeeding was (40.7%) with exclusive breastfeeding at 6 months for Georgia 14.5% and the US (18.8%) ((CDC Breastfeeding Report, 2014) Card, 2014).

As the population in the US continues to grow, breastfeeding rates will either increase to reach the HP2020 goals or represent potential problems that may still exist for women who decide to breastfeed. With increased evidenced-based intervention and addressing significant barriers that women may face when choosing to breastfeed is the premise of this research. Moreover, breastfeeding initiation is still a tremendous public health issue for all races and ethnicities. Although literature includes research that explores factors that influence breastfeeding, gaps remain in investigating the specific

factors between the two geographical regions (urban and rural) and in certain demographics; closing this gap is a critical step in the continuation of programs that include strategies on how to increase breastfeeding initiation and duration. These interventions should be based on areas in which represent mothers who are facing significant challenges.

As outlined in this chapter, studies using various methodologies have recommended that more research is needed in exploring these factors associated with breastfeeding initiation and exclusivity of breastfeeding at three and six months; especially in the state of Georgia. In which little research is available about barriers that dissuade rural women (Flowers et al., 2008) it has been reported that additional factors may impact the decision to breastfeed. Rural women can be influenced by geographical isolation few economic resources, limited access to health care, and smoking, which may be similar or distinct from the factors affecting urban women in their decisions (Flower et al., 2008; Song & Fish, 2006). Furthermore, identification and removal of barriers are needed for these areas, and future research should involve the exploration and possible explanation of these barriers (Wiener & Wiener, 2011).

Chapter 3 offers a clear introduction of a cross-sectional quantitative research methodology used for this study. The description and justification of the methodology used in which includes the research questions, the context of the study, sampling frame and selection of participants, data collection (research instrumentation), questionnaire development, researcher's role, and validity and reliability will be included in this chapter.

Chapter 3: Research Method

Introduction

The purpose of this study was to examine the differences in breastfeeding perceptions and rates of initiation and duration among urban and rural women in the state of Georgia. I investigated the statistical associations using crosstab to determine the odds of breastfeeding initiation for rural and urban women. The women who participated in this study were from three WIC facilities (the La Leche League of Georgia, and the Georgia Breastfeeding Coalition) in urban and rural Georgia. In this chapter, the research methodology used in this study was described. The goal of this chapter is to describe the study design, to specify the geographical locations where the study was conducted, the selection of participants that was included, a description of the population, the sampling methods, and the criteria for selection of participants. Also, the instruments used to collect the data, including a description of various statistical methods of the research questions established and methods for implementing validity and reliability of the instrument, is described. Also included is the data collection procedure, data analysis plan, and the ethical treatment of study participants. Last, this chapter will conclude with a summary of methods used.

Research Design/Approach

This cross-sectional quantitative approach intended to examine the differences in breastfeeding perceptions and rates of initiation and duration between four breastfeeding and nonbreastfeeding mothers who live in urban and rural locations in Georgia. I carried out a cross sectional survey to examine breastfeeding initiation and duration,

breastfeeding perceptions, breastfeeding self-efficacy, and breastfeeding community resources by residential location. Any breastfeeding measured breastfeeding initiation at the time of birth, and any breastfeeding for a longer duration. The data collected using three survey instruments that are described further in the Instrumentation and Materials section. Various rural counties were used for recruiting utilizing the online-survey (breastfeeding and nonbreastfeeding moms) and face-to-face questionnaires (with the option to complete online) for an urban population that was representative of Fulton County.

A portion of the sample size was obtained using the La Leche League Organization and the Georgia Breastfeeding Coalition. I disseminated the questionnaire to urban and rural areas in Georgia for breastfeeding moms via online. With the two organizations primarily located in Atlanta, Georgia, to reach breastfeeding and nonbreastfeeding mothers in rural counties, I used the snowball sampling method. At the end of the online survey, a link was included so that moms could forward the survey to other moms who they may know who might meet the inclusion criteria. The survey was offered to all women who chose to participate.

According to Creswell (2003), quantitative research is used when a hypothesis/theory is derived that a relationship exists between variables. Burns and George (1993) defined quantitative research as a formal, objective, systematic process to describe and test relationships to examine cause and effect interactions among variables. The research design was a descriptive cross-sectional study. This study design is used to sort out the existence and magnitude of causal effects of one or more independent

variables upon a dependent variable of interest at a given time (Creswell, 2003). According to Creswell, cross-sectional study design is unlike an experimental design, as a cross-sectional design is a type of observational study that involves the analysis of data collected from a population, or a representative subset, at one specific point in time.

Burns and Grove (2012) described convenience sampling as including subjects in the study based on convenience and availability. The sample was recruited from two geographical areas that are miles apart from one another. With the WIC facility serving as the host for data collection, I was able to collect information on breastfeeding practices from breastfeeding and nonbreastfeeding mothers who went to the facility for a variety of reasons. Using the La Leche League of Georgia and the Georgia Breastfeeding Coalition, I was able to collect a variety of data from urban and rural areas (e.g., income, education, etc.).

In addition, the WIC facility identified for data collection served a multiethnic population, thereby providing me with a racially and ethnically diverse study sample. All women visiting this facility were invited to participate in the study, enabling me to reach the desired sample size for my cross-sectional design. If a probability method were to be used for sampling such as random sampling, it would be difficult to logistically manage the samples drawn from large populations of two different geographical locations.

Setting and Sample Size

The setting for this study was the WIC Supplemental Nutrition Program throughout urban Georgia. WIC programs in the state of Georgia are federally-funded, health and nutrition program for infants and children birth to 5 years, pregnant women,

breastfeeding mothers (up to 1 year), and postpartum women (up to 6 months; Georgia Department of Public Health, 2014). I collected data from a sample of women from all races and ethnicities using a face-to-face interview. I used WIC facilities, and women who used volunteer breastfeeding counselors within the La Leche League of Georgia and Georgia Breastfeeding Coalition (online survey) from rural areas and other urban areas were included. The volunteer breastfeeding counselors and the breastfeeding coordinator with the Georgia Breastfeeding Coalition helped disseminate the survey with their breastfeeding clients.

To be included in the study, the women needed to (a) have given birth within the year of data collection, (b) be 18 years and older, and (c) have a child under the age of 1. Participants were predetermined by a study eligibility checklist that was in English. Exclusion criteria are used to protect vulnerable populations and to prevent conflicts of interest (Polit & Beck, 2012). These factors included (a) women younger than 18 years of age, (b) women unable to read or write English, (c) women with a mental health disorder that may render the mother unable to breastfeed, or (d) a health condition of the infant that prevents the mother from breastfeeding.

Burns and Grove (2001) stated that there are rules about sample size, but a sample should have at least 30 respondents. I used quantitative measures and, according to Polit and Beck (2012), quantitative research designs require large samples to increase representativeness and reduce sampling error. The sample size is important in accurately establishing relationships. The sample size is chosen to maximize the chance of uncovering a mean difference, which is also statistically significant (Polit & Beck, 2012).

The larger the sample size increases the chance of significance and more reliably reflect the population means (Polit & Beck, 2012).

To establish the sample size, the software G*Power 3 was used. This sample size for Research Question 1 was determined using the statistical analysis using chi-square tests (goodness of fit test) to assess breastfeeding initiation (BF initiation- Y/N, rural or urban), and a t test for independent samples was used to evaluate breastfeeding duration. The study power was set to 0.8 and Type 1 error of 0.05. According to Cohen's (1988) guidelines for interpreting small, medium, and large effect sizes are given as points (e.g., d of .2=small, .5=medium, .8= large; Cohen, 1988). Using research from the Iowa Infant Feeding Scale De la Mora et al. (1999), I used an alpha of .05 meaning that there would only be a 5% chance of the scholar reaching the wrong conclusion. Because breastfeeding initiation and duration is not a rare outcome, I used a medium effect size (.50). Choosing a higher alpha level may increase the likelihood of rejecting the null hypothesis (De la Mora et al., 1999). A total sample size of 52 participants was required to evaluate the null hypothesis for Part 1 of the first research question (B/F initiation Y/N, rural or urban). For the second part of Research Question 1, I used a two- tailed independent t test using the G* Power 3, which yielded a sample size of 128. The larger sample size of 128 was used to evaluate the Research Question 1.

To calculate the required sample size to evaluate the null hypothesis for Research Question 2, G*Power 3 was again used. A two-tailed, independent t test assuming the power of 0.80, Type 1 error of 0.05, and an effect size of 0.50 were entered as

parameters. The sample size calculation indicated the sample size for urban women was 64, and rural women were 64 for a total sample size of 128 women.

Self-efficacy for mothers in intervention groups have significantly higher mean BSES-SF scores at both 4 and 8 weeks that in most referent groups (Liu et al., 2011). Using goodness of fit test (chi-square) to answer Research Question 3 and 4 for with the effect size medium at 0.50, an alpha of .05 and the power of 0.80, the sample size was 52.

The sample size required to assess each of the research questions was 128 women. The sample size was increased by 10% to preserve the reliability of the primary study to account for the possibility of missing data (e.g., unanswered questions) (Suresh & Chandrashekra, 2012). Therefore, 138 eligible participants were needed for the main study. A pilot study was conducted to assess the reliability and validity of the instrument. A total of 14 women were recruited for the pilot study. These women were not included in the full study.

Recruitment

Site Recruitment

I recruited WIC organizations by conducting online research on the WIC facilities located in Fulton County. After my initial research, I contacted the WIC director via e-mail and explained the overview of my intended study and requirements. I was able to set up an in-person meeting to discuss other facilities participation and to explain my research in greater detail. Before establishing this partnership, I had to get Georgia State institutional review board (IRB) approval to use the WIC facilities for data collection. Once the WIC office expressed an interest in the study, I sent an additional e-mail

requesting them to complete a letter of cooperation (see Appendix I) stating that I had permission to use their WIC facilities for conducting the study. The organizations (La Leche League and Georgia Breastfeeding Coalition) that partnered with me were responsible for disseminating the survey online provided an e-mail with a letter of cooperation.

Participant Recruitment

I recruited participants using a convenience sampling method and snowball sampling. Participants were notified of the opportunity to participate in the study through a flyer posted at the WIC facilities in urban Georgia county (Fulton County) for 2 weeks. I used a WIC facility for this research because these facilities service a diverse demographic of women. Fulton County has 0.3% American Indian, 6.7% Asian, 7.6% Hispanic, 44% White (alone), 44% Black or Africa American, and 0.1 Native American and Pacific Islander (United States Census Bureau, 2017).

