Walden University
ScholarWorks

Walden Dissertations and Doctoral Studies

Walden Dissertations and Doctoral Studies Collection

2021

Systematic Review of the Barriers to Breastfeeding for Non-Hispanic Black Women

Ketty N. Floyd
Walden University

Follow this and additional works at: https://scholarworks.waldenu.edu/dissertations

 Part of the Nursing Commons

This Dissertation is brought to you for free and open access by the Walden Dissertations and Doctoral Studies Collection at ScholarWorks. It has been accepted for inclusion in Walden Dissertations and Doctoral Studies by an authorized administrator of ScholarWorks. For more information, please contact ScholarWorks@waldenu.edu.

Walden University

College of Nursing

This is to certify that the doctoral study by

Ketty N. Floyd

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

Review Committee
Dr. Sue Bell, Committee Chairperson, Nursing Faculty
Dr. Eileen Fowles, Committee Member, Nursing Faculty
Dr. Mirella Brooks, University Reviewer, Nursing Faculty

Chief Academic Officer and Provost
Sue Subocz, Ph.D.

Walden University
2021

Abstract

Systematic Review of the Barriers to Breastfeeding for Non-Hispanic Black Women

by

Ketty N. Floyd

MSN, Downstate University, 2002

BS, Lehman College, 1996

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2021

Abstract

Breastmilk provides the optimal food for newborns and contributes to improved lifelong health. A community hospital in the Eastern United States serving non-Hispanic Black (NHB) women has a breastfeeding exclusivity rate of only 8%, which is low compared to the state's exclusivity rate of 40%. A systematic review of the literature was conducted to identify the breastfeeding barriers for NHB mothers and to identify strategies to address them. Guided by Fishbein and Yzer's integrative model and the SQUIRE 2.0 knowledge reporting framework, 30 articles were appraised using Melnyk and Fineout-Overholt's hierarchy of research and the Caldwell, Henshaw, and Taylor qualitative research appraisal method. The six barriers to breastfeeding among NHB mothers identified in both qualitative (n = 17) and quantitative studies (n = 13) were (a) ineffective support, (b) cultural practices that do not include breastfeeding, (c) the need to return to school or work, (d) maternal health, (e) formula companies' advertisements, and (f) the lack of NHB women in the field of lactation support. The Center for Disease Control and Prevention (CDC), the World Health Organization (WHO), and the Surgeon General of the United States all provided evidence-based recommendations to improve breastfeeding. The results of this systematic review can contribute to positive social change by guiding the development of a quality improvement plan to improve breastfeeding rates among NHB women served by the community hospital, which could lead to better health outcomes for newborns.

Systematic Review of the Barriers to Breastfeeding for Non-Hispanic Black Women

by

Ketty N. Floyd

MSN, Downstate University, 2002

BS, Lehman College, 1996

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

May 2021

Dedication

I dedicate this paper to all the nursing students who seek higher knowledge.

Acknowledgments

My journey towards completion of the DNP program started with my spiritual leader who told me that I should continue to learn. I acknowledge the faculty of Walden University and Dr. Sue Bell for their education and guidance. My colleagues, including Miriam Smith, Dr. Muniratu AlHassan, and Dawn Africa, have continually pushed me to keep persevering, and especially to send my application to the DNP program. My preceptor, Dr. Pio Paunon, guided me gently along the way and was always available. I thank Dr. Cassandra Dobson for continuing to ask me year after year to return to school to complete my doctorate.

Table of Contents

List of Tables

List of Figures

Section 1: Nature of the Project

Healthy People (HP2020) sets national breastfeeding rates and duration goals at a maximum of 1 year and exclusive breastfeeding for a minimum of 6 months (Office of Disease Prevention and Health Promotion [ODPHP], 2018). HP2020 proposed that breastfeeding increase: for infants breastfed exclusively (only receiving breastmilk) at 3 months should rise to 46.2%; at 6 months, the percentage of infants receiving some breastfeeding should rise to 60.6%; and at 1 year the percentage of infants receiving some breastfeeding should rise to 34.1% (ODPHP, 2018). Likewise, the American Academy of Pediatrics (AAP, 2012) recommended breastfeeding for a period of 1 year; the World Health Organization (WHO) recommended breastfeeding for 2 years or more (WHO, 2020).

Non-Hispanic Black (NHB) women have one of the lowest breastfeeding rates in the United States, according the ODPHP (2018) and the New York State Department of Health (NYSDOH; 2017, 2019). Breastfeeding has been linked to improved health status in areas with rates of breastfeeding consistent with HP2020 goals. Breastmilk is the optimal food for newborns, as declared by WHO (WHO, 2002) and HP2020 (ODPHP, 2018). WHO (2002) recommended that government and nongovernment agencies promote breastfeeding, especially in areas with fewer resources and a greater number of poor health indicators. In 2017 the breastfeeding rate reported for the state was 87.4% for any breastfeeding and 23% for the exclusivity rate at 3 months (Centers for Disease Control and Prevention [CDC], 2017). The breastfeeding rates at the target hospital were 89.1% for any breastfeeding rate, and 12.5% for an exclusivity rate (CDC, 2017). Health

organizations in the area have the following goal: to increase the breastfeeding rates of the populations they serve. This DNP capstone project is a systematic review of the literature; it sought to identify the breastfeeding barriers for NHB mothers and to identify strategies to address them. The results will be used to guide a quality improvement plan to improve the breastfeeding outcomes of NHB women.

Problem Statement

The clinical practice problem addressed in this study was the low breastfeeding rates among NHB mothers in a neighborhood served by a community hospital. The breastfeeding rates for the major ethnic groups in the United States are: 61% of Non-Hispanic Whites (NHW), 52.5% of Hispanics, and 41.4% of NHB (County Health Rankings and Roadmaps, 2018). Understanding the barriers to breastfeeding through a systematic review can help structure an effective action plan to support mothers in increasing their breastfeeding rates.

Breastfeeding has been shown to protect newborns from a number of health issues such as asthma, middle ear infection, diabetes, gastrointestinal issues, and cancer of the while blood cells in children (Ip et al., 2007); Hansstein (2016) showed an association between breastfeeding and a decreased obesity rate. The city in which the target community hospital was located has the highest NHB population and the lowest health ranking (62nd place out of 62 places) (County Health Rankings and Roadmaps, 2018). Kaiser Family Foundation (2019) wrote that NHBs have the worse health determinants of all racial groups. This systematic review of the breastfeeding barriers among the NHB women will constitute the foundation for a quality improvement project to increase

breastfeeding rates and, consequently, may (a) decrease the rate of poor health for breastfed children and (b) decrease a gap in practice that results in health inequity. This project fulfills the professional mandate of an advanced practice nurse: to improve population health (American Association of Colleges of Nursing [AACN], 2006).

Purpose Statement

The purpose of this project was to identify barriers that impede continuous breastfeeding in NHB women. This information about barriers will be used to help meet the goals of any breastfeeding and exclusive breastfeeding among NHB women, who have the lowest breastfeeding initiation and continuation rates among the groups served by the target hospital.

The purpose of the systematic review of the available literature was to identify factors that impede successful breastfeeding and to identify effective strategies to support breastfeeding and thus close the gap between actual breastfeeding rates and the HP2020 breastfeeding goals (exclusive breastfeeding for 3 months at 46.2%, and breastfeeding for 6 months at 60.6% (ODPHP, 2018). The target community hospital in has a very low 3-month breastfeeding exclusivity rate of 8.5% (New York State, 2014). Identification of the gap between recommended breastfeeding duration and actual breastfeeding in this hospital population helps to focus practice efforts to attain the desired state (Sleezer et al., 2014).

This project could support government agencies and local institutions in their drive to increase breastfeeding rates among NHB women. It could identify the barriers to breastfeeding; it could support mothers to breastfeed longer; it could help a greater

number of NHB mothers avoid feeding their newborns a breastmilk substitute for the first 6 months of the child's life.

Nature of the Doctoral Project

The approach of the project was a systematic review of articles from several electronic databases about the breastfeeding barriers of NHB mothers. The goals of a systematic review are to select, evaluate, and synthesize the literature to answer an inquiry (Bettany-Saltikov & McSherry, 2016). Appropriate appraisal of the literature is vital for launching quality improvement projects to provide evidence-based care (Melnyk & Fineout-Overholt, 2019). The ultimate goal was to collect data that would help in conducting a breastfeeding quality improvement project for NHB women in the project's site. This review provided information about the barriers that NHB mothers encounter during breastfeeding and the approaches that may be taken to improve breastfeeding rates.

Significance

The target community for this project comprises parents, children, family members, health institutions, and governmental agencies—all of which are stakeholders in this breastfeeding improvement initiative. This project could result in the improved health of newborns, mothers, and the community as a whole. If breastfeeding is improved, and if the breastfed children and their mothers are healthier, then the local government would also benefit through a healthier community and the decrease expenditure in caring for sick children. According to the ODPHP (2018), healthy newborns are extremely important for the future well-being of a nation. And

breastfeeding is one of the tools that can improve the long-term health of newborns, even into adulthood. The benefits of breastfeeding include reduced risk of otitis media, gastroenteritis, severe lower respiratory tract infections, atopic dermatitis, asthma, obesity, type I and II diabetes mellitus, leukemia in childhood, sudden infant death syndrome (SIDS), and necrotizing enterocolitis (Ip et al., 2007). Hansstein (2016) linked breastfeeding to prevention of childhood obesity. To reduce the risk of food allergies in children Fewtrell et al. (2017) supported breastfeeding exclusively for a minimum of 4 months. UNICEF stated that a breastfeeding promotion investment of $5.7 billion would result in 520,000 saved lives and $300 billion in economic gains within 10 years (UNICEF, 2017). Therefore, breastfeeding is promoted to benefit infant, child, and maternal health, and to generate improved population health through economic savings. The ultimate outcome of this study would be to facilitate a breastfeeding culture for this community, which would remove NHB mothers from the lowest breastfeeding group status for this part of the country.

Summary

The NHB in the United States have the lowest breastfeeding rates. Breastmilk is accepted as the best food for the newborns. HP2020, WHO and the CDC have all declared that breastfeeding is associated with healthier children, the minimization of diseases. The protective health factors of breastfeeding could result in approximately $5.7 billion. The purpose of this systematic review was to identify breastfeeding barriers and effective interventions to improve breastfeeding rates among the NHB mothers who hold the lowest breastfeeding rates in the state. An increase in breastfeeding rates could lessen

the rates of a number of newborn and childhood illnesses including otitis media, gastroenteritis, lower respiratory tract infections, atopic dermatitis, asthma, obesity, type I and II diabetes mellitus, leukemia in childhood, sudden infant death syndrome (SIDS), and necrotizing enterocolitis. Section 2 will provide an overview of the project background and context, the integrative model that supports the project, the relevance of the work to nursing, and the role of the DNP student in presenting the findings to the stakeholders of healthcare institutions, as well as local governmental agencies.

Section 2: Background and Context

The problem addressed by this project was the low breastfeeding rates within a community hospital whose population consists of primarily NHB women. A systematic literature review of the breastfeeding barriers for NHB women was the initial step in a needs assessment for a quality improvement project aimed at increasing the rates of breastfeeding. This section of the project paper supported the project by describing the theoretical underpinnings, the relevance to the practice of nursing, the national and local context of the problem, and the roles of the DNP student in carrying out the project goals.

Concepts, Models, and Theories

The theoretical foundation for this project was the integrative model (IM), proposed by Fishbein and Yzer (2003). Elements from three health behavior theories were combined to create the IM: (a) the health belief model (HBM; Rosenstock, 1974), (b) the social cognitive theory (SCT; Bandura, 2004), and (c) the theory of reasoned action (TRA; Fishbein et al., 1992; Fishbein & Yzer, 2003).

The HBM operates on four types of perception: perceived threat, benefits, barriers, which culminate in an action. It was created by public health professionals in the 1950s (Rosentock, 1974). HBM explains why individuals engage in or refrain from certain behaviors (Rosenstock, 1974). These concepts were incorporated into the SCT developed by Alfred Bandura in 1977. The principal notion of the SCT is that knowledge of one's health risks, the benefits of health care behavior, as well as perceived self-efficacy support (a) personal control over one's health, (b) outcome expectations, and (c) the perceived facilitators and challenges of a new health goal (Bandura, 2004). Self-

efficacy level is the level of confidence a person has while engaging in an undertaking (Bandura, 1971). A person with a high level of self-efficacy tends to have a strong intention and the skills needed to accomplish the set goals (Bandura, 2004). The third theory, the TRA, states that a person's behavior is the consequence of the strength of their decision to complete or follow through with a behavior (Fishbein, 2008). Therefore, if one does not want to perform a behavior, one cannot be persuaded to consistently perform it, or to persevere through difficulties to achieve it.