The approved flyer (Appendix N) had information regarding the study and the purpose but also included times that I was at each location. At the site, the questionnaire was self-administered using paper and pencil. Besides, La Leche League of Georgia and the Georgia Breastfeeding Coalition helped to recruit breastfeeding and nonbreastfeeding mothers via e-mail, Facebook, and through their volunteer breastfeeding counselors in urban and rural areas of Georgia. The participants who were recruited through La Leche League of Georgia and the Georgia Breastfeeding Coalition completed the survey online. Participants who were recruited from the WIC facility completed the survey in person but

had the opportunity to complete the survey online if they were unable to complete the survey in person.

The WIC receptionist gave out the flyers to anyone who wanted to participate. If any participant had questions about the study, my contact information was included on the flyer. At the end of the online survey, mothers were to forward the link to the survey to other mothers they may know who meet the inclusion criteria for the study. Based on the number of responses in the initial phase of data collection, additional WIC facilities and breastfeeding organization were needed to reach the sample size. I requested several modifications to the IRB application to (a) solicit addition WIC facilities. (b) solicit adding another breastfeeding organization, and (c) forward the survey link to other mothers I felt meet the inclusive criteria.

Inclusion Criteria

The inclusion criteria were women who were (a) 18 years of age and older and (b) given birth within the past 12 months and has a child under the age of 1. Exclusion criteria were (a) women younger than 18 years of age and (b) women unable to read or write English. Permission was gained to recruit and collect data at the WIC facilities in the urban and rural areas. Permission to recruit from WIC facilities was approved.

Research Questions and Hypothesis

This quantitative cross-sectional study was designed to examine breastfeeding perceptions, odds of initiating and sustaining breastfeeding (duration), and breastfeeding resources that may be associated with breastfeeding initiation and duration in urban and

rural Georgia. I also wished to determine if these breastfeeding markers exist in urban or rural locations.

1. Do rural women have different odds of initiating and sustaining breastfeeding than their urban counterparts?

$H_0$1: Rural women do not have different odds of initiating and sustaining breastfeeding as their urban counterparts.

H_a1: Rural women do have different odds of initiating and sustaining breastfeeding as their urban counterparts.

2. Do women in rural areas have higher levels of breastfeeding self-efficacy than women in urban areas

$H_0$2: Women in rural areas do not have higher levels of breastfeeding self-efficacy than women in urban areas.

H_a2: Women in rural areas do have higher levels of breastfeeding self-efficacy than women in urban areas.

3. Do women in urban areas use their available and local community breastfeeding resources more often than rural women? Please list resources

$H_0$1: Women in urban areas do not use more of their available and local community breastfeeding resources more often than rural women

H_a3: Women in urban areas do use more of their available and local community breastfeeding resources more often than rural women

4. Are there differences in breastfeeding perceptions among women in urban and rural areas?

$H_0$4: There are no differences in breastfeeding perceptions among women in urban and rural areas.

H_a4: There are differences in breastfeeding perceptions among women in urban and rural areas.

Researcher's Role

As part of this research, my role was to manage all aspects of the research and to act as the principal investigator. After Walden University IRB approval (05-09-17-0118352), I used three WIC facilities for data collection and received a secured signed letter of cooperation from the WIC facilities, La Leche League of Georgia, and the Georgia Breastfeeding Coalition. Also, it was my responsibility to offer detailed information regarding the study with community partners as well as participants of the study. I was responsible for the study recruitment and making sure that each participant fully understood the purpose and objectives of the study. As the principal investigator, I was also responsible for the instruments used for data collection. I was accountable for safeguarding each participant's confidential information during and after data collection.

Each participant who agreed to participate in this research was given a consent form with a full acknowledgment of participation and full disclosure of all components of the study. A written summary of the research results was given to the WIC facility, La Leche League, and Georgia Breastfeeding Coalition, and it had my contact information and the contact information of the Walden University IRB. In the event of an issue or any concerns, I was responsible for addressing any problems and any concerns that may arise.

Instrumentation

I used a self-administered questionnaire that was developed based on the literature review and other research instrumentation used in breastfeeding research. I attempted to identify the potential barriers faced by child-rearing mothers who may or may not decide to breastfeed. A mother's decision to breastfeed may meet numerous challenges, and this questionnaire was used to determine those barriers. The self-administered questionnaire developed for this study combines the Iowa Infant Feeding Attitude Scale (De La Mora et al., 1999), Breastfeeding Self-Efficacy Questionnaire (Dennis, 2009), and The Breastfeeding in Public Survey (Doshier, 2014).

The upper portion of the questionnaire assessed education level, sociodemographic characteristics (maternal age, marital status, job status, race, ethnicity, and geographical region), and infant feeding method. In the second portion of the questionnaire, I investigated the variables: breastfeeding perception, community resources, and maternal confidence regarding breastfeeding.

The Iowa Feeding Attitude Scale was developed to measure the mother's perception and attitudes regarding breastfeeding. The Iowa Feeding Attitude Scale is a 17-item questionnaire for this study only 10 of the 17 questions will be used. The 10 questions deemed the most appropriate in answering the research questions proposed for this research were selected. The IFAS was developed and refined during three independent studies involving 980 postpartum women who were well-educated Caucasian women at the time of hospital discharge (Lewallen, 2006). Breastfeeding duration was measured by phone over a 16-week period with a sample of 725

breastfeeding women (Lewallen, 2006). Within the study sample, the average duration of exclusive breastfeeding was 6.5 weeks, and for partial breastfeeding was 10 weeks. According to Lewallen (2006), scores on the scale accounted for 8% of the variance in the duration of exclusive breastfeeding and 6% of the variance in the duration of partial breastfeeding.

The Breastfeeding Self-Efficacy Scale-Short Form (BSES) will be utilized to measure maternal confidence, (Dennis & Faux, 1999). It is a 14-item; self-report instrument developed to measure breastfeeding self-efficacy (Handayani, Kosnin, & Jiar, 2009). According to Dennis (1999) results from assessing the scale will show that participants who rate their self-efficacy higher, more often exclusively breastfeed. Also, the BSES-SF is an excellent measure of breastfeeding self-efficacy and is considered ready for clinical use to help (a) identify breastfeeding mothers at substantial risk, (b) assess breastfeeding behaviors and cognitions to individualize confidence-building strategies, and (c) evaluate the effectiveness of various interventions and guide program development (Dennis, 2003). Permission to utilize the tool has already been received from the creator of the scale.

The Breastfeeding in Public Survey is a questionnaire that was created based on the most identified breastfeeding barriers for mothers who may or may not breastfeed in public and the use of community resources mentioned in the literature (Doshier, 2014). The questionnaire has two questions, and one question regarding community breastfeeding resources will be used for this research. Validation of this question was done within the pilot study.

The survey to be used in this study combines questions from each of the previously mentioned surveys. Some of the surveys have been shortened to avoid redundancy and for ease of use. Thus, the full instrument was pilot tested to ensure clarity and to identify issues with validity or reliability of any of the subscales.

Validity and Reliability

Validity is fundamental in research. To establish validity helps the researcher intend to measure what they intend to measure or to see how accurate the research results are (Torres et al., 2002). The questionnaires that were used for data collection purposes was the combination of various validated breastfeeding questionnaires used throughout the literature. A content expert reviewed the survey that was created using the combined scales for validity from Healthy Mothers Healthy Babies organization. The Iowa Infant Feeding Attitude Scale was used to measure the mother's perception and attitudes regarding breastfeeding. The IIFAS consists of 17 items with a 5-point Likert Scale ranging from 5 (strongly disagree) to 1 (strongly disagree) (De La Mora et al., 1999). The IIFAS has been used by several researchers and has shown to have good internal consistency with a Cronbach's alpha that ranges between 0.78 and 0.85 in most studies (Saied et al., 2014). Other researchers who have used the IIFAS in other countries with translation to other languages had internal consistency reliability of Cronbach's Alpha coefficient 0.83 (Saied et al., 2014).

Breastfeeding Self-Efficacy Scale

The second portion of the questionnaire included questions from the Breastfeeding Self-Efficacy Scale (BSES) has 33-items based on social cognitive theory;

self-report instrument developed to measure breastfeeding confidence. Majority of the items on the scale can be described as phrases such as "I can always" and anchored with a 5-point Likert-type scale where 1 =not at all confident and 5= always confident (Dennis & Faux, 1999). Bandura suggests that all items should present positive and scores should be summed to produce a range from 33 to 165, in which higher scores will indicate higher levels of breastfeeding self-efficacy (Bandura, 1977). Based on a literature review of the BSES content validity has been established with interviews with breastfeeding mothers following a pilot test and an expert judgment using a method by Lynn (Lynn, 1986).

An initial psychometric assessment was conducted with a convenience sample of 130 Canadian breastfeeding women where questionnaires were completed in-hospital and at 6-weeks postpartum (Dennis & Faux, 1999). According to Torres et al. (2002), Cronbach alpha coefficient for the scale was .96 with 73% of a corrected item-total correlation ranging between 0.30 and 0.70. Torres et al. (2002) also had support for predictive validity was demonstrated through positive correlations between BSES scores and infant feeding method at 6 weeks postpartum, indicating strong validity. Also, the literature the BSES-SF has shown strong reliability and validity.

According to Guill (2010), the reliability of the BSES-SF was reported with a Cronbach alpha of .94. Construct validity was demonstrated by significant correlations between the BSES-SF and various scales such as the Rosenberg Self-Esteem Scale, the Perceived Stress Scale, and the Edinburg Postnatal Depression Scale with $p<.001$ (Guill, 2010). Predictive validity for the scale was demonstrated by a statistically significant

difference in the scores of BSES-SF for mothers who were exclusively breastfeeding and those who were partially breastfeeding or bottle-feeding (Guill, 2010).

Although initial support for validity and reliability of the BSES was attained, internal consistency statistics and factor loadings suggested a need for item reduction (Melo Dodt et al., 2012). The scale was redefined and psychometrically assessed to reach a shortened version- BSES-Short form in which was used for this research. The short-form of the BSES is a 14- item instrument developed to measure breastfeeding confidence. All items preceded by the statement mentioned previously "I can always" and are anchored by a 5-point Likert scale type, with 1= not at all confident and 5= always confident. All items are presented positively, and scores summed to produce a final score ranging from 14 to 70, with higher scores indicating better breastfeeding self-efficacy (Dennis, 2003). The psychometric assessment was conducted on a population-based sample of 491 breastfeeding women. The Cronbach's alpha coefficient for BSES-SF was .94, with a scale mean of 55.88 (SD=10.85) (Dennis, 2003).

Breastfeeding in Public Survey

The one question "Do you use any breastfeeding resources that your local county has to offer? Please list", that will be used from the Breastfeeding in Public Survey will be validated within the pilot study. This question is to see if mothers use community breastfeeding resources that may assist with breastfeeding initiation and duration. All resources listed will be counted. As mentioned earlier, the reliability of the study instrument will be examined through the pilot testing. The BSES reliability was done through several methodologies testing by Dr. Cindy Dennis, "in which reliability

estimates of the BSES-SF, including Cronbach's alpha coefficient, inter-item correlations, and corrected item-total correlation, appears to demonstrate excellent internal consistency" (Ip, Yeung, Chow, Chair & Dennis, 2012). Through the refinement process of the BSES short form has greater clinical utility due to ease of administration (Ip, Yeung, Chow, Chair & Dennis, 2012).

Data Collection

Full approval for data collection was obtained through Walden University IRB **05-09-17-0118352**, as well as full consent from the WIC facilities, La Leche League of Georgia, and Georgia Breastfeeding Coalition with approval to disseminate questionnaires onsite for WIC facility and strictly online for La Leche League of Georgia and the Georgia Breastfeeding Coalition. The data were collected through self-administered questionnaires and online. The questionnaire was disseminated via the web through Survey Monkey and self-administrated at the WIC facility.

The participants who decided to participate online accessed the survey via the study's website where they reviewed the study information and proceeded with the survey. The completed questionnaires were sent directly to the investigator via the internet. The web address link to the questionnaire was also listed at the bottom of the consent form.

I was present once a day every week to each of the WIC facilities until data collection was complete. The flyers were readily available at the receptionist's desk as well as bulletin boards within each facility for 2 weeks. These notifications included the days and time for survey administration and all my contact information. The flyers were

given to everyone that came into the WIC facility. All participants who fit the inclusion criteria received a consent form, to protect their privacy; no signatures were collected, and their completion of the survey indicated their consent. Participants who received email invites from La Leche League, and the Georgia Breastfeeding Coalition completed the survey online, and the investigator closed the link four weeks after the initial email invites were sent.

Pilot Study

A pilot study was employed to gather more information on the data collection process from a convenience sample. The pilot study was needed to (a) effectiveness of the data collection methods (b) time needed to complete the survey, (c) understandability of the questions being asked and (d) the reliability of the instrument. Selection for the participants was based on the inclusion criteria for selecting participants for the full study. To conduct the pilot study, I requested permission from the WIC facility to recruit participants on-site. With a letter of cooperation already provided for the main-study and updated email was sent to begin the pilot study.

The pilot study was done via pencil/paper. All 14 participants received an informed consent before participating in the pilot study. Throughout the consent form, the participants were informed of the importance of their participation and that there were no monetary gains offered. Their participation was solely being to contribute to this body of research. The research questionnaires were collected using convenience sampling from a sample of 14 mothers fitting the inclusion criteria for the study. These criteria are (a) 18 years or older (b) have given birth within the year of data collection or has a child under

the age of one. I allowed 2 weeks to collect the data from the 14 mothers. After pilot testing the instrument on the sample of 14 mothers, I examined the data for any issues in clarity, reliability or validity. I found some problems and had to make modifications to the data collection tool. These modifications needed to be complete for me to move forward with the pilot study. I determined that if adjustments were not made these issues could be encountered during the implementation of the full study. As a result, I submitted several "Request for change in Procedure" to Walden's IRB application. The requests were to:

1. Move some questions around for a better flow
2. Permission to add two more WIC facilities and one more breastfeeding organization
3. Permission to add to the online survey full study indicating that participants can forward the link to other mothers who may be willing to participate

After the pilot study, I went over the necessary changes and revised the survey before proceeding with the main study. I finalize the time needed to take the complete the online and face-to-face survey and the understandability of the survey.

Main Study

The main study was like the pilot study; the main study was executed primarily at three WIC facilities in urban Georgia. Study announcements were affixed on bulletin boards in those local WIC offices. I had a table set up each time I was at the WIC facility.

Women who saw the flyer and wanted additional information regarding the study requested a study packet from me explaining the contents of the study. Each study packet described the inclusion criteria for participation in the study. Participants who were deemed ineligible based on the inclusion criteria did not go any further within the study packets and returned the packets to me, and I thanked them for their time. If the participant did meet the inclusion criteria and agreed to participate, they were given the survey packet. The completion of the survey indicated their consent. Once the survey was completed, the participants returned the survey to me, and each participant was given the debriefing form. I ensured that the documents were properly and securely stored.

The La Leche League of Georgia and the Georgia Breastfeeding Coalition disseminated the survey link via email, Facebook, and their volunteer breastfeeding counselors. The La Leche League and the Georgia Breastfeeding Coalition contacted mothers from their contact bank and sent email invites for participation for the study. When participants received the email invites it listed the inclusion criteria within the invite and the consent form to all participants who qualified. After meeting the inclusion criteria, the participants went to the link and started the survey. The debriefing form was included at the end of the survey. To reach other urban and rural breastfeeding and non-breastfeeding mothers at the end of the survey a link was provided so that moms can forward the survey to other moms they may know who might meet the inclusion criteria. Clicking on the link implied informed consent. I ended the survey when the sampled population was reached.

Data Analysis

The statistical analysis was performed using IBM SPSS Statistics 23. A basic analysis was conducted using SPSS software to produce the descriptive statistics including the measures of central tendency (e.g., mean, mode, median), standard deviation, confidence interval, frequency distribution, and range (Green & Salkind, 2011). Table 1 presents the research questions, variables measured, and statistical analyses within the study: (a) Do rural women have different odds of initiating and sustaining breastfeeding than their urban counterparts? (b) Do women in rural areas have higher levels of breastfeeding self-efficacy than women in urban areas? (c) Do you use any community breastfeeding resources that your local county has to offer? If so, please list (d) Are there differences in breastfeeding perceptions among women in urban and rural areas?

Research Question 1: To answer research question 1, a descriptive analysis crosstab test was used to examine BF initiation and to examine BF duration was examined using a Mann-Whitney U test. This question will be answered in the demographic survey section of the breastfeeding questionnaire.

Research Question 2: To answer research question 2, a 2-sample t-test will be used to compare self-efficacy scores for women in rural and women in urban areas using the Breastfeeding Self-Efficacy Scale. Comparisons within and between the two geographical locations were done with inferential statistics.

Research Question 3: To answer research question 3, a Chi-square analysis; Goodness of fit test was used to compare the number of resources listed and used by

women in urban and rural women, using the IIFAS (question 8), and Breastfeeding and Employment Study.

Research Question 4: To answer research question 4, an Independent t-test was used in assessing breastfeeding perceptions for urban and rural women. Using the Effects of Breastfeeding and Breastfeeding in Public survey question 2. Table 1

Statistical Tests Used to Analyze Quantitative Questions

	Instrument	Variable	Analysis/Test
Descriptive statistics for demographics to understand the difference in marital status, income, education level, and infant feeding among women in urban and rural Georgia	Questions 1-10 on survey created by researcher	Demographic survey items: marital status, SES, education level, age, and breastfeeding status	Means, percentages, median
RQ1. Do rural women have different odds of initiating and sustaining breastfeeding than their urban counterpart?	This question will be answered in the demographics. Questions 7, 8, 9 of a survey created by the researcher. These questions will help compare rates of breastfeeding for both groups.	rural and urban (independent variable) breastfeeding initiation and breastfeeding duration (dependent variables)	Crosstab was used to examine the difference in BF initiation by geographic location (urban/rural). Differences in BF duration by location will be examined using a Mann- Whitney U test.

RQ2. Do women in rural areas have higher levels of breastfeeding self-efficacy than women in rural areas?	Breastfeeding Self-Efficacy Scale scores from questions 1-14	Independent variable (rural/urban) Dependent variable (self-efficacy)	A 2-sample t-test- will be used to compare self-efficacy scores for women in rural and women in urban areas. Comparisons between the two geographical locations will be done with inferential statistics.
RQ3. Are there differences in community resources among women in urban and rural areas?	Effects of Breastfeeding in Public score from question 2	Independent variable (urban/rural) Dependent variable (community breastfeeding perceptions)	Chi-square (Goodness of fit test) will be using to find differences in use of and availability of community resources (community resources will be listed and counted).
RQ4. Are there differences in breastfeeding perceptions among women in urban and rural areas?	IIFAS score from questions 2,3,6,7,9,12,14,15 and 17,	Independent variable (rural/urban) Dependent variable (breastfeeding perceptions)	Independent t-test was used to find differences in breastfeeding perceptions among women living in urban and rural Georgia

Ethical Treatment of Participants

All participants were treated with respect. Informed consent was implied when each participant took the survey packet to complete. Additionally, all participants had the right to withdraw at any time during their participation. Each participant knowingly had prior information to study, and if they did decide to withdraw, no penalty or explanation was needed. As a precaution study material (e.g., study packet) did not include identifiers and the questionnaires did not request any identifying information that may associate a

person with the study, and all information was kept anonymous to the public. All study material collected at the end of data collection was destroyed based on the guidelines from Walden University. After removal from the data collection site, the study materials were transported to a secure location in a metal box. No other person had access to the completed questionnaires. I used only completed questionnaires for data analysis. After all the data was collected the questionnaires were analyzed and recorded by me and the questionnaires were destroyed via paper shredder.

Summary

This chapter was a detailed view of the quantitative research methodology used for this body of research. In this chapter, I presented details about the setting, sampling methods, methodology, data collection tools, data analysis, criteria for selecting participants, validity, and reliability, the researcher's role, and ethical treatment of the participants. Further information on data analysis and data collection results will be presented in Chapter 4, and Chapter 5 will present a discussion of those results, interpretations, and limitations of the research.

Chapter 4: Results

Introduction

In this cross-sectional analysis, I aimed to examine breastfeeding perceptions, breastfeeding resources, and breastfeeding initiation and duration in urban and rural areas of Georgia. The quantitative research questions were constructed to investigate (a) if rural women have different odds of initiating and sustaining breastfeeding than their urban counterparts, (b) if women in rural areas have higher levels of breastfeeding self-efficacy than women in urban areas, (c) if women in urban areas use their available and local community breastfeeding resources more often than rural women, and (d) differences in breastfeeding perceptions among women in urban and rural areas of Georgia. To address these questions, responses from the IIFAS, Breastfeeding Self-Efficacy Questionnaire and the Breastfeeding in Public Survey were analyzed. This chapter provides an overview of the data collection, a description of the sample using descriptive statistics, and a presentation of the results of the statistical analysis.

Pilot Study Overview

Before implementing the online survey, a pilot study was conducted to test the effectiveness of the data collection methods, the time needed to complete the survey, understandability of the questions being asked, and the reliability of the instrument. I used a small group of 14 breastfeeding mothers in June 2017. The WIC facility in urban (Fulton County) were used for soliciting the mothers for participation.