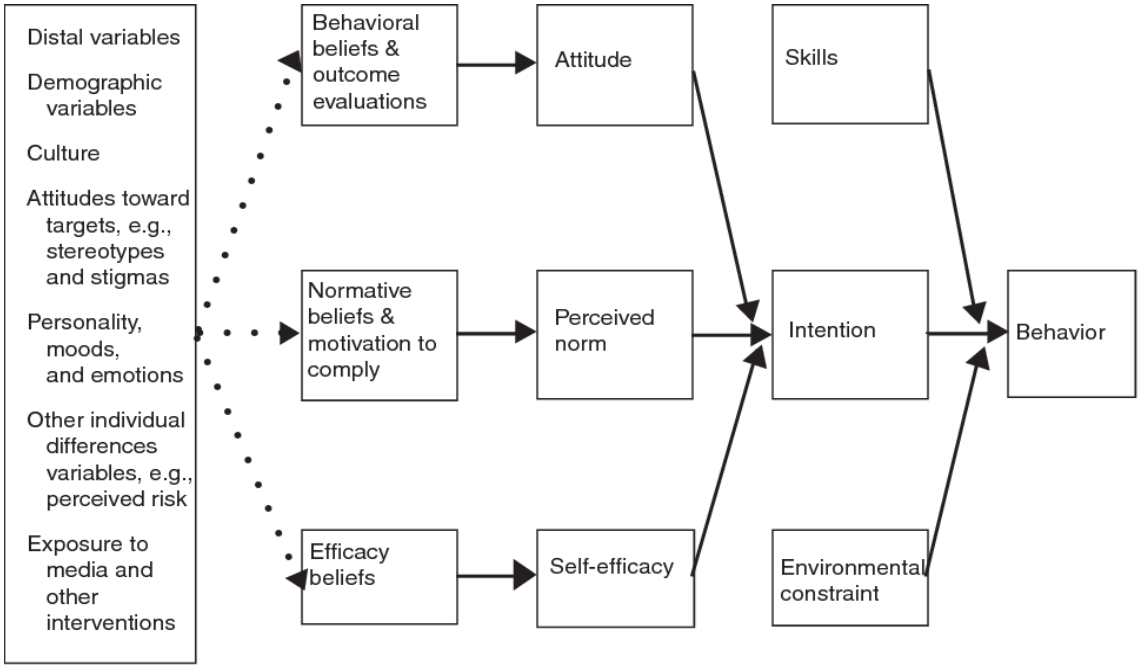
Fishbein and Yzer (2003) conceptualized that an individual is more likely to perform an action if she has firmly decided to proceed with the action, has the knowledge to complete the task, and if the environment does not have major obstacles that will affect her (Fishbein et al., 1992). The theories combined under the umbrella of IM provide a perspective on behavioral decision making via a public health and socio-psychological lens (Fishbein et al., 1992). The IM addresses the many factors affecting breastfeeding among NHB, for example, culture, attitudes towards breastfeeding, individual variables such as economic and educational level, exposure to breastfeeding, use of the media by the formula companies as they promote breastmilk substitutes, and the positive depiction of breastfeeding by a few governmental agencies. The themes of the IM are depicted as barriers to breastfeeding in terms of breastfeeding culture and attitudes.

Breastfeeding role models within the community may lead to normative beliefs and play a role in the desire of mothers to abide by the norms in their environment that prescribe a breastfeeding culture or proscribe a non-breastfeeding culture. Many researchers identified the three major themes in their research: culture, beliefs, and

breastfeeding environment (Asiodu et al. 2016; Barbosa et al. 2017; Comess, 2017; Deubel et al. 2019; DeVane-Johnson et al. 2017; Fayibi et al. 2016). Piwoz and Huffman (2015) summarized the interventions of the infant formula companies to gain the confidence of the public about their breastmilk substitute (BMS): extensive marketing expenditures (assessed in the millions of dollars) and free samples to hospitals with birthing units. The figure below summarizes the IM theory.

Figure 1

Integrative Model of Behavior Prediction



Adapted from "Using Theory to Design Effective Health Behavior Interventions," by M. Fishbein, & M. C. Yzer, 2003, *Communication Theory, 13*(2), p. 167. (http://www.dokeefe.net/FishbeinYzer03CT.pdf)

Relevance to Nursing Practice

Several authors have conducted studies about breastfeeding and formula feeding. Breastfeeding was the only method of infant feeding for millennia. Since the 1940s, infant formula companies have promoted their product to new mothers, indicating that formula feeding is as good as or better than breastmilk (Connoly, 2005; Wargo, 2016). The formula companies identified many factors, which contributed to a satisfactory breastfeeding experience and factors deterring mothers from breastfeeding. The literature revealed that the barriers to breastfeeding fall into several categories: institutional, maternal, and environmental. There are also certain themes, which drive a longer breastfeeding period. Below is a summary of these findings. Table 1 provides a summary of the themes that each study identified. An X indicates the presence of the theme in the study.

Table 1

Summary of Breastfeeding Barriers

	Perceived low milk supply	Return to work	Family/friend support	No role model	Low breastfeeding confidence	Low income
Dennis (2002)		X	X			
DeVane et al. (2017)	X		X	X		
Flower et al. (2008)	X	X	X			
Jefferson (2015)				X		
Heidari et al. (2016)	X	X	X			
Henshaw et al. (2015	X				X	
Meedya et al. (2010)			X		X	
Olang et al. (2012)	X	X				
Patnote (et al. (2016)		X	X			
Powell et al. (2016)	X	X	X	X		
Wolfberg et al. (2004)			X			

	Meager breastfeeding education	Inefficient support from hospital/clinic	Conflicting information	Physician's advice	Difficult latch	Crying baby
Dennis (2002)						
DeVane et al. (2017)	X	X				
Flower et al. (2008)		X				
Jefferson (2015)						
Heidari et al. (2016)	X	X	X			
Henshaw et al. (2015					X	
Meedya et al. (2010)	X	X				
Olang et al. (2012)		X				
Patnote (et al. (2016)	X	X				X
Powell et al. (2016)	X	X	X			
Wolfberg et al. (2004)						

HP2020 defined national breastfeeding rates and duration goals to a maximum of 1 year and exclusive breastfeeding for a minimum of 6 months (ODPHP, 2018). HP2020 breastfeeding's goal is to increase breastfeeding exclusivity at 3 months to 46.2%, some breastfeeding at 6 months to 60.6%, and some breastfeeding at 1 year to 34.1% (ODPHP, 2018). The AAP reported that breastfeeding for a period of 1 year is recommended (AAP, 2012). WHO recommended breastfeeding for 2 years or longer (WHO, 2020). The state has not reached the HP2020 breastfeeding goals. The rates of breastfed newborns in the state exclusively at 3 months, then any breastfeeding at 6 months and at 1 year are: 45.2%, 25.8%, and 24.9% respectively (CDC, 2018).

The practicum site is experiencing a stagnant exclusive breastfeeding rate of less than 10% at discharge. Known barriers to exclusively breastfeeding from 2.4 months to 6 months within the project hospital mothers include provider's advice, maternal perception of insufficient breastmilk, family's recommendation to supplement, baby discontent, using a pacifier, and previous formula intake (Olang et al., 2012). Another set of barriers is a lack of significant support, positive community attitude toward breastfeeding, health education, and health care workers who promote breastfeeding (Al-Sagarat et al., 2017).

The literature reported that NHBs have one of the lowest breastfeeding rates nationally (Kaiser Family foundation, 2019; ODPHP, 2018). One institution tried to address this health care issue by implementing a culturally driven approach, including maternal support, and a sustained relationship between the patient and the health care provider during the perinatal period (Miller et al., 2018). The role of the nurse in

promoting and sustaining breastfeeding is clear. According to AACN (2006), advanced practice nurses must participate in scholarly activities to increase and use research to drive nursing practice. Nurses must also work collaboratively with patients to achieve best patient outcomes (AACN, 2006). The AACN continues to state that nurses must work to improve the health of the population (AACN, 2006). This project covers several of the AACN essentials that underlie the Doctor of a Nursing Practice Program. These essentials are II, VI, VII, and I.

The literature review presented many factors that might cause lower breastfeeding rates, along with protective breastfeeding processes that might improve breastfeeding initiation and continuation. The community of NHBs would benefit significantly if they breastfeed. Engaging in activities that are not well planned would not address the community's need and might waste time and funds (Kettner et al., 2017). A systematic literature review would provide the required information to support effective quality improvement.

Local Background and Context

The clinical site of the project was a community hospital with 231 beds, which highlighted the low breastfeeding rates of NHB mothers. The hospital provides inpatient services to patients in need of psychiatric, medical, surgical, orthopedic, maternal-child, level III neonatal intensive care, telemetry, rehabilitation medicine, and adult intensive care. The population served by the hospital is composed of Hispanics (53%), NHB (47%), and others. The number of women who deliver their newborns at the site is 2,200 (68% vaginal, 32% cesarean section); 97% of newborns received some breastmilk, 8.5%

are exclusively breastfed (New York State Department of Health [NYSDOH], 2014). The breastfeeding rates of NHB women at the hospital site of this project continue to be the lowest in the state (CDC, 2017). The 4-week breastfeeding rates for NHW were 87.1%, for Hispanics they were 79.6%, and for NHBs they were 73.6% (NYSDOH, 2017).

The hospital serves an area with a diverse population, a third are foreign-born, 56.2% are Hispanic, and 43.7% are NHB (United States Census Bureau, 2017). Most families of the area are composed of single mothers who are the head of the household and have three to four children (United States Census Bureau, 2017). The NHBs hold the highest rate of deliveries prior to 39 weeks of gestation in New York (March of Dimes, 2016) and the highest rate of health care concerns (United States Census Bureau, 2017). The area has the worse health outcome score 62^{ND} out of 62 places according to County Health Rankings and Roadmaps (2018). The health score includes length of life, health behaviors, clinical care, social and economic factors, and physical environment,

Olshansky (2017) presents the social determinants of health as socioeconomic status, environment, food insecurity and food safety, education, employment, social networks, homelessness, and racism. Thirty percent of the general population in the area is obese (County Health Rankings & Roadmaps, 2018) and has the highest number of obese pregnant women and the second highest number of children under the age of two who are overweight (NYSDOH, 2017). Women who are overweight tend to stop breastfeeding early (Kronborg et al., 2013), which contributes to the lower rate of breastfeeding in this part of the state. At the project site, the breastfeeding initiation rate increased significantly from 70% to 90% within 8 years. The exclusivity rate increased to

an average of 20% and has remained constant. State statistics are 74.7% for NHW, 9.3% NHB, 11.2% Hispanics; the ethnicity with the best health scorecard is the NHW, followed by Hispanics, and then by NHB (NYSDOH, 2019). The breastfeeding statistics for the state are: 87.5% of mothers initiate breastfeeding and 26.5% of babies are exclusively breastfed (CDC, 2018). The state ranks 18th out of 51 for obese children, 40th out of 51 for overall child health, and first out of 51 for Medicaid spending (CDC, 2018).

The local government supports breastfeeding improvement projects. In 2009, New York State passed the Breastfeeding Mothers' Bill of Rights, which covered the right of all pregnant women to receive breastfeeding education/resources in the prenatal period, when they are admitted for the delivery of their child, and upon discharge (NYSDOH, 2009). The law also covered the rights of women to breastfeed in public, to breastfeed at work during paid or unpaid time, and to pump their milk or breastfeed in a safe area for a maximum of 3 years (NYSDOH, 2009). The HP2020 breastfeeding goals are 81.9% for any breastfeeding, 60.6% at 6 months, and 34.1% at 1 year (ODPHP, 2018). The HP2020 aims for exclusive breastfeeding are 46.2% at 3 months and 25.5% at 6 months (ODPHP, 2018).

Table 2

Percentage of Breastfeeding Rates by Ethnicity

Race/ethnicity	% Breastfeeding initiation	% Breastfeeding 4 weeks or more	% Breastfeeding 8 weeks or more
NHB	89.1	73.6	67.6
NHW	91.1	87.1	80.6
Hispanic	86.5	79.6	69.6

Note. From "County Percentage of WIC infants breastfeeding at least 6 months"

Role of the DNP Student

This project will help the stakeholders to understand the barriers to continued breastfeeding in the NHB population of the north east location in New York City. My area of specialization is women's health. My first childbirth experience was filled with misleading breastfeeding information, including the fear of complying with the nurses in order to prevent the staff from discharging me without my newborn. The staff informed me that breastfeeding would cause my baby to starve. I continued to breastfeed but told the nurses that I fed my baby formula. I was a young immigrant with limited medical knowledge. I breastfed my son based on an instinct that it was better than the formula, but not equipped with the information needed to advocate for the need to breastfeed to counteract the nurses' constant request to formula feed so that my child could gain weight. Their concerns were valid, he was a full-term baby who was small for his gestational age, he needed to gain weight. Breastfeeding him was even more crucial. As a result of my personal experiences with breastfeeding, I made one of my professional goals to empower mothers to choose breastmilk as the best food for their newborns. My project goals are to partner with women to contribute positively to their health and the health of their newborns. My project tasks were to conduct the literature review, analysis, synthesize the results, and present the outcome of the systematic review and recommendations for quality improvement to the health care stakeholders. As recommended by McDonagh et al. (2013), I used criteria to lessen bias, such as inclusion and exclusion criteria, the identification of the population, an outcome that is patient-centered, study selection method, and a setting identification. The theoretical framework

was the IM. The results of the systematic review will guide interventions designed to increase the breastfeeding rates of the NHB mothers of the northeast area of the United Sta. This project fulfills the AACN's Essential VII, which stipulates that the nurse is to participate in national health improvement (AACN, 2006) and will add to the body of literature to strengthen the evidence that guides breastfeeding practices.

Summary

The target hospital for this project was designated baby-friendly; unfortunately, the rate of exclusive breastfeeding has not increased when compared to other baby-friendly institutions. The statistics of breastfeeding mothers are well established, and it is known that the city has the lowest rate of breastfeeding at 3 and 6 months within the state of New York. The systematic review will identify breastfeeding barriers that will guide the development of interventions designed to improve breastfeeding outcomes by transferring best practices from other community hospitals to the project site. The discovery of barriers to increasing breastfeeding statistics was achieved through a review of the current literature. The theoretical framework was the IM by Fishbein and Yzer (2003). Section 3 will report the process used for reviewing the breastfeeding literature, the data collection tools used in the systematic review, and the analysis and synthesis process. The conclusions and best practices identified from the literature review will lead to quality improvement interventions that may sustain a successful breastfeeding project for the population of NHB mothers served by health care institutions.

Section 3: Collection and Analysis of Evidence

The breastfeeding rates among racial groups in America are unequal, but NHB women have the lowest rates (Dennis, 2002). In this study, a systematic review was conducted to identify the best practices to overcome the barriers to breastfeeding that are reported by NHBs women in the United States. This project was based in an area, whose population is mainly minorities, such as NHBs and Hispanics. The city has one of the highest rates of poor health in the country (County Health Rankings and Roadmaps, 2018). The identification of the best practices for addressing the barriers to breastfeeding will increase the probability of success for a breastfeeding quality improvement project within the NHB community, which will be planned after the conclusion of this project. The long-term consequence of breastfeeding is the health improvement of many NHB infants. A breastfeeding population has the opportunity to contribute positively to society.

The following subjects are covered in Section 3: the problem, the project questions, the literature review process, and the analysis and synthesis of the systematic literature review information.