Demographic Characteristics of Pilot Study Participants

In total, 14 participants received the survey; taking the survey implied formal consent. Participants' ages primarily fell between 30-39 (54.5%, n=7) while the remaining participants were ages 21-29 (27.3%, n= 3). Most of the participants had a high school degree or equivalent diploma (27.3%, n=3) or attended trade/technical/vocational training school or had some college or higher (18.2% for all other categories, n=9). Of the participants that completed the study were single (45.5%, n=6) with a household income of $10,000 to $24,999 (36.4%, n =4).

Results of the Pilot Study

To determine the amount of time necessary to take the survey, I calculated the time required to review the informed consent form with the average time needed to complete the survey (e.g., 3 minutes + 7 minutes= 10 minutes). The process for establishing reliability for the data instruments used was discussed in Chapter 3. To gain an in-depth understanding of whether the participants understood the items on the questionnaire, I asked each question verbally to the participants after completion of the survey. Based on the participants' comments, the data collection instrument was clear and easily understood. As a result of piloting the survey, the questions were reorganized to align with the headings that were listed in the survey. Specifically, three questions needed to be rearranged:

Table 1

Study Questions Renumbered

Questions before the pilot study	Questions after pilot study
1) Do you live in urban or rural Georgia?	10) Do you live in urban or rural Georgia
11) Are you currently breastfeeding?	1) Are you currently breastfeeding?
12) Have you breastfed within the last year?	2) Have you breastfed within the last year?

Based on the pilot study participants' feedback and responses to the survey questions, I had to make changes to the order of the questions as stated previously in the data collection instrument. As a result, a "Request for Change in Procedure" was submitted to the Walden University IRB to make the needed changes to the data collection instrument. The renumbered final instrument is provided in Appendix C. After approval from the Walden University IRB, I conducted the full study.

Research Setting

This study was conducted using an online survey and a face-to-face survey. Mothers over the age of 18 accessed the online survey via e-mail notices from La Leche League and Georgia Breastfeeding Coalition and by accessing the web address listed on flyers posted by the La Leche League and Georgia Breastfeeding Coalition. The face-to-face portion was conducted at two WIC facilities. Initially, I partnered with one breastfeeding organization and one WIC facility (North Fulton Regional WIC). These organizations agreed to help disseminate the survey online (La Leche League) and on-site (WIC facility). Several modes of communication were used to recruit potential

participants (Facebook, e-mail, flyers, bulletin announcement, etc.). To recruit a more diverse urban sample, I requested permission from the Walden University IRB to add another WIC facility and another breastfeeding organization (Georgia Breastfeeding Coalition). After approval was granted, the additional facility and organization were included. The majority of participants recruited completed the online survey.

Overview of Data Collection

For this study, the data collection tool consisted of the BFSF short-form, IIFS, and one question from the Breastfeeding in Public survey. Data were collected using a cross-sectional survey made available through an online format and in-person. Access to the survey was available to anyone with Internet capabilities who met the inclusion criteria. Participants on site had the opportunity to complete the survey online. Consent was implied when the participants clicked the next button after reading the consent form. In-person consent was implied after the receipt of the survey.

A total of 203 women gave implied consent prior to accessing the online survey. Forty women agreed to participate in an in-person survey. Partial surveys were not included in the data analysis. A total of 150 participants completed the survey in its entirety. The survey completion rate was 74% ([150/203] *100). The missing responses were due to my error and participants not completing the survey in its entirety.

After Walden University IRB approval, data collection was initiated in July 2017 by launching the survey using. To recruit participants, partner organizations used social media, client databases, and disseminated flyers, which yielded 110 completed online surveys. I requested in August 2017 to Walden University IRB to include another

organization and WIC facility to help get more participants in urban and rural Georgia. Data collection was completed in November 2017, and the survey data were downloaded from Survey Monkey into SPSS software. All in-person survey data were entered into SPSS manually. General guidelines for accurate data management were considered, which included cleaning the data, minimizing and renaming variables, and tracking the codes for each variable. Additionally, all data were backed up and stored following Walden University requirements and IRB guidelines.

Data Analysis: Full Study

Summary of Statistical Analysis

Descriptive statistics were generated for the demographic items, information of feeding practices, and breastfeeding mothers' location. Chi-square analysis was performed to assess the bivariate relationships between breastfeeding status and demographic variables. All tests were performed with $\alpha = 0.05$ as the level of significance. A crosstab was used to determine the odds of breastfeeding to examine the differences in breastfeeding initiation by location, and a Mann-Whitney Test was also conducted to determine the differences in breastfeeding duration by location (urban and rural). It was hypothesized that rural women did not have the same odds of initiating and sustaining breastfeeding than their urban counterparts. Two questions from the survey were combined to make one variable breastfeeding variable: "Are you currently breastfeeding?" and "Have you breastfed within the last year?" For this study, breastfeeding initiation was defined as a mother breastfeeding at any time after birth.

Demographics for Overall Study

Demographic Characteristics of Participants

The required sample size for this study was 138. The final sample size was 150; 110 participants completed the online survey and 40 completed the survey in person.

Age and marital status. The frequency and percentages of participant demographic data were obtained from the descriptive analysis. The age of the participants was reported by group: 18-20, 21-29, 30-39, 40-49, and 50-59. Of the 150 participants who completed the survey face-to-face and online, 26.7% (n=150) were between the ages of 21-29 and 58.0 % were between the ages of 30-39. In addition, 61.3% (n=150) were married; 6.7% were in a domestic partnership; 24 % identified as single, never married; 0.7% widowed; 3.3 divorced; and 4.0% separated. The data on age and marital status are presented in Table 2 and Table 3.

Education and income level. Based on the demographic data for education, 35.3% (n=53) had received a graduate or professional degree, 25.3% (n=38) had a bachelor's degree, and 18% had (n=27) some college but no degree. For income, 21.5% (n=31) had an annual income of $25,000 to $49,999 and 20.1% (n= 29) earned $50,000 to $74,999 annually. The data on education level and income are presented in Table 4 and Table 5.

Table 2

Frequencies and Percentages for Age

	Frequencies	Percentages
Age		
18-20	8	5.3

21-29	40	26.7
30-39	87	58.0
40-49	15	10.0
Total	150	100.0

Table 3

Frequencies and Percentages of Marital Status

	Frequency	Percentage
Marital Status		
Married	92	61.3
Widowed	1	0.7
Divorced	5	3.3
Separated	6	4.0
In a domestic partnership or civic union	10	6.7
Single, never married	36	24.0
Total	150	100.0

Table 4

Frequencies and Percentages of Education Level

	Frequency	Percentages
Education		

Less than high school degree	4	2.7
High School degree or equivalent	15	10.0
Some college, but no degree	27	18.0
Trade/technical/vocational training	4	3.3
Associate degree	8	5.3
Bachelor's degree	38	25.3
Graduate or professional degree	53	35.3
Total	149	99.9

Note: For this question, data were missing from one participant for education.

Table 5

Frequencies and Percentage of Income

Income	Frequency	Percentage
$0 to $9,999	14	9.7
$10,000 to $24,999	14	9.7
$25,000 to $49,999	31	21.5
$50,000 to $74,999	29	20.1

$75,000 to $99,999	18	12.5
$100,000 to $124,999	15	10.4
$125,000 to $149,999	11	7.6
$150,000 to $174,999	6	4.2
$175,000 to $199,999	2	1.4
$200,000 and up	4	2.8
Total	144	99.9

Note: For this question, data were missing from six participants for income.

Race and ethnicity. Table 6 and Table 7 present the results of the race/ethnicity analysis. Thirty-eight percent (*n*=57) of the study participants were White women and 56% (*n*= 84) indicated they were Black or African American. Nine percent of participants indicated that they were Hispanic or Latino (*n*=13). One participant declined to answer the ethnicity question.

Table 6

Frequencies and Percentages of Race

Race	Frequency	Percentages
White	57	38.0
Black or African-America	84	56.0
American Indian or Alaskan Native	1	0.7

Asian	6	4.0
Native Hawaiian or Pacific Islander	2	1.3
Total	150	100.0

Table 7

Frequencies and Percentages of Ethnicity

Ethnicity	Frequency	Percentage
Hispanic or Latino	13	8.7
Not Hispanic or Latino	136	91.3
Total	149	100

Infant feeding. Table 8 and Table 9 shows the frequencies and percentages of women who reported breastfeeding currently and/or had breastfed within the past year. Sixty-one percent (*n*= 92) reported currently breastfeeding; 81% (*n*=121) had breastfed within the last year. Breastfeeding initiation was determined by combining responses to currently breastfeeding and breastfed within the last year. Seventy-three percent (*n*=110) of women were found to have initiated breastfeeding and 26.6% (*n*=40) did not.

Table 8

Frequencies and Percentages for Currently Breastfeeding

Currently Breastfeeding	Frequency	Percentage
Yes	92	61.3
No	58	38.7
Total	150	100

Note$_a$: "Infant Feeding" relates to the question "Are you currently breastfeeding? Where yes=1 and no=2, also have you breastfed within the last year? Where yes=1 and no=2

Table 9

Frequencies and Percentages of Breastfed within the last year

Breastfed w/ last year	Frequency	Percentage
Yes	121	80.7
No	29	19.3
Total	150	100

Note$_a$: "Infant Feeding" relates to the question "Are you currently breastfeeding? Where yes=1 and no=2, also have you breastfed within the last year? Where yes=1 and no=2

Location (urban and rural): Table 10 shows the frequencies and percentages of the participants who participated in the study. A majority of the participants resided in urban Georgia at (64%).

Table 10

Frequencies and Percentages of Participants in Urban and Rural Georgia

Location	Frequency	Percentages
Urban	96	64%

Rural	54	36%
Total	150	100

Note$_a$: For this question Urban=0 and Rural=1

Race and Location: Table 11 reports the distribution of the sample by race and location (urban or rural). Twenty-seven percent (n=26) of urban participants were White while 67.7 percent of urban participants were Black/African American (n=65). Among participants who resided in rural Georgia, 57.4% were White (n=31), 35.2 % were Black/African American (n=19).

Table 11

Location by Race

N=149	Location	
	Urban (n=96)	Rural (n=54)
Race		
White	27.1% (n=26)	57.4% (n=31)
Black/African American	67.7% (n=65)	35.2% (n=19)
American Indian/Alaskan Native	1.0% (n=1)	0.0% (n=0)
Asian	4.2% (n=4)	3.7% (n=2)
Native Hawaiian/Pacific Islander	0.0% (n=0)	3.7% (n=2)
Total	100.0%	100.0%

Breastfeeding Initiation and Race: The largest racial group for initiating breastfeeding were Black/African Americans 57.7% (n=75) and the second largest percentage were White mothers 36.9% (n=48).