Practice-Focused Questions

The health concern addressed in this project was that NHB mothers have the lowest rates of breastfeeding (Dennis 2002; CDC, 2013). Its purpose was to identify the breastfeeding barriers for NHB mothers at the target hospital and to identify effective, evidence-based strategies to guide the development of a plan to improve breastfeeding rates among NHB mothers in the United States. Two practice-focused questions were addressed by this project:

1. What are the breastfeeding barriers for NHB mothers?
2. What are the supportive interventions that nurses can use to help NHB mothers initiate and maintain breastfeeding rates in line with the HP2020 objectives?

Three terms that identify the feeding methods of a newborn are used throughout this project paper: *exclusive breastfeeding*, *breastfeeding and formula feeding*, and *formula feeding only*. The ethnic populations are categorized as NHB, NHW, and Hispanics. The operational definitions are:

- *Breastfeeding and formula feeding*: the feeding of an infant by both formula and breastmilk (WHO, 1991).
- *Exclusive breastfeeding*: the feeding of a newborn with only breast milk, with the exception of vitamins (WHO, 1991).
- *Formula feeding only*: a newborn who receives only formula as their food intake (WHO, 1991).
- *Non-Hispanic Black (NHB)*: individuals who identify themselves as only Black or African American (United States Census Bureau, 2017).
- *Non-Hispanic White (NHW)*: White alone, not Hispanic (United States Census Bureau, 2017).
- *Hispanics*: populations from Latin America; they may be of any race (United States Census Bureau, 2017).

Sources of Evidence

The sources of evidence in this project were articles from the peer-reviewed literature. The following databases were searched: CINAHL Plus, MEDLINE, Cochrane,

the Joanna Briggs Institute, and the Oxford Centre for Evidence-Based Medicine (EBM). The following search terms were used: *breastfeeding*, *Non-Hispanic Blacks*, *social cognitive theory*, *health scores*, *obesity and breastfeeding*, *breastfeeding exclusively*, *breastfeeding and bottle-feeding*, *formula feeding exclusively*, *self-efficacy*, *statistics of the United States,* and *statistics of the Bronx*. These terms also were combined with the Boolean term "AND." I included literature published between 2000 and 2020. Articles older than 5 years were included due to the importance of the findings on breastfeeding and the theoretical framework.

Table 3

Database List for the Period 1/2000 to 12/2019

Databases	Hits retrieved from the search	Articles discarded because of irrelevant titles	Articles duplicated from another database	Articles for review by title and abstract	Systematic reviews from selected articles
CINAHL Plus	47	9	0	39	1
Medline Cochrane systematic Reviews	18	16	0	1	1
Joanna Briggs Institute	258	256	0	1	0
Oxford	0	0	0	0	0
Centre for EBM Trip	23	22	0	1	0

Procedures

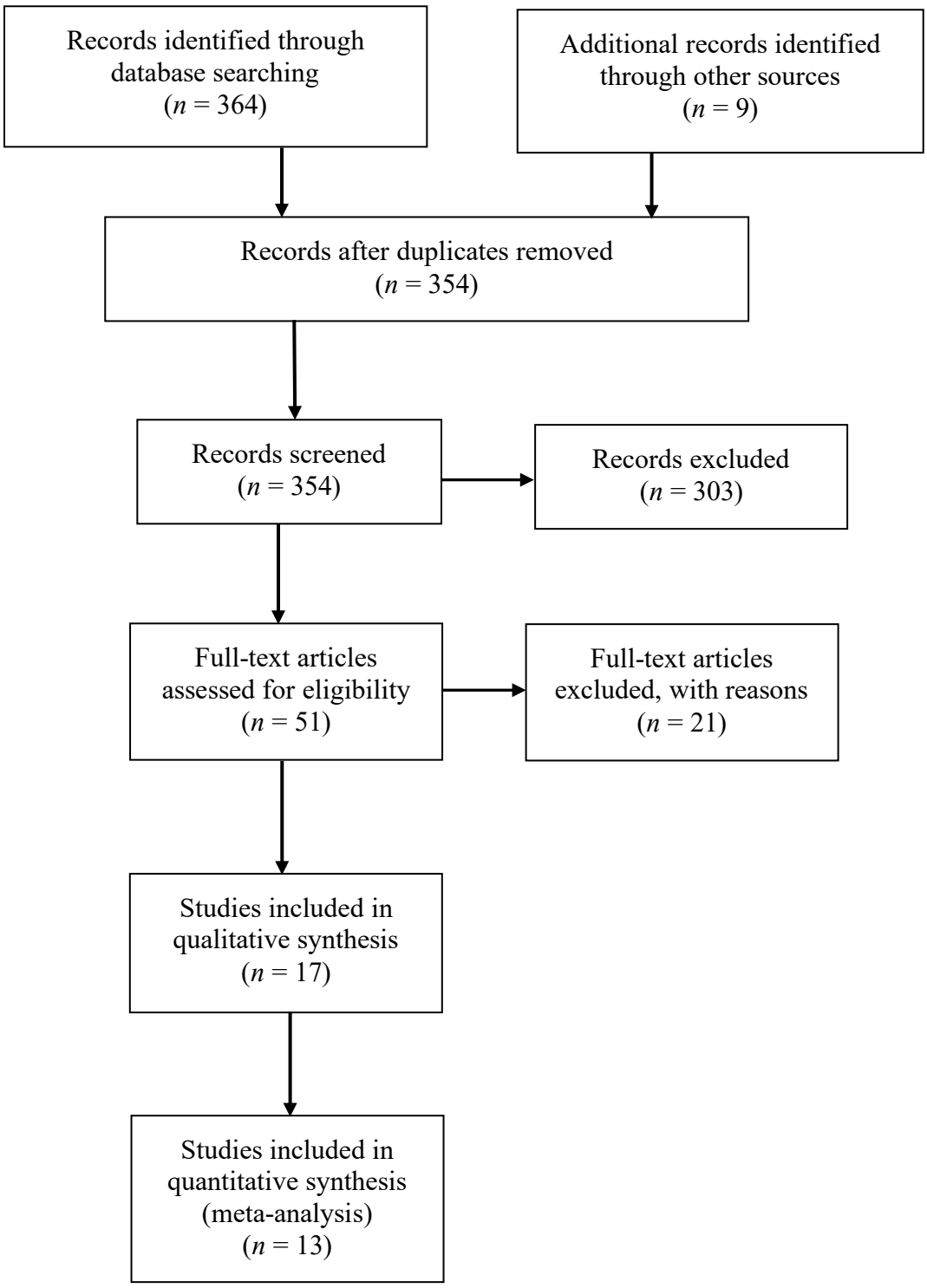
Bettany-Saltikov and McSherry (2016) proposed three stages for the review of the studies: the selection of the articles based on the inclusion rules, the assessment of their worth, and the plan for data extraction. The first step of the systematic review was to

construct the research question and identify the population, exposure, and outcomes (PEO) (Bettany-Saltikov & McSherry, 2016). A list of key words was developed that was be linked with Boolean terms to be used to search several databases. The purpose of this tactic was to achieve a list of the most relevant articles. An effective search needs inclusion and exclusion rules. The first search provided a number of primary sources. The inclusion criteria included articles about women who identified themselves as NHB who breastfed, or who desired to breastfeed, articles about and the articles were published in English, studies about formula companies' practices. The exclusion criteria were non-childbearing women, non-U.S. population, mothers or neonate with a medical contraindication to breastfeed, mothers who were institutionalized while breastfeeding. The articles were appraised, and the information from the studies was compiled in tables according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) and the Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0).

There were two pathways to identify studies for the project. The first pathway was sources retrieved from the literature review addressing the factors associated with low rates of breastfeeding. The second pathway was articles that were pulled from a manual search of the reference lists of the articles selected through the first pathway. The data from the literature review were organized according to the different types of breastfeeding barriers. The PRISMA flowsheet was used to present the final number of chosen articles.

Table 4

The PRISMA Flow Diagram



The systematic review presented used the SQUIRE 2.0 (Ogrinc et al., 2016). This instrument helped to organize and review the data from the articles using a methodical approach. SQUIRE 2.0 was developed to facilitate sharing of new information to enhance the provision of care to the patients (Ogrinc et al., 2016). The appraisal of the selected studies was done according to the Melnyk and Fineout-Overholt (2019) hierarchy of evidence. Kettner et al. (2017) wrote that prior to planning the interventions for a project, there must be an assessment of the many factors that will influence the current state of the social and health problem. One must be aware of the perceived needs of the population for which the project is being designed (Sleezer et al., 2014). The systematic literature review provided the evidence-based information for the breastfeeding improvement plan to decrease the barriers to breastfeeding for NHB mothers and close the breastfeeding rates gap with other groups and the NHB mothers.

Analysis and Synthesis

The appraisal of the qualitative articles was guided by the Caldwell et al. (2011) qualitative research analysis guidelines. The synthesis of the qualitative studies was done by defining the themes and subthemes (Bettany-Saltikov & McSherry, 2019). The synthesis was presented in the form of a narrative as advised by Bettany-Saltikov and McSherry (2019). The quantitative studies were appraised through the AGREE II instrument. AGREE II tool was created to evaluate the rigor and methods which were used to present a health driven directive (Browsers et al., 2017). These tools are all available in the public domain and, therefore, I did not require permission for use from the author(s). The elimination of many articles was due to the preplanned inclusion and

exclusion criteria. The systematic review of the literature culminated in a table of the selected articles, which was used for the synthesis of the literature.

A list of recommendations from the literature was written. Along with the information retrieved from the literature, governmental agencies had put forth recommendations to support breastfeeding women; these recommendations, which were retrieved from the CDC Guide to Strategies to Support Breastfeeding Mothers and Babies, the Surgeon General's Call to Action to Support Breastfeeding 2011, and the WHO Ten Steps to Successful Breastfeeding, were included in the evidence synthesis.

This project provided protection for human subjects, as it was a systematic appraisal of articles that conducted research about the barriers to breastfeeding among NHB mothers. According to Weingarten, Paul, and Leibovici (2004), the use of a research article must be assessed through three areas or standpoints: goals, duties, and rights. The timing, the location, and the societal culture must be considered to maintain ethical values during the study (Weingarten et al., 2004). The articles must also report on the method they put in place to protect the rights and privacy of the subjects. During the systematic review, the included articles were reviewed for potential biases, activities to minimize them, efforts placed to refrain from harming the subjects, and financial disclosures. The review was about NHB women, but due to the nature of the project, personal information about study participants was not collected or revealed nor did the systematic review used unsubstantiated or bias terms to portray the population. All studies must ensure that the subjects will be protected, as such the Walden University

Institutional Review Board (IRB) approval (approval number 02-25-20-0668949) was obtained prior to beginning of the project as a second layer of subjects' protection.

Summary

A systematic review is the first step in a quality improvement project. Sources of evidence for this systematic review included CINAHL Plus, MEDLINE, Cochrane, the Joanna Briggs Institute, and the Oxford Centre for Evidence-Based Medicine (EBM). The PRISMA flow diagram provided a visual presentation of the articles' selection process. Of the 354 unduplicated articles identified in the literature, 17 qualitative studies and 13 quantitative studies met criteria and were included in the review. The articles were presented using SQUIRE 2.0 and the analysis plan was organized using Caldwell et al. (2011), Melnyk and Fineout-Overholt (2019), and the AGREE II tools.

Section 4 will contain the results and recommendations from the systematic review of breastfeeding barriers and enhancing factors for the NHB mothers, along with the strengths and limitations of the study.

Section 4: Findings and Recommendations

The goal for this project was to contribute to the improvement of breastfeeding in the NHB community in the United States. Although NHB women report that breastfeeding is the best option for babies, this knowledge does not translate into a higher rate of breastfeeding NHB women; in fact, they have the lowest rate of breastfeeding in the state and nationally. The purpose of the systematic literature review was to identify the breastfeeding barriers faced by NHB women. Strategies that have been used successfully in other community hospitals could be operationalized into a quality improvement plan to address the barriers to breastfeeding in NHB women at the target hospital.

Articles for this systematic review, published between 2000 and 2019, were retrieved from searches of these databases: CINAHL Plus, Medline, Cochrane, Joanna Briggs Institute EBP, and the Oxford Centre for Evidence-Based Medicine, Turning Research into Practice (TRIP), and through a manual search of articles listed in the retrieved articles' reference lists. 354 articles were initially identified, and of these articles 303 were discarded. 51 were retained for a closer review. The final number of articles included in the systematic literature review was 30: 17 qualitative and 13 quantitative. The result of this review will guide evidence-based recommendations to support NHB women to initiate breastfeeding and to continue to breastfeed for at least 1 year. The review was guided by the Caldwell et al. (2011), Melnyk and Fineout-Overholt (2019), and AGREE II frameworks for critiquing and appraising health research.

Findings and Implications

Findings from the Review of Qualitative Articles

The literature supported the benefits of breastfeeding initiation and continuation. Ip et al. (2007) and Bartick (2013) conducted two meta-analyses, revealing that breastfeeding is associated with a reduction in a number of childhood illnesses. Bartick (2013) summarized the benefits of maternal breastfeeding: decreased risk for breast cancer, ovarian cancer, hypertension, cardiac illness, type II diabetes, and metabolic syndrome. Poverty, WIC recipient status, and employment impact breastfeeding negatively (Flower et al., 2008). The Kaiser Family Foundation (2019) wrote that NHB are among the groups with the worst health disparities in the United States. Kim et al. (2016) identified promoters of breastfeeding, such as social support; accurate breastfeeding information; community resources; an environment in which breastfeeding women are visible; and breastfeeding education during the antepartum and the postpartum periods. The positive reinforcement factors were the opposite of the previously stated points, including receiving care at a baby-friendly institution, and participating in breastfeeding support groups (Dunn et al. 2015). A study by Jefferson (2015) linked breastfeeding rates with the number of times mothers observe others breastfeeding in her community. Heidari et al. (2016) recognized the benefits of a baby-friendly hospital, but they wrote that ineffective support during pregnancy, labor, and birth creates obstacles to an improved breastfeeding rate. The literature supported the idea that the outcomes of breastfeeding are improved health for the mother-baby dyad and decreased health care costs to society.

Several studies were conducted to seek barriers to prolonged breastfeeding. Sheehan et al. (2001) conducted a study in Ontario, Canada, investigating the reasons women stop breastfeeding. These reasons were rated by percentage: 36% replied not enough milk or milk inconsistency, 17.2% had difficulty with breastfeeding, 11% stopped breastfeeding due to sore nipples, 7.6% reported the baby did not want to breastfeed, and 14.5% responded with "other" reasons, 10% of the mothers cited fatigue, the need to return to work, latching difficulties, and inconvenience (Sheehan et al., 2001). Obese women stopped breastfeeding at a higher rate, stating that their milk was insufficient, mentioning breastfeeding hardships and jaundiced infants (Kair & Colaizy, 2015). Kim et al. (2016) conducted a study about breastfeeding and NHB mothers who articulated that lower socio-economic status, social values, and return to work or education contributed to a lesser rate of breastfeeding. A Jordanian article by Al-Sagarat et al. (2016) reported similar barriers to continued breastfeeding. In order of importance from highest to lowest they were return to work, concern about the loss of the shape of their breasts post breastfeeding, lack of support from their family and friends, pain during breastfeeding, inadequate breastmilk supply, and lack of spousal support (Al-Sagarat et al., 2016). NHB women who were breastfed and saw others breastfeed had a higher likelihood of breastfeeding (Jefferson, 2015). The correlation between the breastfeeding barriers in the literature review will help devise the interventions that may increase the breastfeeding rates among NHB mothers.

Table 5

Summary of Findings as per SQUIRE 2.0

Authors, Date	Problem	Aim/ Setting/Sample	Design	Result	Limitation	Conclusion
Asiodu et al. (2016)	Low rate of non-Hispanic Blacks (NHB) for exclusive breast-feeding	Describe the perception and experiences of NHB and their support system and infant feeding, northern California, 22 subjects	Ethno-graphic longitudinal	50% intended to breastfeed exclusively. Few did and felt guilt and shame for not achieving their breast-feeding goals. Stress, life events, minimal public breastfeeding role models in the media or at large, minimal previous experience	Small sample Only first-time breastfeeding mothers included	NHB want to breastfeed, although they have a low rate of breastfeeding
Brownell et al. (2017)	Breastfeeding barriers	Define NHB breastfeeding barriers, Florida, 25 adolescents	Qualitative	Barriers: embarrassment, perception of low breastmilk, pain, lack of interest, family choice, inconvenience, leaking milk, return to school/work	Small sample, survey questions may be leading	Education may help to decrease barriers to breastfeeding
Comess (2017)	Low breastfeeding rate among NHB	Identify barriers NHB experience in breast-feeding 16 studies	Systematic literature review	Barriers to breastfeeding: ineffective breastfeeding education pre/post-natal, decreased support, liberal distribution of free infant formula, short maternity period, return to work or school, a formula feeding culture, perception of insufficient breastmilk, slavery and the association of wet-nurse with breastfeeding, women who were not breastfed as a child	Articles were older than 5 years during search	Education, support, culture for review

Authors, Date	Problem	Aim/ Setting/Sample	Design	Result	Limitation	Conclusion
DeVane-Johnson et al. (2017)	Low breastfeeding rate in the NHB	Assess contributing factors and present a cultural intervention NHB within the review, 47 articles	Literature review	Themes identified were social signs of non-breastfeeding women, NHB perception of breastmilk, and insufficient breastfeeding education, cultural and historical aspect of slavery, lower socio-economic status, low support, lack of role models, fear of nipple pain, inability to pump milk and/or store at work	Search terms, publication bias	Interventions to increase breastfeeding must be holistic must consider the specific historical perspective of NHB their socio-economic challenges
Fayibi et al. (2016)	Low breastfeeding rate for non-Hispanic Black women (NHB)	To seek understanding between the breastfeeding rate of US born NHB and foreign born NHB in central Ohio, 20 subjects	Qualitative	NHB women. stopped breastfeeding before the mothers who were foreign born due to: insufficient milk perception, nipple pain, return to work, unaware of the best time to stop breastfeeding, maternal sickness, physical shape, contraceptive pills intake	Small sample, semi-structured interviews	Education, role models, misperception, maternal support during breastfeeding affected breastfeeding duration
Furman et al. (2013)	Low breast-feeding rates for NHB	Community driven breast-feeding intervention Cleveland, Ohio, 602 subjects	Qualitative	Increased breastfeeding: completion of educational modules, and post-partum visits.	The research intervention was adapted to match the day-to-day activities	Breast-feeding education, postpartum visits may be helpful

Authors, Date	Problem	Aim/ Setting/Sample	Design	Result	Limitation	Conclusion
Johnson et al (2015)	Breastfeeding challenges and workplace	To study barriers to breastfeeding at work; Detroit; eight pregnant, 21 breastfeeding mothers, 9 lactation professionals	Qualitative, focus group	Culturally driven interventions are lacking, non- supportive work environment	Small sample, one segment surveyed, participants self-report	Culturally- sensitive solutions needed, NHB lactation specialists are minimal or lacking
Kaufman et al. (2009)	Breastfeeding ambivalence among low income	To illustrate breastfeeding perceptions and practices among 28 low income NHB and Puerto Rican women in Brooklyn, New York	Ethnographic study	Decision to breastfeed is affected by society's norms, environment, support, hospital/clinic	sample, only applies to one group, retrospective study, low number of women exclusively breastfed	Competing messages about breastfeeding must be counteracted, antepartum education is needed, home visits by LC, peer counselors
Kim et al. (2017)	Breastfeeding barriers	To isolate influencing factors on breastfeeding, central Illinois, 15 NHB who breastfed for the first time	Qualitative, semi-structured interview	Social support is key	Only breastfed mothers were interviewed, interviewers favored breastfeeding as bias, interviewers' skills were unequal	Social support is instrumental in the fight to increase breastfeeding for NHB
Lutenbacher et al. (2017)	Breast-feeding challenges	To discover breast-feeding challenges among 39 NHB women No setting	Qualitative	Culturally- appropriate intervention and support are lacking, social media influenced decision	Results can-not be generalized because of the small sample	Individualized approach for breastfeeding is necessary, role models are needed in the NHB community
Oniwon et al. (2016)	Low breastfeeding rates	To investigate breast-feeding barriers among 25 NHB adolescents in Washington D.C.	Qualitative	Embarrassment, pain, insufficient milk perception, inconvenience, return to work or school, family choice	Small group	Improved breastfeeding education and support may influence the breastfeeding rates

Authors, Date	Problem	Aim/ Setting/Sample	Design	Result	Limitation	Conclusion
Robinson et al. (2019)	Low breastfeeding support in the African American (A.A.) community	To explore the experiences of 22 A.A. mothers whose breastfeeding support was delivered on Facebook	Prospective, cross-sectional qualitative study	A.A. women need a space that reflects their community and peer-to-peer support from a A.A. background in their community. Visual narrative of breastfeeding among A.A. women is a needed empowerment activity, which in turn will reinforce breastfeeding decisions	Small sample, average age was 30, biased breastfeeding, online interview	Positive contribution to discussion
Robinson et al. (2019)	Effect of racism and bias on breastfeeding	To review articles about breastfeeding and racism, bias, and discrimination 5 studies	Literature review	The studies revealed that racism, bias, and discrimination may affect breastfeeding	Small sample of articles	Articles reviewed points the presence of racism and bias in health care re: breastfeeding
Schildler-Ruwisch et al. (2019)	Low breast-feeding rates among Non-Hispanic Black (NHB)	To increase understanding of the factors impacting breast-feeding initiation and duration in 24 low income NHB women in Washington, D.C.	Semi-structured interview	Social support affected the participants' breastfeeding intentions, goals, and confidence	Small, homogenous sample	Social support can strengthen or deter a woman's decision to breastfeed.

Summary of the Qualitative Review

A total of 17 qualitative articles were reviewed. Four were systematic literature reviews, and 13 were qualitative reviews. The three qualitative reviews were Comess (2017), DeVane-Johnson et al. ((2017), and Robinson et al. (2019). The studies were conducted in the United States (Detroit, North California, central Illinois, Brooklyn, New York, Ohio, Virginia, Washington D.C., and on Facebook). The literature reviews examined barriers to breastfeeding for NHB women. Barriers to breastfeeding in NHB women were identified as lack of support, hospital distribution of free formula, non-breastfeeding culture, absence of newborn paternal involvement and breastfeeding support, continuous experiences with bias, racism, and discrimination, formula companies' significant financial effort to manipulate the public's trust in the quality of their products.

The limitations of the articles were small samples of articles, quality of the articles was not presented. The 15 qualitative papers presented similar conclusions about the barriers that hindered breastfeeding: lack of support from the mother's family, friends, community, health care workers, governmental agencies (Antsey, 2017; Asiodu et al., 2016; Barbosa et al., 2017; Deubel et al., 2019; Furman et al. 2013; Johnson, 2015; Kim, 2017, Schindler-Ruwisch, 2019); work and school environment without breastfeeding support (Johnson et al. 2015; Oniwon et al. 2016); American nativity of NHB women (Fayibi et al., 2016); low self-efficacy or level of belief in one's ability to breastfeed (Barbosa, 2017; Kaufman et al. 2009; Reno, 2018); and maternal and infant illness (Fayibi et al., 2016). Online social platforms can be a supportive tool (Robinson et al.

2019) The limitations of the studies included small samples and different definitions for breastfeeding. Breastfeeding may vary in intensity or duration, or in the number of times a breastfeeding episode was replaced with formula. All the studies relied on self-report, which may be inflated. Biases were rarely addressed or counteracted. The strength of this body of work, is the similarity in the results.

Qualitative research seeks to explain a situation or add knowledge. Giacomini and Cook (2000) reported that qualitative research does not typically provide answers but rather generates narrative accounts, explanations, typologies of phenomena, conceptual frameworks, and the like. This research studies the rationale of an occurrence. Caldwell et al., (2011) established a set of criteria to evaluate health research: What is the message? Can it be trusted? and Can it be generalized? The authors report that a reliable qualitative study must have a sample and a sampling method that meets the inclusion criteria, a plan for data collection that will minimize bias, and a process to validate the data analysis information such as triangulation and/or use of a grounded theory and a thematic framework, see Appendix B I used the tool by Caldwell et al. (2011) to analyze the qualitative studies. The tool consists of 18 questions; each question is assigned a value of zero to two, for a total score between 0 and 36. Caldwell did not identify the value that would invalidate a study. Bettany-Saltikov and McSherry (2016) advised the reviewer to establish a number to guide selection or rejection of an article or include all articles on the subject. The critiquing of articles would include the assessment of the quality of the articles in Table 6.

Table 6

Caldwell Framework Qualitative Assessment Tool

	Title reflects the content	Authors are credible	Background and literature review	Abstract summarizes key components?	Literature review comprehensive and up to date	Aim clearly stated	Ethical issues identified and addressed?
Asiodu et al. (2016)	2	2	2	2	2	2	2
Barbosa et al. (2017)	2	2	2	2	2	2	2
Brownell et al. (2017)	2	2	2	1	2	2	2
Comess (2017)	2	2	2	2	2	2	2
Deubel et al. (2019)	2	2	2	2	2	2	2
DeVane-Johnson et al. (2017)	2	2	2	2	2	2	2
Fayibi et al. (2016)	2	1	1	0	1	2	0
Furman et al. (2013)	2	2	2	2	2	2	2
Johnson et al. (2015)	2	2	2	2	2	2	2
Johnson et al. (2015)	2	2	2	2	2	2	2
Kaufman et al. (2009)	2	2	2	2	2	2	2
Kim et al. (2017)	2	2	2	2	2	2	2
Lutenbacher et al. (2017)	2	2	2	0	2	2	1
Oniwon et al. (2016)	2	2	2	2	2	2	2
Reeves & Woods-Giscombe (2015)	2	2	2	2	2	2	2
Robinson et al. (2019)	2	2	2	2	2	2	2
Robinson et al. (2019)	2	2	2	2	2	2	2
Schildler-Ruwisch et al. (2019)	2	2	2	2	2	2	2

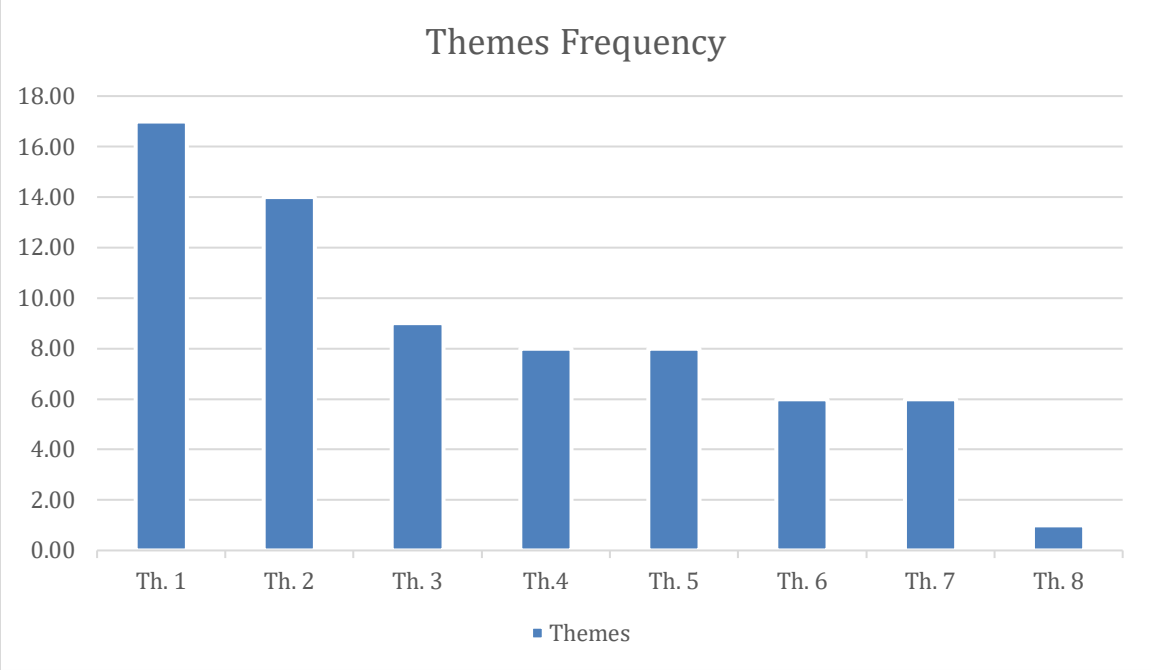
	Methods	Data Analysis	Results	Discussion	Conclusions and Implications	Numerical assessment (maximum 36)
Asiodu et al. (2016)	9	1	3	2	2	29
Barbosa et al. (2017)	12	2	3	2	2	34
Brownell et al. (2017)	7	1	3	1	1	23
Comess (2017)	9	2	3	2	2	31
Deubel et al. (2019)	14	2	4	2	2	35
DeVane-Johnson et al. (2017)	11	2	3	2	2	33
Fayibi et al. (2016)	6	2	4	1	2	20
Furman et al. (2013)	11	1	3	2	2	32
Johnson et al. (2015)	10	1	4	2	2	30
Johnson et al. (2015)	11	2	3	2	2	29
Kaufman et al. (2009)	9	2	4	2	2	34
Kim et al. (2017)	12	2	3	2	2	23
Lutenbacher et al. (2017)	10	1	2	1	1	31
Oniwon et al. (2016)	11	2	3	2	2	33
Reno (2018)	11	2	1	1	1	30
Reeves & Woods-Giscombe (2015)	9	0	2	2	2	31
Robinson et al. (2019)	12	0	2	2	2	31
Robinson et al. (2019)	12	2	2	2	2	35
Schildler-Ruwisch et al. (2019)	12	2	2	2	2	34