Breastfeeding Duration by Race: Table 6 shows the crosstab analysis for breastfeeding duration by race. Sixty-two percent (n=33) of white mothers breastfed for 6 months or longer and 20.8% (n=11) for 2-4 months. Among Black/African American women 50.0% (n=36) breastfed for 6 months or longer and 29.2% (n= 21) breasted for 0-2 months. The one American Indian participant reported breastfeeding for 0-2 months. Among Asian participants, 33.3% (n= 2) reported breastfeeding for 0-2 months, and 50% (n=3) breastfed for 6 months or longer. Fifty percent (n=1) of Native Hawaiian participants reported breastfeeding for 2-4 months and 50% (n=1) for 4-6 months.

Table 12

Breastfeeding Initiation by Race

	Breastfeeding Initiation	
N= 149		
	Yes	No
Race		
White	36.9% (n=48)	47.4% (n=9)
Black/African American	57.7% (n=75)	47.4% (n=9)
American Indian/Alaskan Native	0.8% (n=1)	0.0% (n=0)

Asian	4.6% (n=6)	0.0% (n=0)
Native Hawaiian/Pacific Islander	0.0% (n=0)	5.2% (n=1)
Total	100%	100%

Note$_a$: For this question missing one participant's response. Combined variables of "Are you currently breastfeeding? also have you breastfed within the last year? To be considered for initiated breastfeeding you have had to answer yes to both questions.

Table 13

Breastfeeding Duration by Race

	Duration			
N=134				
	0-2 months	2-4 months	4-6 months	6 months or longer
Race				
White	13.2% (n=7)	20.8% (n=11)	3.8% (n=2)	62.2% (n=33)
Black/African American	29.2% (n=21)	12.5% (n=9)	8.3% (n=6)	50.0% (n=36)
American Indian/Alaska Native	100.0% (n=1)	0% (n=0)	0% (n=0)	0% (n=0)
Asian	33.3% (n=2)	0% (n=0)	16.7% (n=1)	50.0% (n=3)
Native Hawaiian/Pacific Islander	0.0% (n=0)	50.0% (n=1)	50.0% (n=1)	0.0% (n=0)

Total	100.0%	100.0%	100.0%	100.0%

Note$_a$: For this question missing six participants responses.

Summary of Statistical Analysis

A crosstab analysis was used to analyze the odds of breastfeeding initiation between urban and rural mothers. The data analysis allowed me to answer part of research question one.

RQ1. Do rural women have different odds of initiating and sustaining breastfeeding than their urban counterparts?

H_o: Rural women have the same odds of initiating and sustaining breastfeeding as their urban counterparts.

H_a: Rural women do not have the same odds of initiating and sustaining breastfeeding as their urban counterparts.

To assess the first part of research question one (RQ1) a crosstab was conducted to determine if odds of breastfeeding differ by location. The OR=1.759 (95% C.I.=.666-4.65) suggests the odds of breastfeeding are not different for rural versus urban women (Table 14). The null hypothesis was retained.

Table 14

Results of Crosstab Test and Descriptive for Breastfeeding Initiation and Location (Urban and Rural)

Risk Estimate

		95% Confidence Interval	
	Value	Lower	Upper

Odds Ratio for Initiated Breastfeeding Variable (1 / 2)	1.759	.666	4.645
For cohort Location = 0	1.257	.806	1.959
For cohort Location = 1	.715	.420	1.216
N of Valid Cases	149		

Because the numbers for the duration for urban and rural were not normally distributed, a Mann-Whitney U test was conducted to evaluate the second part of the hypothesis that sustaining breastfeeding (breastfeeding duration) is associated with location. The results of the test suggested a small difference between breastfeeding duration and location among breastfeeding mothers. The test indicated, that breastfeeding duration among urban participants (Mean Rank= 65.71, n =84) and rural participants (Mean Rank= 70.50, n= 50), differed but there was a nonsignificant association between location and sustaining breastfeeding (U=1950.0; p=.448). The null hypothesis that rural women have the same odds of sustaining breastfeeding than their urban counterparts is retained.

Table 15

Results of Mann-Whitney U Test

Ranks

	Location	N	Mean Rank	Sum of Ranks
Duration	0	84	65.71	5520.00
	1	50	70.50	3525.00
	Total	134		

Note: Missing sixteen participants responses to duration question.

Test Statistics[a]

	Duration
Mann-Whitney U	1950.000
Wilcoxon W	5520.000
Z	-.758
Asymp. Sig. (2-tailed)	.448

a. Grouping Variable: Location

*Figure 1.*Mann-Whitney test.

Research Question 2

RQ2. Do women in rural areas have higher levels of breastfeeding self-efficacy than women in urban areas?

H_o: Women in rural areas have higher levels of breastfeeding self-efficacy than women in urban areas.

H_a: Women in rural areas do not have higher levels of breastfeeding self-efficacy than women in urban areas.

The breastfeeding self-efficacy scale is used to identify breastfeeding mothers at considerable risk of not breastfeeding, assess breastfeeding behaviors and cognitions to individualize confidence-building strategies, and evaluate effectiveness of various interventions and guide program development (Dennis, 2014). For this research question, due to an error in developing the survey all items of the self-efficacy instrument were not included on the survey. As a result, self-efficacy was not fully measured, and Research

Question 2 could not be fully answered. However, individual responses to self-efficacy questions were examined. Table 16 includes means and frequencies from individual survey items, but I am unable to test the research hypothesis. The response scale for these items ranged from 1-5 With 1 meaning low self-efficacy and 5 reflecting high self-efficacy.

Table 16

Frequencies and Mean of Participants Breastfeeding Self-Efficacy (Breastfeeding Confidence)

Breastfeeding Self Efficacy	Frequencies	Means
Baby Properly latch	130	4.15
Satisfied with BF experience	130	3.96
Comfortable Feeding	130	3.93
Continuing to breastfeed	130	4.02
Managed to breastfeed	130	3.92
Managed the BF Situation	130	3.82
Time-consuming	130	3.92
Baby Finished Breastfeeding	130	4.06
Breastfeeding demands	130	3.84
Feed at every feeding	130	3.88
Switching breast	130	3.88
N=130		

Research Question 3 RQ3. Do women in urban areas use their available and local community

breastfeeding resources more often than rural women? Please list resources

H_o1: Women in urban areas do not use more of their available and local community breastfeeding resources more often than rural women

H_a2: Women in urban areas do use more of their available and local community breastfeeding resources more often than rural women

A chi-square goodness of fit analysis was conducted to determine if women in urban areas use their available and local community breastfeeding resources more often than rural women (see Table 17).

Table 17

Summary Output of Chi-Square Local Community Resources by Location

Breastfeeding Resources	Urban	Rural	Total Percentages
N= 149			
Yes	48 (59.3 %)	33 (40.7%)	100%
No	48 (70.6%)	20 (29.4)	100%
Total	96	53	

Note$_a$: Data was missing for one participant.

The chi-square analysis indicated the association between community resources (DV) and urban and rural location (IV) was not statistically significant, X^2 (1, N= 149) = 2.07, p=.15. I failed to reject the null hypothesis.

Research Question 4

RQ4. Are there differences in breastfeeding perceptions among women in urban and rural areas?

H_o1: There are no differences in breastfeeding perceptions among women in urban and rural areas.

H_a2: There are differences in breastfeeding perceptions among women in urban and rural areas.

An independent samples t-test was conducted to compare breastfeeding perceptions among women in urban and rural areas of Georgia. There was not a significant difference in the perception scores for urban women (M= 38.4, SD=3.99) and rural women (M= 37.39, SD=5.04); t (88) = 1.20, p= 0.24. These results suggest that there are no differences in breastfeeding perceptions among women in urban and rural areas of Georgia. The null hypothesis was retained.

Table 18

Results of t-test and Descriptive Statistics for Breastfeeding Perceptions in Urban and Rural Mother

	Breastfeeding Perception						95% CI for Mean		
	Urban			Rural					
	M	SD	n	M	SD	n	Difference	t	df
Breastfeeding Perception	38.36	3.99	96	37.40	5.05	53	-.640, 2.60	1.20*	88.4

Note: Equal variances not assumed *p > .05. Data missing for one participant.

Summary

In this chapter, information was presented on the results of this cross-sectional quantitative study. The results for the study yield no significant differences between rural and urban women for initiating breastfeeding, breastfeeding duration, and perceptions of breastfeeding. For research questions about the odds of initiating and sustaining breastfeeding in urban and rural. Women in urban areas did not have the same odds of initiating and sustaining breastfeeding as their urban counterparts. Nor did women in urban areas use their available and local community breastfeeding resources more often than rural women. When it comes to breastfeeding perception among women in urban and rural in this study there were no differences in breastfeeding perceptions among in urban and rural areas. In chapter 5, I will discuss the following: (a) interpretations of the findings, (b) limitation of the study, (c) implications for social change (d) recommendations for future studies (f) conclusion from the study.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The overall rates of breastfeeding initiation and duration rates remain lower than recommended. Many mothers are not exclusively breastfeeding for the first 6 months of life and then introducing solid foods (AAP, 2012). Only 17% of mothers in the United States are exclusively breastfeeding at 6 months and fewer than 5% of mothers are breastfeeding at 1 year (CDC, 2010; Jones et al., 2011). Several factors may dissuade mothers from breastfeeding and are significant in initiating and sustaining breastfeeding. Some of the challenges have been personal challenges, lack of breastfeeding support, breastfeeding perceptions, inadequate milk production, the concern of infant satisfaction, the need to return to work, breastfeeding in public, work support, and the confidence to breastfeed (CDC, 2011).

In my research, I asked mothers if they were currently breastfeeding and if they breastfeed within the past year. My research did not include the infant's age as a variable, or when exactly the mother began to breastfeed (e.g., at birth, weeks after birth, 2 months after, etc.). Similarly, education, age, and SES were variables in the sociodemographic characteristics of the literature view and the survey; however, they were not a main factor in research questions posed. These are all known factors that impact breastfeeding rates (Flacking et al., 2007; Heck et al., 2006; Nesbitt et al., 2012).

Interpretation of Findings

The purpose of this quantitative study was to examine the differences in breastfeeding perception, breastfeeding community resources, breastfeeding self-efficacy, and rates of initiation and duration among urban and rural women of Georgia using a

cross-sectional study design. I used a cross-sectional quantitative design. The data were collected from a convenience sample of 150 mothers from Georgia. Mothers self-reported infant feeding habits, breast feeding perception, and breastfeeding self-efficacy. Descriptive statistics were calculated on the controlled research variables. A *t* test was used to analyze the two groups (urban and rural) to compare breastfeeding perception scores on breastfeeding outcomes. The outcome variables were assessed by crude and adjusted odds ratio (OR) and 95% confidence intervals (CI) for rural and urban (independent variables).