The quality of the studies was reviewed using Caldwell et al. (2011). This evaluation included 18 items that were applied to each of the articles. Each item can earn 0 to two points with a maximum of 36 points. Caldwell et al. (2011) did not provide a

range that would label a study on a quality gradient. Caldwell et al. (2011) left this decision to the assessors. The numerical assessments of the articles ranged from 20 to 35. Transferability of studies was a rare finding, due to the sampling size and a homogenous population. Ethical issues were identified sparingly by stating that they were IRB approved. Six studies did not outline their data collection methods, resulting in low score (Brownell et al., 2002; Comess, 2017; DeVane-Johnson et al., 2017; Fayibi et al., 2016; Lutenbacher et al., 2017). Two studies (Brownell et al., 2002; Fayibi et al., 2016) with scores of 20 and 25 had many missing elements according to Caldwell et al. (2011). These findings remain questionable, although the findings from the two studies are similar to other studies. Nine studies either wrote that they had a philosophical underpinning without linking it to their study or did not have one. The scholarly articles analyzing breastfeeding in the NHBs demanded additional research while valuable information was obtained from this effort. The qualitative literature review provided many common themes, and some themes were identified in almost every study. See Figure 2 for the list and frequency of themes.

Figure 2

Qualitative Studies' Frequency of Breastfeeding Barrier Themes in the Qualitative Studies



Theme 1: Ineffective Support Was the Most Frequently Identified Theme in the Qualitative Studies.

A lack of support from all the spheres of the new mother's life affects her breastfeeding results. Support is needed from her immediate family, the father of the newborn, her community, and her workplace. The health care institution fails to support her if breastfeeding education is not initiated during the pregnancy and it must continue until the postpartum period. In one article, the support was linked to the courtesy of the health care workers. Governmental support relates to laws that protect and facilitate mothers to breastfeed through paid maternity leave for the length of time as promoted by the professional agencies. (Asiodu et al., 2016; Barbosa et al., 2017; Brownell et al., 2002; Comess, 2017; Deubel et al., 2019; Fayibi et al., 2016; Furman et al., 2013; Johnson et

al., 2015; Johnson et al., 2015; Kim et al., 2017, Lutenbacher et al., 2017, Oniwon et al., 2016; Reno, 2018, Reeves et al., 2015; Robinson et al., 2019, Schindler-Ruwisch, 2019),

Theme 2: Cultural Practices Was the Second Most Frequently Identified Theme and Reported in 14 Studies.

African American mothers who are born in the U.S. have a lower breastfeeding rate as compared to the non-U.S. born mothers. The proposition is that breastfeeding is prevalent in the women of African ancestry off the continental U.S., therefore, this group may be more successful at breastfeeding. The NHB whose ancestors were slaves may associate breastfeeding with slavery as women often breastfed their masters' children. (Asiodu et al., 2016; Barbosa et al., 2017; Brownell et al., 2002; Comess, 2017; Deubel et al., 2019; Fayibi et al., 2016; Furman et al., 2013; Johnson et al., 2015; Kim et al., 2017, Lutenbacher et al., 2017; Oniwon et al., 2016; Reno, 2018, Reeves et al., 2015; Robinson et al., 2019, Schindler-Ruwisch, 2019).

Theme 3: Return to Work or School Was the Third Most Frequently Identified Theme as a Barrier to Breastfeeding in Nine Studies.

The majority of NHB have the lowest income. They must return to work to maintain their livelihood. NYS passed a breastfeeding law. Unfortunately, a mother must use unpaid time to breastfeed or pump. The full-time working mother or student may be pressed for time as she will have competing responsibilities and may choose to formula feed to have additional time to engage in caretaking activities of the family. Many of these mothers are heads of a single parent household. (Asiodu et al., 2016; Barbosa et al., 2017; Brownell et

al., 2002; Deubel et al., 2019; Fayibi et al., 2016; Johnson et al., 2015; Kim et al., 2017, Oniwon et al., 2016; Schindler-Ruwisch, 2019).

Theme 4: Pain or Discomfort Was the Fourth Most Frequently Identified Theme and Reported in Eight Studies.

Breastfeeding skills enable the mother to detect a proper latch. A poor latch results in much pain. Pain may also be caused due to tongue tie, if assessed, the lactation professional will guide the mothers in techniques to decrease the pain while breastfeeding. Adequate health care support may eliminate this theme. (Brownell et al., 2002; Comess, 2017; Johnson et al., 2015; Kaufman et al., 2009; Lutenbacher et al., 2017; Oniwon et al., 2016; Reno, 2018, Reeves et al., 2015; Schindler-Ruwisch, 2019).

Theme 5: Bias, Racism, and Discrimination Was the Fifth Most Frequently Identified Theme and Reported in Eight Studies.

The lingering effect of slavery is present in every fabric of America. This history contributed to the systematic racism that the US is struggling with. Robinson et al. (2019) wrote that the descendants of the slaves experience historical trauma, which affect their breastfeeding outcomes. The indirect product of racism is decreased resources allocation to the poor localities. A few authors identified structural negative factors that impact breastfeeding in the NHBs. Bias, racism play a role in the decreased rate of breastfeeding due to structural organization of the United States. Some misperception from healthcare workers extrapolate that NHB women may not want to breastfeed, which may result in decreased breastfeeding help from the professionals and reduced referral to lactation services (Asiodu et al., 2016; Barbosa et al., 2017; Brownell et al., 2002; Comess, 2017; Deubel et

al., 2019; Fayibi et al., 2016; Furman et al., 2013; Johnson et al., 2015; Kim et al., 2017, Lutenbacher et al., 2-17; Oniwon et al., 2016; Reno, 2018, Reeves et al., 2015; Robinson et al., 2019, Schindler-Ruwisch, 2019).

Theme 6: Pathogenesis was the Sixth Most Frequently Identified Theme and Reported in Six Studies.

Mothers are sometimes sick. Regardless of the disease process, it may greatly impact breastfeeding negatively. The illness will compound the level of stress within her life. A high level of stress is detrimental to breastfeeding (Comess, 2017; Fayibi et al., 2016; Johnson et al., 2015; Kim et al., 2017, Kaufman et al. 2009; Reno, 2018).

Theme 7: Formula Was the Sixth Most Frequently Identified Theme and Reported in Six Studies.

The formula companies invest millions of dollars in advertising their product. This practice presents the newborn formula as equivalent to breastmilk, including that formula is more convenient (Asiodu et al., 2016; Barbosa et al., 2017; Comess, 2017; Johnson et al., 2015; Oniwon et al., 2016; Reeves et al., 2015).

Theme 8: Newborn Health Was the Least Frequently Identified Theme and Reported in One Study.

A newborn who requires medical attention may not be able to be breastfeed; infant illness is a risk factor for breastmilk production reduction. Breasts must be stimulated to maintain milk supply, mothers who do not have their newborn suckling will experience decreased milk production at a higher rate than the mothers whose newborns breastfeed at regular interval (Reno, 2018).

Summary of the Themes

The qualitative studies explained the issues that NHB women identified as factors that played a role in their low breastfeeding rates. Mothers who encounter breastfeeding women in their communities may view breastfeeding as the obvious feeding choice. Similarly, the advertisement of infant formula cements the notion that formula is equal or more convenient than breastfeeding, or simply culturally accepted. Separation from the newborn increases breastfeeding challenges, the causes may be work, education, and often times separation due to newborn or maternal illness. The most cited breastfeeding barrier is inadequate support from her family, her neighborhood, work or school, healthcare providers, and the governmental leadership. We have complex lives that are affected by multiple factors. Racism, bias, discrimination, social support, employment environment, and socioeconomic are some of the pieces that affect health (WHO, 2003). Breastfeeding is influenced by our complex lives. Our culture, home and family, our work or classes, our self-efficacy, and our governmental policies will play a role in our breastfeeding decision. As such, mothers with limited breastfeeding support from all these entities have been seen to breastfeed less. Several researchers sought to present factors beneficial to breastfeeding. Addressing a single factor has not proven to decrease breastfeeding disparities for the NHB women. According to WHO (2003) and the Association of State and Health Officials (2017), social determinants of health cause women to form certain opinions, make choices, and have experiences that may limit starting and continuing to breastfeed. IM will be an

excellent tool to tackle the breastfeeding rate in the NHB population due to its assessment of most of the factors which affect breastfeeding. A quantitative review will follow.

Findings from the Review of Quantitative Articles

Thirteen quantitative articles were reviewed. Five were randomized controlled trials, two were non-randomized, two were longitudinal with pre- and post-intervention tests, two were literature reviews, one was quasi-experimental, and one was a mixed study design. The study period ranged from the first day to 1 year of the newborn life. The subjects of all the articles were NHB women who belong to a lower socioeconomic group. Different statistical assessment was completed for the evaluation of the results and the characteristics of the subjects. Leruth et al. (2017) were the only authors who did not present the probability value for their findings; their evaluation of the results was presented as a percentage. A lack of probability calculation is not enough to discredit a study finding (Polit, 2010). Table 7 summarizes the findings.

Table 7

Summary of Quantitative Articles Analysis

Author, date	Problem Description	Aim, setting, sample	Design, intervention	Results	Limitations
Bonuck et al. (2005)	Low breastfeeding rates in the NHB	To discover a tool to increase breastfeeding rate, Bronx health care centers, 304 women	Randomized, non-blinded, prenatal and postnatal lactation consultant education, support, phone call support postpartum up to 12 months	Breastfeeding rate increased	Recall bias, some subjects breastfed for the research, over-reporting of breastfeeding, sample is not reflective of US population
Bonuck, et al. (2014)	Low breastfeeding rates	To determine the effectiveness of primary care prenatal and postnatal interventions to increase breastfeeding, Bronx, 741 subjects	To determine the effectiveness of primary care prenatal and postnatal interventions to increase breastfeeding, Bronx, 741 subjects	3-month breastfeeding rates increased	Results are specific to one group, recall bias, Hawthorne effect
Chapman and Perez-Escamilla (2012)	Minority with low breastfeeding rates	To review articles that outline breastfeeding barriers and supportive interventions, 22 articles	Systematic literature review	Breastfeeding themes to improve rates were found	Discrepancies in the definition of terms among studies decreased the strength of the result
Edmunds et al. (2017)	Low breastfeeding rates	Evaluation of You can Do It (YCDI) intervention, New York State, 688, 347, and 362 subjects	Quasi experimental, counseling based on the Breastfeeding Attrition Prediction Tool (BAPT)	Use of a breastfeeding assessment tool and YCDI initiative increased breastfeeding	Small sample, recall bias
Hans et al. (2018)	Low breastfeeding rates	Study about the success of a home visiting doula program about childbirth education, breastfeeding, maternal and newborn health in Illinois, 312 subjects	Randomized controlled trial, home visiting doulas	Breastfeeding initiation increased; the 3 months breastfeeding rate did not increase	Sample is not representative of the diverse groups, recall bias

Author, date	Problem Description	Aim, setting, sample	Design, intervention	Results	Limitations
Leruth et al. (2017)	Low rate of breastfeeding	To increase rates of breastfeeding, Illinois, 273 subjects	Non-randomized, systematic approach	Breastfeeding initiation and 6 months duration increased	Small sample, recall bias, non-randomized
Munn et al. (2018)	Low rate of mothers completing baby-friendly steps	To increase breastfeeding, South Carolina, 180/900 participants	Mixed design, baby friendly practices, lactation consultation	baby-friendly practices and lactation consultation increased the breastfeeding rates	Convenience sample, recorder error, recall bias, missed variables data
Piwoz and Huffman (2015)	Impact of Breast Milk Substitute (BMS) practices on breastfeeding	Impact of breast milk substitute practices on breastfeeding	To search consequences of the BMS on breastfeeding, articles	BMS Advertisement influenced breastfeeding decision	Articles did not present their evaluation or was not available
Pugh et al. (2010)	Low breastfeeding rates	Increase breastfeeding rates among NHB, Baltimore, 328 subjects	Randomized controlled trial	Improved breastfeeding rates	Sample cannot be generalized
Thomson et al. (2017)	Low rate of breastfeeding among Southern Rural Americans	Increase breastfeeding rates, Mississippi, 54 Subjects	Longitudinal, PAT intervention	Improved breastfeeding initiation, not exclusive breastfeeding, nor prolonged breastfeeding	Definition of terms were different across studies
Thurman and Allen (2008)	Low breastfeeding rates	To assess lactation consultant (LC) effectiveness, five articles reviewed	Literature review	LC may be successful in increasing breastfeeding rates	Retrospective study bias
Witt et al. (2012)	Low breastfeeding rates	To increase breastfeeding, Cleveland, 350 subjects	Pre- and post-implementation	Home lactation visit helpful in supporting breastfeeding	Retrospective study bias, some lack of EMR documentation

The consistent themes among the 13 studies were breastfeeding education during the prenatal, intrapartum, and postpartum periods; use of a multidisciplinary approach; breastfeeding representation of the community within the breastfeeding professionals who are employed by the healthcare industry. Bonuck et al. (2005), Bonuck et al. (2014), Edmunds et al. (2017), Lee et al. (2018), Leruth et al. (2017), Pugh et al. (2010), and Witt et al. (2012) had significant results regarding breastfeeding education and support in the antepartum clinic, on the post-partum units, for the home visits or phone calls which played a role as at helping mothers to initiate breastfeeding, and to maintain it for about one week. The interventions differed in the type of professionals who delivered them. A multidisciplinary healthcare team of nurses, various healthcare providers, and a LC made a positive impact on the breastfeeding rate as per Bonuck et al. (2005), Bonuck et al. (2014), Witt et al. (2012). Peer counselors led the effort to educate and support mothers about breastfeeding by Lee et al. (2018), Pugh et al. (2010), Thomson et al. (2017), Thurman and Allen (2008), and Witt et al. (2012), Edmunds et al. (2017) used BAPFT, a breastfeeding knowledge assessment tool, to design an individualized education to address low breastfeeding. Hans et al. (2018) used doula to deliver education and support. The systematic literature review about breastfeeding and minority mothers were done by Chapman and Perez-Escamilla (2012), which illustrated several interventions that helped NHB women succeed at breastfeeding, such as: peer counseling, breastfeeding specific clinic sessions, breastfeeding professional support, a breastfeeding team, group prenatal education, and enhanced breastfeeding programs to improve breastfeeding. Piwoz and Huffman (2012) found BMS companies invested in placing their product at the forefront

of the public, as newborn food. Piwoz and Huffman (2012) stated that the action of the BMS manufacturers has been successful at increasing BMS purchase, and therefore resulted in a decrease of breastfeeding confidence and rate.

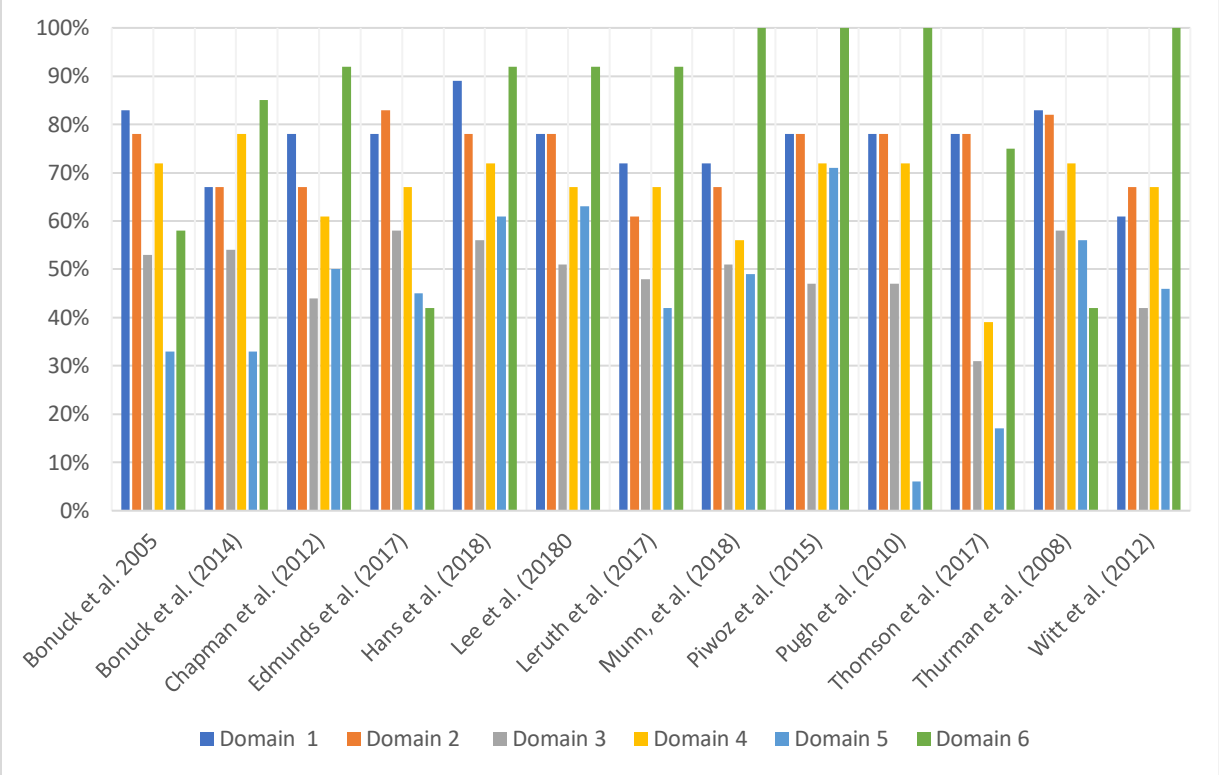
The efforts towards the improvement of the breastfeeding rates in the NHB have been successful at increasing the initiation rate of breastfeeding, but not the exclusivity rate, nor the prolong breastfeeding rates from seven days onward during the 14 years of this review span. The statistical results were not significant in none of the studies by: Bonuck et al (2004), Bonuck et al. (2014), Hans et al. (2018), Lee et al. (2018), Leruth et al. (2017), Pugh et al. (2010), Thomson et al. (2017), and Witt et al. (2012).

A qualitative review of the quantitative articles was completed through the application of AGREE II, see Appendix C. This tool was initially published in 2003 by a group of international scholars to standardize the guidelines' evaluation (Brouwers et al., 2010). It was updated in 2013, and 2017 (AGREE II, 2017). AGREE II has 6 domains, which have a total of 23 items (Browsers et al., 2010). A document which is assessed via AGREE II is judged on: scope and purpose with three items, stakeholder development with three items, rigor of development with eight items, clarity of presentation with three items, applicability with four items, and editorial independence with two items (Brouwers et al., 2010). Each item may receive a minimum score of one to a maximum of seven (Brouwers et al., 2010). AGREE II (2017) stated that each domain receives a cumulative score by adding all the scores for each domain, and scaling a percentage using this formula:

$$\frac{\text{Obtained score} - \text{Minimum possible score}}{\text{Maximum possible score} - \text{Minimum possible score}}$$

Figure 3

AGREE II Quantitative Analysis



- Domain 1:
    - The percentage of accuracy for scope and purpose ranges from 61% to 83%. Witt et al. (2012) had the lowest score, due to the missing characteristic of the population description. Points were removed for the sample of the population due to a lack of details such as age, severity of disease, co-morbidities which might impact breastfeeding for Bonuck et al. (2005), Bonuck et al. (2014), Chapman et al. (2017), Hans et al. (2018), Lee et al. (2018), Leruth et al. (2017), Munn et al., (2018), Piwoz and Huffman (2015), Pugh et al. (2010), Thomson et al., (2017), and Thurman et al. (2008). One of the themes of the

qualitative design literature review was maternal illness as a deterrent to breastfeeding (Comess, 2017; Fayibi et al., 2016; Johnson et al., 2015; Kim et al., 2017, Kaufman et al. 2009; Reno, 2018).

- Domain 2:
    - Stakeholder involvement: None of the articles identified the expertise of the researchers or a clearly stated viewpoint from the intended audience of the maternity areas that would enact the proposed changes.
- Domain 3
    - Chapman and Perez-Escamilla (2012), Piwoz and Huffman (2015), and Thurman and Allen (2008) reported the databases they used in their literature review. The time range for the search was only reported by Piwoz and Huffman and Thurman and Allen among the 13 studies. The sample size was determined through power analysis for Bonuck et al. (2014), Pugh et al. (2010), Thomson et al. (2017), and Witt et al. (2012). The remainder of the articles did not use a sampling technique. Bonuck, et al. (2005), Bonuck, et al. (2014), Hans et al. (2018), Lee et al. (2018), Munn et al. (2010), Pugh et al. (2010), and Thomson et al. (2017) analyzed the variables within the study through *t* test, chi square, and bivariate statistics. Edmunds et al. (2017) and Leruth et al. (2017) presented their results by comparing the percentage of improvement.
- Domain 4

- The clarity of presentation was met at various degrees by all the articles. All the articles agreed that despite the education and support exclusive breastfeeding remained unachievable at present. Thomson et al. (2017) stated "The fact that only one participant exclusively breastfed her infant is especially discouraging given the many avenues used to mitigate the known modifiable barriers to breastfeeding" (p. 9). The social determinants of health may not have been considered by all the authors. Asiodu et al. (2017) recognized the breastfeeding challenges NHB faced such as pre- and post-partum factors, their life issues, chronic health problems, and resource poor neighborhood.

- Domain 5
  - Applicability of the interventions appear valid. The financial challenges for the additional staff were mentioned as a major barrier by Witt et al. (2012). The breastfeeding interventions used LC and peer counselors during the pregnancy and for the home visits or phone calls. None of the studies provided the cost estimation for the suggested programs, which would make it difficult for the institutions to enact the recommendation without a budgetary allocation.
- Domain 6
  - The editorial independence was not stated by two articles: Bonuck et al. (2005) and Edmunds et al. (2017). The other 12 articles stated clearly their source of support and declared their editorial independence.

Summary of the Qualitative Assessment

The authors of one study did not provide sufficient information from their assessment of the literature (Leruth et al., 2017). The other 12 articles presented adequate information to establish a perception of the breastfeeding practice among the representative sample. The only feasible method of data collection for all the studies is through interview, although recollection bias is one of its limitations. The researchers obtained IRB approval for their studies. The data analysis section by Chapman and Perez-Escamilla (2012) provided six sets of recommendations which an organization could use. The extent to which NHB women were the represented subjects in these studies ranged from 45% to 100%. The sample characteristics such as subject ethnicity were presented in the section of data analysis for all the articles. The age range of included women was 18 to 34 years. The exception was for Pugh et al. (2010), who included subjects 13 to 43 years of age and Hans et al. (2018) who included subjects 16 to 18 years of age. The samples were small for most of the studies, which was one of the most frequently identified limitations by the study authors. One study (Lee et al., 2018) included a convenience sample of 18,000 maternal participants. Lee et al. (2018) used a 2-tailed binomial test to discover whether inter-variable differences existed.

The research articles were not able to be compiled as one due to the different timeframes of breastfeeding assessment, and the different aspects of breastfeeding researched. HP2020 set the goals for ever breastfed, breastfeeding at 6 months, breastfeeding at 1-year, exclusive breastfeeding at 3 months and 6 months, and the reduction in the number of newborns who received formula within the first 2 days of life

(0DHP, 2018). The breastfeeding time ranges that have been investigated are initiation of breastfeeding and breastfeeding at 7 days, 1 month, 2 months, 3 months, 6 months, and 12 months.

Initiation data was presented by Bonuck et al. (2005), Bonuck et al. (2014), Hans et al. (2018), Lee et al. (2018), Leruth et al. (2017), Munn et al. (2018), Pugh et al. (2010), and Witt et al. (2012). Breastfeeding initiation increased in 12 of the studies. Subjects in the Bonuck et al. (2014) study had a high initiation rate, but the improvement was not statistically significant. Similarly, Thomson et al. (2017) did not have a statistically significant increase in breastfeeding initiation. Thomson et al. (2017) stated that education alone was not an effective tool to improve breastfeeding.

The 1-month evaluation of breastfeeding was conducted by Bonuck et al. (2005), Bonuck et al. (2014), Edmunds et al. (2017), and Lee (2018). Lee et al. (2018) is the only study with a non-significant breastfeeding rate increase at 1 month. Bonuck et al. (2005), Bonuck et al. (2014), Lee et al. (2018), Pugh et al. (2010) discovered statistically significant improvement in the breastfeeding rate at 6 months. However, Witt et al. (2012) found a non-significant outcome at 6 months. The intervention presented was appropriate, which included education and support of the breastfeeding mother via phone call or home visits. The educational material was not included in the studies by Dennis (2002), DeVane-Johnson et al. (2016), Flower et al. (2008), Heidari et al. (2016), and Henshaw et al. (2015) so it was not possible to assess if they were teaching similar breastfeeding information. The population was identified, and results were presented according to the ethnic groups represented in the subject sample, as were the categorical

variables such as age, marital status, employment, and educational level in 10 of the 12 articles. The exceptions were the studies conducted by Witt et al. (2012) and Lee et al. (2018). Lee et al. (2018) provided ethnicity background as categorical variables.

All the studies discussed their findings and proposed themes, which may be applicable to improving the undertaking of breastfeeding improvement. Breastfeeding initiation was successful but continuation and exclusive breastfeeding remained challenging. The studies by Munn et al. (2018) and Edmunds et al. (2017) used a socio ecological theoretical framework to complete their investigation. The authors recommended addressing the formidable social and cultural issues of systemic racism, employer and school system breastfeeding supports, and maternity leave. Piwoz and Hoffman presented a conceptual framework without explaining its relationship to their review, nor the basis of the theory.