In my analysis of breastfeeding perception and breastfeeding resources, I did not find any statistically significant differences by location. Rate of breastfeeding of both groups were similar 59/96= 61.46% (urban), 33/54= 61.11% (rural). Breastfeeding disparities can be seen by race, education, age, and income variables. In the most recent US National Immunization Survey, only 66.4% of Black mothers initiated breastfeeding in 2014, compared to 83% of White mothers and 82.4% of Hispanic mothers (CDC, 2016). For this study, 57.7 % of Black/African American mothers initiated breastfeeding while only 36.9% of White mothers initiated breastfeeding.

However, White mothers reported breastfeeding for 6 months or longer at a higher rate (62.2%) than any other racial/ethnic groups (Black /African American =50.0%, Asian= 50.0%, American Indian = 0.0%, Native Hawaiian = 0.0%), which is what previous research indicated. McKinney et al. (2018) stated that racial/ethnic gaps in breastfeeding remained significant at 6 months, with only 35.3% of Black mothers still breastfeeding, compared with 55.8% of White mothers and 51.4% of Hispanic mothers.

Black women consistently remaining at the bottom. In this study, I found comparable results in keeping with previous studies examining breastfeeding duration by race. As for this study, Black mothers participated more in this study in urban parts of Georgia 77.4% and 45.6% for White mothers. More White mothers (54.4%) were from rural parts of Georgia.

Research Question 1

Analysis of the first research question resulted in a nonsignificant finding for the associations between the independent variable location and the dependent variable self-reported breastfeeding initiation (currently breastfeeding or within the last year) and sustaining (the number of months breastfeed) among study participants. For this inquiry, no bivariate associations were found between the variables. Thus, I failed to reject the null hypothesis. I did show comparable results of prevalence of breastfeeding initiation at 66.2% in urban and 33.8% in rural; when compared to the nation prevalence among women in rural areas (56.6%) is lower than urban areas (43.4%) in the United States (Chapman & Perez-Escamilla, 2012). Most of the women in the urban locations breastfed 6 months or longer at 59.7%. In addition, 40.3% of women in rural areas breastfed for 6 months or longer. The length of time each group of women breastfed was similar: 0-2 months (67.7% urban, 32.3% rural), 2-4 months (61.9% urban, 38.1%), and 4-6 months (70.0% urban, 30.0% rural). These findings did support previous literature (Chapman & Perez-Escamilla, 2012) where rural women have significantly lower rates in breastfeeding initiation and duration when compared to urban; however, these findings were not statistically significant in my study.

Research Question 2

The independent variables (urban/rural) were examined with the dependent variable self-efficacy. The null hypothesis was that women in rural areas do not have higher levels of breastfeeding self-efficacy than women in urban areas. Self-efficacy is a strong predictor of both breastfeeding initiation and duration (Tuthill et al., 2015). I was unable to answer this research question due to not using the full scale. However, in my review of the individual responses, I was able to determine that many women indicated they were confident in their ability to breastfeed and the overall breastfeeding experience. Conversely, some of the women were not confident when it came to management of breastfeeding demands and wanting to continue to breastfeed.

Research Question 3

In examining local community breastfeeding resources between urban and rural areas, many of the participants reported using breastfeeding resources. Most women (59.3%) in the urban areas used available breastfeeding resources compared to (40.7%) of women in rural areas. I was unable to reject the null hypothesis that there was no difference in use of breastfeeding resources by location. A woman's ability to initiate and sustain breastfeeding is influenced by the community in which she lives (U.S Department of Health & Human Services, 2014). Breastfeeding resources provide mothers with necessary resources that can provide mothers with help with questions and/or difficulties with breastfeeding. Ideally, a mother will have access to trained experts who can assist her with breastfeeding and help her take appropriate action in building a support system. These resources ensure that all federal, state, and local laws recognize and support the

importance and practice of breastfeeding. The extent to which each of these entities supports or discourages breastfeeding can be crucial to a mother's success in breastfeeding. Majority of the women who participated in the study listed various community-based programs that helped with their breastfeeding journey, such as WIC, La Leche League, lactation consultants, and other breastfeeding groups.

The women who were recruited from the WIC facilities listed WIC as a local breastfeeding resource. The women who completed the survey online also listed WIC as a local breastfeeding resource; WIC facilities have made it their goal to create a conducive environment to encourage mothers to breastfeed. Federal regulations have specified that the state agencies take to ensure (a) a sustainable infrastructure for breastfeeding activities; (b) the prioritization of breastfeeding mothers and children in the WIC certification process; (c) activities to support education in nutrition for breastfeeding mothers, including peer support; and (d) allowances for using program funds to carry out activities that improve support for breastfeeding among WIC participants (Georgia Department of Health, 2016).

Research Question 4

The findings from this research question regarding breastfeeding perceptions compared breastfeeding perceptions of urban women to breastfeeding perceptions of rural women. Findings revealed no statistically significant differences between breastfeeding perceptions among the two groups. It was hypothesized that because breastfeeding perceptions play a vital role in breastfeeding initiation and duration that there would not be any differences in breastfeeding perceptions among women in urban and rural areas.

There are relevant studies that examine breastfeeding perceptions among women, but none primarily focused on distinctions between women in urban and rural areas. The questions that were asked to mothers were how they viewed breastfeeding, was it a natural part of life, should it be confined to one's home, etc. In this study I didn't find any differences in perceptions but in previous literature, oftentimes, mothers felt as if they had to give up too many of their lifestyle habits to breastfeed (Thomson et al., 2015). Some studies have shown that mothers felt that not breastfeeding was not living up to womanhood and motherhood (Taylor & Wallace, 2011; Knaak, 2010), perceptions of inadequate mothering (Thomson et al., 2015), and feelings of having to defend the decision to feed formula to support their identity as a good mother (Knaak, 2010; Ludlow et al., 2012). For this study, there were no differences by location but overall the mothers in this study had positive perceptions of breastfeeding.

Study Limitations

This research investigated associations with breastfeeding initiation and duration among women in urban and rural Georgia. The results of this study did not include each potential risk markers that have been identified in previous research. Such factors as (a) social support (b) return to work (c) support in workplace (d) health care involvement (e) self-efficacy skills, (f) factual information on breastfeeding knowledge and attitudes regarding breastfeeding. All of these factors are a valuable tool in encouraging breastfeeding. Social support return to work, workplace support, health care involvement and self-efficacy are all significant factors in breastfeeding initiation and duration. The findings in this study could have potentially differed if these other factors may have been

included especially between the two geographical regions. Previous studies have shown that these factors can be considerably helpful to breastfeeding and also may posed significant barriers for women for breastfeeding.

This study was not representative of all racial groups (e.g. Asian, Hispanic, and Pacific Islander) possibly because members of these racial groups are underrepresented in the communities were the selected WIC facilities are located and the recipients who used La Leche League and Georgia Breastfeeding Coalition. With vast breastfeeding disparities among racial/ethnic groups especially among American Indian/Alaska Native and Pacific Islander it would have been beneficial to see their odds of initiating and sustaining breastfeeding in urban and rural parts of Georgia. Research has shown that Hispanic and Asian women are the only racial groups currently meeting the Healthy People 2020 breastfeeding initiation goals of 81.9% whereas Native American and Whites are close to attaining (CDC, 2016). For 6 months or longer no ethnic groups are meeting the HP2020 goals (CDC, 2016).

Customarily, convenience sampling can have a prominent level of sampling error, in which was profound in this research. African-American women were highly represented in this study compared to their white counterparts. This might be explained by the high number of African American women attending programs -at the WIC facility locations used for study recruitment. Another limitation was the need to get more rural participants. La Leche League stated that most of women in their database were in urban areas. It is important to keep in mind that while my study included many mothers in

urban areas these findings may not be generalizable o other urban areas of Georgia and other rural populations.

The Georgia Breastfeeding Coalition assisted with recruiting rural participants in Georgia by sending emails to various breastfeeding organizations and peer counselors for breastfeeding. Originally, I thought that a larger proportion of the study participants would be recruited through the WIC facility, due to me being there physically for weeks, but most of the participants completed online surveys. The use of the WIC program is primarily for women who meet certain income requirements. Many of the women participating in the WIC program received Medicaid, Temporary Assistance to Needy Families (TANF), and the Supplemental Nutrition Assistance Program (SNAP) in which makes them adjunctively income eligible for WIC (Georgia Department of Public Health, 2013). With the data being collected at a WIC facility the study is limited to mothers whose demographics meet the eligibility criteria for WIC programs thus limiting the generalizability of the results.

The average income for WIC families were $12,479 (GADPH, 2013). In which may have limited mothers who income aligned with middle and upper-class incomes. Based on the data from this study, most of the participants income was $25,000 to $49,000 but this was not differential based on if the participants were recruited from WIC or La Leche League or the Georgia Breastfeeding Coalition. Majority of WIC participants are black (43%), 30% white, and 22% Hispanic and on average women who participate in WIC have 12 years of education (GADPH, 2013). For this study majority of the participants were black but the data could not show if the participants were from WIC

facilities who participated online or face to face in which all WIC participants had the right to do.

There was a lower rate of participation among rural participants. Many of the rural participants were recruited solely by La Leche League, the Georgia Breastfeeding Coalition, and participants forwarding the survey link to other breastfeeding mothers in rural parts of Georgia. Some of the challenges that could have affected recruitment for this study was that many of the La Leche League peer counselors are not as prevalent in rural as compared to many urban areas of Georgia. Rural mothers may not have had access to computers to access the survey. Some of the rural participants declined participation for the study. The small number of rural women impacted the findings because it wasn't reflective of breastfeeding outcomes for rural women and it limited the differences in breastfeeding initiation and duration between the two areas.

Limitation with the data collection might exit because women had to self-report infant feeding practices and some participants may not have disclose feeding methods accurately seeing that most mothers may have had to recall information from 2 to 8 months prior to the study. In this study, social desirability may have influenced responses to breastfeeding questions if there were mothers who were embarrassed or ashamed that they didn't continue to breastfeed or did not want to indicate that they were not knowledgeable about breastfeeding.

The study was for English speaking women and did not include the Spanish speaking populations in Georgia. Even though urban and rural areas do have Spanish speaking populations for this study they were not used based upon possible language

barriers. This may have been a factor in the small number of Hispanic participants in the study and could have possibly impacted the results of the study as in the state of Georgia, Hispanic women have a higher rate of breastfeeding at 77.5% when compared to non-Hispanic blacks (Georgia Department of Public Health, 2015).