Several of the authors surmised that the two mains methods currently used (breastfeeding education and breastfeeding support within the hospital and the community) are unable to drive the NHB breastfeeding improvement to meet the HP2020 goals of 46.25% at 3 months and 60% at 6 months (ODPHP, 2018). Bonuck et al. (2004), Bonuck et al. (2014), Lee et al. (2018), Pugh et al. (2010) stated that the NHB mothers maintained the low exclusive breastfeeding rate despite the education and support. The debilitating factors were lack of childcare, absence of maternity leave, necessity to return to work, absence of employment, and lack of breastmilk pumping accommodations (Asiodu et al. 2017). Unconscious bias is another negative factor affecting breastfeeding (Johnson, et al. 2016). Breastfeeding education without inclusion of cultural

considerations relevant to NHB women is also a barrier (Thomson et al., 2017, Chapman & Perez-Escamilla, 2012, Reno, 2017)

Findings and Implications

The quantitative and the qualitative studies were indispensable for providing a holistic view of the barriers and the factors that impact breastfeeding. All the facets of our environment play a role in a mother's breastfeeding success or failure. The studies indicated that the history of slavery, systemic racism, and unconscious bias are a strain on breastfeeding among NHB women. The list of barriers also included a lack of breastfeeding education, social support, and health care support; a culture that does not emphasize breastfeeding; work environments that do not facilitate breastfeeding; stress from a variety of life events and circumstances; breastfeeding pain; maternal physical or mental illness; easy availability of formula; and newborn illness. Lactation providers must be diverse and be representative of the community they serve. Well intentioned scholars put in place educational programs facilitated by different health care professionals such as, LCs, breastfeeding peer counselors, multidisciplinary breastfeeding teams, parents as teachers, and home visiting programs to improve breastfeeding. The initiation rate increased in most of the studies but not the exclusive breastfeeding rates. Three studies resulted in a 6-month breastfeeding improvement.

The review reemphasized the appropriateness of applying the IM framework to this project. Any breastfeeding solution must address the different factors that affect breastfeeding. Breastfeeding best practices and strategies to promote breastfeeding have been compiled by national and international agencies such as the CDC, WHO, and the

Surgeon General of the United States. These agencies provide evidence-based recommendations for actions needed to promote breastfeeding.

WHO developed the Ten Steps to Baby Friendly Designation (WHO, 2018) and the Ten Steps to Successful Breastfeeding (WHO, 2018). The Ten Steps to Baby Friendly Designation have two parts: critical management procedures and key clinical practices and are as follows:

Critical Management Procedures

1. a. Comply fully with the International Code of Marketing of Breastmilk Substitutes and relevant World Health Assembly resolutions.
    b. Have a written infant feeding policy that is routinely communicated to staff and parents.
    c. Establish ongoing monitoring and data-management systems.
2. Ensure that staff have sufficient knowledge, competence, and skills to support breastfeeding.

Key Clinical Practices

3. Discuss the importance and management of breastfeeding with pregnant women and their families.
4. Facilitate immediate and uninterrupted skin-to-skin contact and support mothers to initiate breastfeeding as soon as possible after birth.
5. Support mothers to initiate and maintain breastfeeding and manage common difficulties.

6. Do not provide breastfed newborns any food or fluids other than breast milk, unless medically indicated.
7. Enable mothers and their infants to remain together and to practice rooming-in 24 hours a day.
8. Support mothers to recognize and respond to their infants' cues for feeding.
9. Counsel mothers on the use and risks of feeding bottles, teats, and pacifiers.
10. Coordinate discharge so that parents and their infants have timely access to ongoing support and care.

Every facility providing maternity services and care for newborn infants should achieve these goals as per WHO (2018).

The CDC endorses the WHO Ten Steps to Successful Breastfeeding and prepared the Guide of Strategies to Support Breastfeeding Mothers and Babies, which are as follows:

Strategy 1. Maternity care practices

Strategy 2. Professional education

Strategy 3. Access to professional support

Strategy 4. Peer support programs

Strategy 5. Support for breastfeeding in the workplace

Strategy 6. Support for breastfeeding in early care and education

Strategy 7. Access to breastfeeding education and information

Strategy 8. Social marketing

Strategy 9. Addressing the marketing of infant formula.

In 2011, the U.S. Surgeon General released a set of actionable items grouped into the following seven categories.

1. Mothers and Their Families

Action 1: Give mothers the support they need to breastfeed their babies

Action 2: Develop programs to educate fathers and grandmothers about breastfeeding

2. Communities

Action 3: Strengthen programs that provide mother-to-mother support and peer counseling

Action 4: Use community-based organizations to promote and support breastfeeding

Action 5: Create a national campaign to promote breastfeeding

Action 6: Ensure that the marketing of infant formula is conducted in a way that minimizes its negative impacts on exclusive breastfeeding

Health Care

Action 7: Ensure that maternity care practices throughout the United States are fully supportive of breastfeeding

Action 8: Develop systems to guarantee continuity of skilled support for lactation between hospitals and health care settings in the community

Action 9: Provide education and training in breastfeeding for all health professionals who care for women and children

Action 10: Include basic support for breastfeeding as a standard of care for midwives, obstetricians, family physicians, nurse practitioners, and pediatricians

Action 11: Ensure access to services provided by International Board-Certified Lactation Consultants

Action 12: Identify and address obstacles to greater availability of safe banked donor milk for fragile infants

Employment

Action 13: Work toward establishing paid maternity leave for all employed mothers

Action 14: Ensure that employers establish and maintain comprehensive, high-quality lactation support programs for their employees

Action 15: Expand the use of programs in the workplace that allow lactating mothers to have direct access to their babies

Action 16: Ensure that all childcare providers accommodate the needs of breastfeeding mothers and infants

Research and Surveillance

Action 17: Increase funding of high-quality research on breastfeeding

Action 18: Strengthen existing capacity and develop future capacity for conducting research on breastfeeding

Action 19: Develop a national monitoring system to improve the tracking of breastfeeding rates as well as the policies and environmental factors that affect breastfeeding

Public Health Infrastructure

Action 20: Improve national leadership on the promotion and support of breastfeeding

These three entities, the CDC, WHO, and the U.S. Surgeon General Office are supporting each other's missions to promote breastfeeding for all newborns. These agencies provide guidance to the health care system by addressing the specific actions and components that must be in place to improve breastfeeding rates. The parts of the system are the health care institutions that encompass the health care environment and all the workers who will be in contact with breastfeeding women and their families, her community, her work environment, the governmental policies, and activities with the goal to contribute to the improvement of breastfeeding. Effective breastfeeding education must be broken down in smaller parts and linked to the overall purpose of initiating, sustaining, and protecting breastfeeding.

Recommendations

The literature reviewed consistently presented that a successful breastfeeding community requires several components to encourage and support breastfeeding. Breastfeeding education is needed for the mother and her support system. This education must not start only during pregnancy, it must be pervasive. It is also necessary for the community to believe in the benefits of breastfeeding. The community must include breastfeeding women who are representative of the NHB population. The community of health care workers and the breastfeeding specialists similarly will improve the breastfeeding culture if they are members of the various ethnic groups who populate the

city. The support for breastfeeding has to be customized to the needs of the locality. Breastfeeding laws are necessary, they give the right to breast pumping in a safe place and cool storage for the pumped milk. Identifying adequately prepared NHB lactation specialists to reinforce breastfeeding may be challenging but possible.

Developing a strong sense of breastfeeding self-efficacy in NHB women may influence breastfeeding positively. The health care community must invest in the hiring of a diverse group of lactation specialists and breastfeeding education must be part of the prenatal care, intrapartum care, and the postnatal care. Mothers must be followed upon discharge to support her breastfeeding activities and to prevent premature cessation of breastfeeding. Partnering with the local Department of Health will also benefit the community. Breastfeeding is a community event and according to Bonuck et al. (2005) and Lee et al. (2017), NHB women who were raised in a breastfeeding community outside the United States have a greater rate of breastfeeding as compared to the NHB women who were raised in the United States.

The short-term recommendations are to establish breastfeeding education as soon as patients enter the health care system and to continue education until breastfeeding is firmly established. Community informational sessions can be held to equip the family members with the knowledge necessary to support the mothers. Partnering with the schools can encourage and facilitate young adults into a lactation support career. The stress of racism has also been shown to impact breastfeeding negatively. As this is a societal malaise, participating in an activity that decreases bias would benefit all aspects of life, even breastfeeding.

The adoption of the Ten Steps to Baby Friendly Designation would cover education of all the staff who will come into contact with a pregnant or birthing woman and the education of the patient and family. An evaluation of the patient education provided by health care staff needs to be conducted regularly to judge its effectiveness in promoting HP2020 goals.

Contribution of the Doctoral Project Student

This doctoral project summarized the varied factors that influence women's decision to breastfeed. Awareness of the problem is always the first part of the solution. The doctoral project brings to the surface that breastfeeding must be part of the culture of a society. Breastfeeding education has to start in schools, continue in the health care institutions, and be supported by almost all the members of the society. The contribution of this project is to present the identified breastfeeding barriers to the stakeholders in the clinical setting. These barriers can be greatly reduced if a majority of health care professionals in the hospital participate in an initiative to address the barriers and implement evidence-based best practices to promote and maintain breastfeeding among NHB mothers.

Strengths and Limitations of the Project

The consistency of information in the studies was a strength of this project. The recommendations from the CDC, the Surgeon General, and WHO are in line with those explicated by the various authors whose work was included in this systematic review. The limitations were that some of the qualitative studies did not identify the methods that would have improved the validity and reliability of their findings. Additionally,

breastfeeding definitions across the studies differed; study participants were drawn from homogenous small samples, and replication of the studies are not possible as they lacked sufficient information to allow the conduct of comparable research. The recommendations regarding the hiring of individuals, training of NHB as lactation professionals, and reducing bias are topics that are not within my current scope of practice. Finally, the findings from this review will be shared with local stakeholders to inform them of the barriers and protective factors of breastfeeding in the community so that it may guide a breastfeeding quality improvement initiative through collaboration among the different sectors of the community.

Summary

Thirty articles were reviewed. The qualitative research studies were interviews of NHB mothers who provided information about the barriers to breastfeeding. The seven identified themes were inadequate support of breastfeeding, minimal breastfeeding culture, work or school settings that do not promote breastfeeding, the impact of slavery and racism, breast or nipple pain, physical or mental ailments, birthing or clinic facilities that provided free formula and formula display, and newborn illness. One subtheme of culture is to have representation of NHB women as members of the lactation team.

The quantitative studies validated the qualitative findings. Education and support were the main interventions. The education was provided by a LC, peer counselors, and healthcare providers. Multidisciplinary teams combined their efforts to educate mothers to be. The setting of the education must include the prenatal clinic, the birthing place, and the patient's home post birth. Breastfeeding initiation has increased significantly.

Exclusive breastfeeding remains low despite the health care professionals' efforts and the patients' desire to breastfeed. Part of the low breastfeeding rates except for initiation can be explained through the social determinants of health among NHB women. As a city with a low socio-economic status, high rate of obesity, and poor health scores, all the stakeholders from the mother, the mother's family and friends, the healthcare institution, and the government must band together to increase the rate of breastfeeding. Health care institutions alone have been unable to complete the breastfeeding improvement task. The recommendations from the CDC, WHO, and the Surgeon General are similar and address the social, cultural, economic, and environmental factors that influence breastfeeding in the NHB. Section 5 will present the dissemination plan of the doctoral project. This project will create positive social change by providing direction to a subsequent quality improvement initiative in the hospital that will use the evidence-based recommendations found in the literature to improve breastfeeding rates and the health of the breastfed newborns and their mothers. As an advanced practice nurse, it is essential to contribute to population health by disseminating scholarly findings.

Section 5: Dissemination Plan

The dissemination plan will follow the SMART guidelines. The plan will be specific, measurable, actionable, realistic, and timed. The timeframe to present the dissemination plan will be within 6 months of graduation. The community partnership regarding health fairs and breastfeeding support will be continuous. The health care institutions that are part of the community are determined to participate in plans to increase the breastfeeding rate of the majority NHB and Hispanic community. All three health care organizations in the area sought and obtained the Baby Friendly Designation. One hospital had a significant increase in their breastfeeding initiation rates. Their exclusivity rate has reached a maximum of 15%, however, a rate far below the HP2020 goal.

The dissemination plan is to present the findings of the breastfeeding barriers to the stakeholders of the institution, the WIC office leadership, and the pediatric clinic affiliated with the hospital within 6 months of the completion of the DNP project. A summary of the steps needed to disseminate the findings are as follows:

Step 1: collaborate with the city to use the different lactation services sponsored by the city to establish breastfeeding support from the delivery of the newborn until the second week postpartum. The birthing place may collaborate with the pediatric clinic to support the mothers through Doulas and Visiting Nurse Services.

Step 2: encourage the institutions to display posters of NHB and Hispanic women breastfeeding and to encourage the hiring of NHB as lactation professionals. A community partnership should be formed to promote breastfeeding through various

health fairs, and elementary, high school, and college fairs. The various day care centers of the neighborhood could be provided with mini-educational sessions that support the breastfeeding mothers. Engagement of the local government to invest in advertisement of breastfeeding among NHB women for visual cues in the neighborhood could significantly increase breastfeeding as a cultural norm.

Step 3: establishment of breastfeeding friendly work environments with a breastfeeding and pumping policy and a clean place for breastmilk pumping.

Step 4: educate and support the breastfeeding family. Mothers can learn about correct latch and the newborn can be assessed for newborn driven challenges to breastfeeding. During maternal illness, if not contraindicated, the lactation consultant must be part of the treatment team to support the breastfeeding mother with other means of breastmilk collection. Pharmacological assessment for breastfeeding has to be part of the health care plan.

Step 5: apply the Baby Friendly international marketing code to purchase formula at the market rate and refrain from giving formula unless indicated or due to maternal decision. Many institutions formula feed the newborns without informing the mother. Health care professionals need to promote breastfeeding at all times by encouraging breastfeeding, even when the newborn needs to be supplemented with formula.

Step 6: address the effect of bias, racism, and discrimination on breastfeeding. Longhurst and Brown (2013) wrote that we categorize people according to their race, then proceed to pass judgment, and assumptions that we would find unethical if a person were to do the same to us. The first step to address racism would be to recognize the

needs to rethink how I view others and to participate in the nation's discussion about systemic racism within my community and my place of employment.

Step 7: during newborn illness, the professionals must help the mother maintain activities to establish her milk supply such as education about the higher likelihood of her diminishing breastmilk and actions to take to prevent it. The nurse can refer the mother and family to social services for help. Finally, collaboration with the maternal-child staff at the health department can lead to better support the breastfeeding family.