Within the self-efficacy variable, I was unable to compare self-efficacy scores between the two groups, because I didn't use the whole scale within my survey. Research has shown the importance of breastfeeding self-efficacy and unfortunately, I was unable to provide any results. Lastly, urban and rural definitions can range and many of the respondents were not sure if they lived in urban or rural Georgia. Even though participants were asked to put what county they lived in some of those questions were skipped and I had to solely rely on whether they checked urban or rural. To minimize the confusion for future studies maybe a list of counties should be listed within the survey or urban and rural definitions can be provided.

Implications for Social Change

This study offered some significant insights for breastfeeding based on residential location in Georgia. Breastfeeding is the ideal nourishment for infant and young children, but in the state of Georgia breastfeeding initiation and duration rates still fall short of the Healthy People 2020 objective (Dumphy et al., 2016). Using the social ecological model can help health care professionals adopt a new way to discuss the issue of breastfeeding with mothers in urban and rural mothers. According to Dunn et al (2014) this approach allows health care professionals to provide a holistic approach in understanding the barriers that may influence a women's decision to initiate and sustain breastfeeding. This

framework presents the various levels from contextual to individuals factors and these factors help identify the most influential factors for infant feeding. In this study, the women's breastfeeding perceptions and self-efficacy responses reflected individual factors that can influence breastfeeding, while responses regarding the availability of breastfeeding related community resources reflects the contextual factors that impact breastfeeding and infant feeding decisions.

Using the SEM framework allowed me to examine how breastfeeding perceptions and community resources may or may not differ in geographical regions in Georgia. With this new perspective public health practitioners can create breastfeeding interventions that are geared toward breastfeeding resources in urban and rural areas and making sure that when a mother decides to breastfeed that they are aware of all breastfeeding resources in their community. Understanding this approach will help health practitioners understand that breastfeeding is a community effort and a shared responsibility from the doctor to both parents.

If practitioners can begin to understand breastfeeding perceptions, attitudes, confidence, and knowledge about breastfeeding it can potentially foster breastfeeding communities, especially in rural areas. The information contained in this study contributes to social change by identifying the need to develop breastfeeding interventions that will address breastfeeding perceptions, community resources, and breastfeeding self-efficacy in urban and rural areas. Understanding how societal norms about breastfeeding and understanding the determinates of breastfeeding outcomes can possibly result in more infants benefitting from the values of breast milk.

Recommendation for Action

Studies such as this are pivotal in understanding the dynamics of breastfeeding. As public health professional continues to address the Healthy People 2020 objective for breastfeeding, so much more needs to be done for the state of Georgia. Georgia ranks 48th in the United States for exclusive-breastfeeding rates through 3 months (27.2%) (Dumphy et al., 2016). In a pediatric office in north Georgia in a rural medically underserved community breastfeeding rates as of June 2014 were exceptionally lower than the state's averages, with only 23.7% exclusively breastfeeding at 2 months of age and only 14.3% at 4 months of age (Dumphy et al., 2016). Lower breastfeeding rates exist among rural, low-income families, and further research and interventions are necessary to increase breastfeeding duration within this population (Dumphy et al., 2016). According to Chopak-Foss, J & Yeboah, F (2017), factors associated with low breastfeeding rates in rural areas are: maternal-infant couplets, Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) participation, Medicaid participation, fewer maternal years of formal education, lack of breastfeeding support, being single, younger maternal age, employment at 2 months postpartum, low income, no breastfeeding education, or no previous breastfeeding experience.

Recommendations for action include enhancing prenatal education for mothers in urban and rural Georgia regarding breastfeeding. Two main goals for improvement in Georgia are to decrease infant mortality and optimum infant health (Chopak-Foss, J & Yeboah, F, 2017). Attaining these goals will increase the number of women who choose to breastfeed and can contribute to achieving these goals (Chopak-Foss, J & Yeboah, F,

2017). It is important to continue focusing on rural populations because they report the lowest rates of breastfeeding (Chopak-Foss, J & Yeboah, F, 2017). Professional and governmental sponsored breastfeeding resources should be allocated to address rural communities. Also, including measures of self-efficacy with regards to breastfeeding exclusivity and duration should be included to identify barriers to continuing to breastfeed (Chopak-Foss, J & Yeboah, F, 2017). Furthermore, continuing to address the needed areas for breastfeeding whether in urban or rural communities will help to establish the choice to breastfeed as the norm, rather than the exception.

In addition, I recommend that public health professionals (e.g. doctors, nurses, health educators, etc.) continue to educate themselves about the benefits of breastfeeding and continue to provide guidance and encouragement to mothers who decide to breastfeed. It is also the responsibility of health care professional to make women aware of the benefits of breastfeeding before and after birth. Information regarding the benefits of breastfeeding are being distributed but some women may feel that they are not learning breastfeeding skills, before birth and then are unable to take in the information with them after-birth. Moreover, reducing the barriers to breastfeed may be contingent upon policy makers and public health entities developing programs for low breastfeeding populations that would be in line with recommendations for infant feeding practices targeted by Healthy People 2020 (Chopak-Foss, J & Yeboah, F, 2017).

Recommendations for Further Study

There is a need for more studies that examine what factors that influence breastfeeding initiation and duration in urban and rural communities more in-depth by (a) perceptions, (b) self-efficacy, (c) informed education on breastfeeding, (d) work-place accommodations, (e) social support, and (f) community resources. Areas beyond the scope of this study that need evaluation include breastfeeding initiation pre- and post-partum. In this study, I was unable to get a true comparison of the findings for self-efficacy between the two locations. In the future, further studies should explore how breastfeeding self-efficacy impacts breastfeeding initiation and duration in urban and rural communities. In this way, a researcher would be able to capture and compare self-efficacy scores by residential location and see if self-efficacy plays a vital or minimal role in the decision to breastfeed.

Recruitment for this study was difficult at times. I was unable to provide gift cards, so I relied solely on participants wanting to contribute to this body of research. For future studies a partnership should be formed with breastfeeding entities in rural parts of Georgia. Also, it will be helpful to expand this study to more non-breastfeeding mothers and to calculate the rate of breastfeeding in urban and rural areas to determine factors that encourage breastfeeding practice. In addition, an increased focus on lactation support and breastfeeding initiation in urban and rural areas can increase both a woman's commitment to and the mother's success with breastfeeding (Bonuck et al. 2005; Olson et al. 2010; Haider et al. 2014). Studies have shown that lactation support, lactation consultants and peer or role models for counseling increased breastfeeding duration and

intensity (Kapinos, Bullinger, Gurley-Calvez, 2016). Understanding the complexities of rural communities will help public health professionals advocate for better breastfeeding practices in communities that need it the most.

Conclusion

In this study findings were presented from a cross-sectional quantitative method. This study examined associations between perceptions, breastfeeding resources, and breastfeeding initiation and duration among women in urban and rural locations in Georgia. Breast milk is uniquely suited for the optimal nutritional needs and is a live substance with unparalleled immunological and anti-inflammatory properties that protect against a host of illnesses and disease for mother and baby (Surgeon General Call to Action, 2011). Barriers regarding breastfeeding can affect mothers differently and these barriers can add to the complexity of breastfeeding. Understanding the barriers that women face when making an infant feeding decision can be a starting block in increasing breastfeeding initiation and duration.

Several studies have contributed to the literature regarding the benefits of breastfeeding and as a result have helped to address mother's potential concerns surrounding breastfeeding, but much more still needs to be done. My research showed that in this study, rural women do have the same odds of initiating and sustaining breastfeeding as their urban counterparts, which is different from what other studies have shown. Similarly, there were no differences in breastfeeding perceptions among women in urban and rural areas. Efforts to reach the rural communities have been successful for breastfeeding initiation and duration. The results of this research indicated no differences

in perceptions, initiation, and duration. This lack of findings is great for public health and that the significant efforts toward breastfeeding is working in the state of Georgia to help women reach the Healthy People 2020 goals.

This research should be encouraging to public health to continue the ongoing efforts to continue focusing on community breastfeeding networks, health professionals, and breastfeeding resources that are greatly important in empowering breastfeeding initiation and duration in urban and rural woman. Empowering mothers to breastfeed will increase self-efficacy and establish the concept of breastfeeding especially with mothers who have the highest risk of not breastfeeding; encouraging them that breastfeeding is the best feeding method. With this notion we are taking a positive step in promoting the health of children and mothers for generations to come.

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Appendix A: Iowa Infant Feeding Scale

THE IOWA INFANT FEEDING ATTITUDE SCALE

Table - 1

The Iowa Infant Feeding Attitude Scale

SD-strongly disagree, **D**-disagree, **N**-neutral, **A**-agree, **SA**-strongly agree	**SD D N A SA**
1. The benefits of breast milk last only as long as the baby is breast fed*	1 2 3 4 5
2. Formula feeding is more convenient than breastfeeding*	1 2 3 4 5
3. Breastfeeding increases mother infant bonding	1 2 3 4 5
4. Breast milk is lacking in iron*	1 2 3 4 5
5. Formula fed babies are more likely to be overfed than breastfed babies	1 2 3 4 5
6. Formula feeding is the better choice if the mother plans to go back to work*	1 2 3 4 5
7. Mothers who formula feed miss one of the great joys of motherhood	1 2 3 4 5
8. Women should not breastfeed in public places such as restaurants*	1 2 3 4 5
9. Breastfed babies are healthier than formula fed babies	1 2 3 4 5
10. Breastfed babies are more likely to be overfed than formula fed babies*	1 2 3 4 5
11. Fathers feel left out if a mother breast feeds*	1 2 3 4 5
12. Breast milk is the ideal food for babies	1 2 3 4 5
13. Breast milk is more easily digested than formula	1 2 3 4 5
14. Formula is as healthy for an infant as breast milk*	1 2 3 4 5
15. Breastfeeding is more convenient than formula	1 2 3 4 5
16. Breast milk is cheaper than formula	1 2 3 4 5
17. A mother who occasionally drinks alcohol should not breastfeed her baby*	1 2 3 4 5

*Variables reverse scored to calculate total infant feeding attitude so that a strongly breastfeeding attitude has a score of 5 for each question giving a maximum score of 85 and minimum of 17

Mean score 71.2 SD 8.4 Cronbach's a = 0.79, median 72, range 28-85, interquartile range 66-77

Appendix B: Breastfeeding Self-Efficacy Scale-Short Form

For each of the following statements, please choose the answer that best describes how confident you are with breastfeeding your new baby. Please mark your answer by circling the number that is closest to how you feel. There is no right or wrong answer.

1 = not at all confident

2 = not very confident

3 = sometimes confident

4 = confident

5 = very confident

		Not at all Confident				Very Confident
1	I can always determine that my baby is getting enough milk	1	2	3	4	5
2	I can always successfully cope with breastfeeding like I have with other challenging tasks	1	2	3	4	5
3	I can always breastfeed my baby without using formula as a supplement	1	2	3	4	5

4	I can always ensure that my baby is properly latched on for the whole feeding	1	2	3	4	5
5	I can always manage the breastfeeding situation to my satisfaction	1	2	3	4	5
6	I can always manage to breastfeed even if my baby is crying	1	2	3	4	5
7	I can always keep wanting to breastfeed	1	2	3	4	5
8	I can always comfortably breastfeed with my family members present	1	2	3	4	5
9	I can always be satisfied with my breastfeeding experience	1	2	3	4	5
10	I can always deal with the fact that breastfeeding can be time consuming	1	2	3	4	5
11	I can always finish feeding my baby on one breast before switching to the other breast	1	2	3	4	5
12	I can always continue to breastfeed my baby for every feeding	1	2	3	4	5

13	I can always manage to keep up with my baby's breastfeeding demands	1	2	3	4	5
14	I can always tell when my baby is finished breastfeeding	1	2	3	4	5

Appendix C: Breastfeeding Questionnaire

1. Welcome

You are invited to participate in a research study on Risk Markers Associated with Breastfeeding Initiation and Duration in Urban versus Rural Areas of Georgia, which is being conducted by Shaunta Rutherford, a doctoral student at Walden University. The survey is anonymous. No one, including the researcher, will be able to associate your responses with your identity. The researcher is inviting all women over the age 18 and older, have given birth within this year and has a young child under the age of one. This form is part of a process called "implied consent" to allow you to understand the purpose, benefits, risks, and provide you with information about the study before deciding to take part in the study. You will also receive a resource list for the study, following any issues associated with the study.

This survey should take about 30 minutes to complete. Participation is voluntary, and responses will be kept anonymous. If you have breastfed within the past year and/or continuing to breastfeed, or stopped breastfeeding, please consider answering this survey. Your participation in answering these questions about your own experiences is greatly appreciated! Please do not include name, age, or any other identifying information. This survey is strictly confidential and anonymous, and no contact information will be collected. THANK YOU SO MUCH FOR YOUR PARTICIPATION!

For any questions and/or comments, please contact me at shaunta.rutherford@waldenu.edu. If you have any questions regarding your rights as a research subject, contact the Institutional Review Board (IRB) at (612) 312-1210.Walden University's approval number for this study is 05-09-17-0118352 and it expires on May 8, 2018.

Please print or save a copy of this page for your records.

2. Breastfeeding

1. Are you currently breastfeeding?

- ◯ Yes
- ◯ No

2. Have you breastfed within the last year?

- ◯ Yes
- ◯ No

3. Demographics

* 3. What is your age?

- ◯ 18-20
- ◯ 21-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60 or older

* 4. What is the highest level of school you have completed or the highest degree you have received?

- ◯ Less than high school degree
- ◯ High school degree or equivalent (e.g., GED)
- ◯ Some college but no degree
- ◯ Trade/technical/vocational training
- ◯ Associate degree
- ◯ Bachelor degree
- ◯ Graduate or professional degree

* 5. What is your total household income?

- ◯ $0 to $9,999
- ◯ $10,000 to $24,999
- ◯ $25,000 to $49,999
- ◯ $50,000 to $74,999
- ◯ $75,000 to $99,999
- ◯ $100,000 to $124,999
- ◯ $125,000 to $149,999
- ◯ $150,000 to $174,999
- ◯ $175,000 to $199,999
- ◯ $200,000 and up
- ◯ Prefer not to answer

* 6. Which of the following categories best describes your employment status?

- ◯ Employed, working full-time
- ◯ Employed, working part-time
- ◯ Not employed, looking for work
- ◯ Not employed, NOT looking for work
- ◯ A homemaker
- ◯ A student
- ◯ Military
- ◯ Retired
- ◯ Disabled, not able to work

7. Please specify your ethnicity

- ◯ Hispanic or Latino
- ◯ Not Hispanic or Latino

* 8. Please indicate your race, or check all that apply

- ◯ White
- ◯ Black or African-American
- ◯ American Indian or Alaskan Native
- ◯ Asian
- ◯ Native Hawaiian or other Pacific Islander

9. Which of the following best describes your current relationship status?

- ◯ Married
- ◯ Widowed
- ◯ Divorced
- ◯ Separated
- ◯ In a domestic partnership or civil union
- ◯ Single, never married

10. Do you live in urban or rural Georgia?

- ◯ Urban Georgia
- ◯ Rural Georgia

11. Please list the county that you reside in.

4. Prenatal

These are a few questions about decisions you might have made before your baby was born.

12. When did you first decide how you would feed your baby? Was it

- ◯ Before you became pregnant
- ◯ During your pregnancy or
- ◯ After your baby was born
- ◯ Don't know
- ◯ Refused/No response

13. Who or what helped you with your decision about feeding your baby?

- ◯ Myself (no one)
- ◯ Partner
- ◯ Mother/mother-in-law
- ◯ Other relative
- ◯ Doctor
- ◯ Midwife
- ◯ Lactation consultant
- ◯ Friends/co-worker
- ◯ La Leche (community group)
- ◯ Prenatal/breastfeeding class
- ◯ Previous experience with other child
- ◯ Internet
- ◯ Other, specify

5.

14. If you have breastfed within the last year, how long did you breastfeed?

- ◯ 0-2 months
- ◯ 2-4 months
- ◯ 4-6 months
- ◯ 6 months or longer

15. Do/Did you use any breastfeeding resources that are located in your county? E.G. (Lactation Consultants, La Leche League, WIC, National Breastfeeding Hotline).

- ◯ Yes
- ◯ No

16. If yes, please list the breastfeeding resources used in your local county.

6. Breastfeeding Perceptions

The following questions are about breastfeeding perceptions please answer the questions to the best of your ability. Please indicate how much you agree or disagree by answering closely to the answer that corresponds to your opinion.

17. What do you think is the public's perception of breastfeeding?

- ◯ Positive
- ◯ Neutral
- ◯ Negative
- ◯ Other

18. Seeing a mother breastfeed her child brings about a happy feeling?

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

19. Breastfeeding is a natural part of life.

- ◯ Strong Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

20. Mothers should be able to breastfeed their child anywhere they see fit.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

21. Breastfeeding is highly stigmatized.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

22. Breastfeeding in public should be seen as indecent exposure.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

23. Breastfeeding a child should be confined to one's home only.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

24. Breast-feeding increases mother-infant bonding.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

25. Mothers who formula-feed miss one of the great joys of motherhood.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

7. Breastfeeding Perceptions continued

26. Breastfeeding is more convenient than formula.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

27. Breast milk is the ideal food for babies.

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

28. Breastfed babies are more likely to be overfed than formula-fed babies

- ◯ Strongly Disagree
- ◯ Disagree
- ◯ Neutral
- ◯ Agree
- ◯ Strongly Agree

8. Breastfeeding Confidence

The following questions are for women who have breastfeed in the last year. If you didn't breastfeed within the last year. Thank you for your participation. If you did breastfeed within the last year, please answer the following questions. For each of the following statements, please choose the answer that best describes how confident you are, are were when breastfeeding your new baby. Please indicate how confident or not confident by answering closely to the answer that corresponds to your opinion. There is no right or wrong answer.

29. I can always ensure that my baby is properly latched on for the whole feeding.

- ◯ Not at all Confident
- ◯ Not very Confident
- ◯ Sometimes Confident
- ◯ Confident
- ◯ Very Confident

30. I can always be satisfied with my breastfeeding experience

- ◯ Not at all Confident
- ◯ Not Very Confident
- ◯ Sometimes Confident
- ◯ Confident
- ◯ Very Confident

31. I can always comfortably breastfeed with my family members present

- ◯ Not at all Confident
- ◯ Not very Confident
- ◯ Sometimes Confident
- ◯ Confident
- ◯ Very Confident

32. I can always keep wanting to breastfeed

- ◯ Not at all Confident
- ◯ Not very Confident
- ◯ Sometimes Confident
- ◯ Confident
- ◯ Very Confident

33. I can always manage to breastfeed even if my baby is crying

- ◯ Not at all Confident
- ◯ Not very Confident
- ◯ Sometimes Confident
- ◯ Confident
- ◯ Very Confident

34. I can always manage the breastfeeding situation to my satisfaction

- ◯ Not at all Confident
- ◯ Not very Confident
- ◯ Sometimes Confident
- ◯ Confident
- ◯ Very Confident

9. Breastfeeding Confidence continued

35. I can always deal with the fact that breastfeeding can be time consuming

- Not at all Confident
- Not very Confident
- Sometimes Confident
- Confident
- Very Confident

36. I can always tell when my baby is finished breastfeeding

- Not at all Confident
- Not very Confident
- Sometimes Confident
- Confident
- Very Confident

37. I can always manage to keep up with my baby's breastfeeding demands

- Not at all Confident
- Not very Confident
- Sometimes Confident
- Confident
- Very Confident

38. I can always continue to breastfeed my baby for every feeding

- Not at all Confident
- Not very Confident
- Sometimes Confident
- Confident
- Very Confident

39. I can always finish feeding my baby on one breast before switching to the other breast

- ◯ Not at all Confident
- ◯ Not very Confident
- ◯ Sometimes Confident
- ◯ Confident
- ◯ Very Confident

10. Your contribution to this research has been greatly appreciated! Thanks so much!

11. Debriefing Form

This form describes the background and purpose of this investigation in more detail.

The purpose of this study is assess whether or not risk markers and/or barriers are similar or different based on residential location and its effects on initiation and continuation by racial and ethnic background. In hopes that understanding and identifying these risk markers will serve as predictors of breastfeeding among women who live in urban and rural Georgia that could lead to strategies that will help Georgian women reach the CDC Healthy People 2020 objective and improve health outcomes for mothers and infants.

If you have any additional questions about the study or if you would like to receive a copy of the results from this study when they become available, please contact Shaunta Rutherford at shaunta.rutherford@waldenu.edu.

If you have questions about your rights as a research participant or concerns or complaints about the research, you may contact the Walden University Institutional Review Board (IRB), which is concerned with the protection of volunteers in research projects. You may reach the IRB by calling Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is 612-312-1210, or you may email IRB at irb@waldenu.edu. You may keep a copy of this debriefing for your records.
If you know of any other mothers who may fit the criteria for this survey please forward them the survey link!

Thanks again for your participation!