Analysis of Self

This project was a personal journey into EBP application. As a scholar, I come to appreciate the prework involved in all improvement projects. I learned to complete the prework, which consists of the review of the literature and data collection prior to a quality improvement project's initiation. My previous lack of scholarship was instrumental in many improvement plan failures or derailed projects. As a scholar, I will apply the evidence-based strategies to all health care challenges. I understand that I am a scholar and a project manager. This ownership means that I will maintain a timeline and continuous assessment of all improvement plans. Breastfeeding among NHB women is an area where I would like to contribute, along with other encountered deficiencies. As a leader in women's health, I will approach areas of needs with a scholarly structure at all times. To contribute to the profession of nursing, one of my goals is to participate in conference presentations and the publishing of at least one article. Ultimately, I would like to assist doctoral nursing students on their journey.

The systematic review of the literature project was much more arduous than I expected. My challenges were the use of the tools to critique and analyze the articles. I also did not plan my review appropriately, increasing my workload unnecessarily. I should have followed the PRISMA guideline for each article manually, then completed my review electronically. This action would have helped improve my time utilization. One of the best investments was the reading of *Evidence-Based Practice in Nursing* by Melnyk and Fineout-Overholt and *How to do a Systematic Literature Review in Nursing* by Bettany-Saltikov and McSherry. Both books were critical in guiding me toward the completion of this project. These books will be essential books in my library for future EBP undertakings. I would advise a novice researcher to complete the plan to conduct the systematic review, to gather the tools, to use the PRISMA form to review each study, and to plan methodically a specific length of time weekly to perform the tasks until completion.

Summary

The breastfeeding rates of the NHB in the United States have not reached the goals set by HP2020. The rates among NHB women are the lowest of all the United States ethnic groups. The doctoral project reviewed 17 qualitative and 13 quantitative studies in an effort to identify barriers to breastfeeding in NHB women. This paper presented the best breastfeeding practices that support breastfeeding through the different childbearing stages. The culmination of the difficulty in initiating and maintaining breastfeeding were diverse. Breastfeeding is affected by the breastfeeding individual, family, father of the newborn or the support person, her work environment or school, all

health care professionals in the women's health care environment, the neighborhood culture, her historical background, her nativity, and the local and state governments' breastfeeding programs. An interaction of these variables will protect or deter breastfeeding. Actions toward breastfeeding improvement must secure the participation of the stakeholders, along with a project manager to link all the resources, activities, and outcomes. This endeavor is quite challenging. All the stakeholders must take ownership of their role in this meaningful goal.

The findings of this project can contribute to positive social change as healthier newborns and mothers will experience fewer negative social determinants of health. The project aligns with the goals of the hospital as well as Walden University. Both organizations seek to support social change and social justice. The systematic review will guide a quality improvement project to address the breastfeeding barriers and strengths of NHB. This capstone project will add to the published knowledge on this subject and guide nurses in their mission to participate in the health improvement of their patients and their communities.

References

AGREE Next Steps Consortium (2017, December). *The AGREE II Instrument*. htttp://www.agreetrust.org

Al-Sagarat, A. Y., Yaghmour, G., & Moxham, L. (2017). Intentions and barriers toward breastfeeding among Jordanian mothers--a cross sectional descriptive study using quantitative method. *Women and Birth, 3*0, e152-e157. doi: 10.1016/j.wombi.2016.11.001

American Academy of Pediatrics. (2012). *AAP reaffirms breastfeeding guidelines.* https://www.aap.org/en-us/about-the-aap/aap-press-room/Pages/AAP-Reaffirms-Breastfeeding-Guidelines.aspx

American Association of Colleges of Nursing. (2006). *The essentials of doctoral education or advanced nursing practice*. https://www.aacnnursing.org/Portals/42/Publications/DNPEssentials.pdf

Antsey, E.11 H., Chen, J., Elam-Evans, L. D., & Perrine, C. G. (2017). Racial and geographic differences in breastfeeding- United States, 2011-2015. *MMWR. Morbidity and Mortality Weekly Report, 66*(27): 723-727. https://doi.org/10.15585/mmwr.mm6627a3

Asiodu, I. V., Waters, C. M., Dailey, D. E., & Lyndon, A. (2016). Infant feeding decision-making and the influences of social support persons among first-time African American mothers. *Maternal and Child Health Journal, 21*(4): 1-10

Association of States and Territorial Health Officials. (2017). *Enhancing Health Equity in Breastfeeding Opportunities and Outcomes.* https://www.astho.org/Maternal-

and-Health/Enhancing-Health-Equity-in-Breastfeeding-Opportunities-and-Outcomes/Issue -Brief/

Bandura, A. (1971). *Social learning theory.* General Learning Press. http://www.asecib.ase.ro/mps/Bandura_SocialLearningTheory.pdf

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist*, *28*, 117–148. https://www.uky.edu/~eushe2/Bandura/Bandura1993EP.pdf

Bandura, A. (2004). Health promotions by social cognitive means. *Health Education & Behavior, 31*(2), 143-164. https://doi.org/10.1177/1090198104263660

Barbosa, C. E., Masho, S. W., Carlyle, K. E., & Mosavel, M. (2016). Factors distinguishing positive deviance among low-income African American women: A qualitative study on infant feeding. *Journal of Human Lactation, 33*(2), 368-378. https://doi.org/10.1177/0890334416673048

Bettany-Saltikov, J., McSherry, R. (2016). *How to do a systematic literature review in nursing: a step-by-step guide* (2nd ed.). [Kindle]. Open University Press.

Bartick, M. (2013). Breastfeeding and health: A review of the evidence. *Journal of Women Politics & Policy*, *34*(4), 317-329.

Blyth, R., Creedy, D. K., Dennis, C. L., Moyle, W., Pratt, J., & De Vries, S. M. (2002). Effect of maternal confidence on breastfeeding duration: An application of breastfeeding self-efficacy theory. *Birth*, *29*(4), 278–284.

Bonuck, K. A., Stuebe, A., Barnett, J., Labbok, M. H., Fletcher, J., & Bernstein, P. S. (2014). Effect of primary care intervention on breastfeeding duration and intensity. *Research and Practice, 104*(S1), S119-S127.

Bonuck, K. A., Trombley, M., Freeman, K., & McKee, D. (2005). Randomized, controlled trial of a postnatal lactation consultant intervention on duration and intensity of breastfeeding up to 12 months. *Pediatrics, 116*(6), 1413-1442.

Brouwers, M. C., Kho, M. E., Browman, G. P., Burgers, J. S., Cluzeau, F., Feder, G., Fervers, B., Graham, I. D., Grimshaw, J., Hanna, S. E., Littlejohns, P., Makarski, J., & Zitzelsberger, L. (2010). AGREE II: Advancing guideline development, reporting and evaluation in healthcare. *Canadian Medical Association Journal, 182*: E839-842.

Brownell, K., Hutton, L., Hartman, J., & Dabrow, S. (2002). Barriers to breastfeeding among African American adolescents' mothers. *Clinical Pediatrics, 41*(9), 669-673. https://doi.org/10.1177/00099228024100905

Caldwell, K. A., Henshaw, L., & Taylor, G. (2011). Developing a framework for critiquing health research: an early evaluation. *Nurse Education Today, 31*(8), e1-e7.

Centers for Disease Control and Prevention. (2013). Progress in increasing breastfeeding and reducing racial/ethnic differences – United States, 2000 – 2008 births. *MMWR. Morbidity and Mortality Weekly Report.* https://www.cdc.gov/mmwr/pdf/wk/mm6205.pdf

Centers for Disease Control and Prevention. (2013). *Strategies to prevent obesity and other chronic diseases: The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies*. https://www.cdc.gov/breastfeeding/pdf/BF-Guide-508.PDF

Centers for Disease Control and Prevention. (2017). *Breastfeeding.* www.cdc.gov/breastfeeding/data/nis_data/results.html

Centers for Disease Control and Prevention. (2017). *Questionnaires: Breastfeeding and Infant Feeding Practices Study II and its year six follow-up.* https://www.cdc.gov/breastfeeding/data/ifps/questionnaires.htm

Centers for Disease Control and Prevention. (2018). *Breastfeeding Report Card.* https://www.cdc.gov/breastfeeding/data/reportcard.htm

Chapman, D. J., & Perez-Escamilla, R. (2012). Breastfeeding among minority women: Moving from risk factors to interventions. *Advances in Nutrition, 3*(1), 95-104. https://doi.org/10.3945/an.111.001016

Comess, J. E. (2017). Enhancing breastfeeding rates in African American women: A literature review. *Journal of the National Society of Allied Health, 14*(1), 43-49.

Connolly, C. (2005). Historical perspectives in pediatrics. Saving babies: Child-saving and infant nutrition. *Pediatric Nursing*, *31*(4), 309-311.

Corbin, J., & Strauss, A. (2008). *Basics of qualitative research*: *Techniques and procedures for developing grounded theory* (3rd ed., pp. 45-64). SAGE Publications, Inc. doi:10.4135/9781452230153

County Health Rankings & Roadmaps. (2018). *New York, 2017 Bronx health outcomes overall rank*. http://www.countyhealthrankings.org/app/new-york/2017/rankings/bronx/county/outcomes/overall/snapshot

Dennis, C. L. (2002). Breastfeeding initiation and duration: A 1990-2000 literature review. *Journal of Obstetric, Gynecologic & Neonatal Nursing, 31*(1), 12-35. https://doi:10.1111/j.1552-6909.2002.tb00019.x

Deubel, T. F., Miller, E. M., Hernandez, I., Boyer, M., & Louis-Jacques, A. (2019). Perceptions and practices of infant feeding among African American women. *Ecology of Food and Nutrition, 58*(4), 301-316. https://doi.org/10.1080/03670244.2019.1598977

DeVane-Johnson, S., Woods-Giscombe, Thoyre, S., Fogel, C., & Williams, R. II. (2017). Integrative literature review of factors related to breastfeeding in African American women: Evidence for a potential paradigm shift. *Journal of Human Lactation, 33*(2), 435-447. https://doi.org/10.1177/0890334417693209

Dunn, R. L., Kalich, K. A., Henning, M. J. & Fedrizzi, R. (2015). Engaging field-based professionals in a qualitative assessment of barriers and positive contributors to breastfeeding using the social ecological model. *Maternal Child Health Journal, 19*, 6-16. https://doi.org/10.1007/s10995-014-1488-x

Edmunds, L. S., Lee, F. F., Eldridge, J. D., & Sekhobo, J. P. (2017). Outcome evaluation of the You Can Do It initiative to promote exclusive breastfeeding among women enrolled in the New York State WIC program by race/ethnicity. *Journal of Nutrition Education and Behavior, 49*(752), S162-S168.

Fata, S., & Atan, S. U. (2018). The relationship between fatigue and breastfeeding self-efficacy. *Nigerian Journal of Clinical Practice, 21*(11), 1408-1414. https://doi:10.4103/njcp_366_17

Fayibi, C., Peacock, N., Hebert-Beirne, J., & Handler, A. (2016). A qualitative study to understand nativity differences in breastfeeding behaviors among middle-class African American and African-born women. *Maternal and Child Health Journal, 20*(10), 2100-2111. https://doi.org/10.1007s10995-016-2029-6

Fein, S. B., Labiner-Wolfe, J., Shealy, K. R., Li, R. Chen, J., & Grummer-Strawn, L. M. (2008). Infant Feeding Practices Study II: Study method. *Pediatrics, 122*(2), S28-S35. https://doi.org/10.1542/peds.2008-1315c

Fewtrell, M., B., Bronsky, J., Campoy, C., Domellof, M., Embleton, N., E., Fidler M., N., Hojsak, I., Hulst, J. M., Indrio, F., Lapillonne, A., Molgaard, C. (2017). Complementary feeding: A position paper by the European Society for Paediatric Gastroenterology, Hepatology, and Nutrition (ESPGHAN) Committee on Nutrition. *Journal of Pediatric Gastroenterology and Nutrition*, *64*(1), 119. https://journals.lww.com/jpgn/Pages/ArticleViewer.aspx?year=2017&issue=01000&article=00021&type=Fulltext

Fishbein, M., Bandura, A., Triandis, H. C., Kanfer, F.H., Becker, M. H., Middlestadt, S. E. & Eichler, A. (1992). *Factors influencing behavior and behavior change: Annual report—theorist's workshop*. National Institute of Mental Health.

Fishbein, M., & Yzer, M. C. (2003). Using theory to design effective health behavior interventions. *Communication Theory, 13*(2), 164-183. http://www.dokeefe.net/FishbeinYzer03CT.pdf

Flower, K. B., Willoughby, M., Cadigan, R. J., Perrin, E. M., & Randolph, G. (2008). Understanding breastfeeding initiation and continuation in rural communities: A combined qualitative/quantitative approach. *Maternal Child Health Journal, 12*, 402-413. https://doi:10.1007/s10995-007-0248-6

Fontenot, K., Semega, J., & Kollar, M. (2018). Income and poverty in the United States: 2017. *United Census Bureau, Current Population Reports*. https://www.census.gov/content/dam/Census/library/publications/2018/demo/p60-263.pdf

Furman, L. M., Banks, E. C., & North, A. B. (2013). Breastfeeding among high-risk inner-city African American mothers: A risky choice? *Breastfeeding Medicine. 8*(1), 58-67. https://doi.org/10.1089/bfm.2012.0012

Grusec, J. E. (1994). Social learning theory and developmental psychology: The legacies of Robert R. Sears and Albert Bandura. *American Psychological Association. 28*(5), 776-786. https://doi:10.1037/10155-016

Giacomini, M. K., & Cook, D. J. (2000). Users' guides to the medical literature: XXIII. Qualitative research in health care. Are the results of the study valid? *Journal of the American Medical Association, 284*(3), 357-362.

Hans, S. L., Edwards, R. C., & Zhang, Y. (2018). Randomized controlled trial of Doula-Home-Visiting Services: Impact on maternal and infant health. *Maternal Child*

*Health Journal, 22(s*uppl 1), S105-S113. https://doi.org/10.1007/s10995-018-2537

Hansstein, F. V. (2016). The impact of breastfeeding on early childhood obesity: Evidence from the national survey of children's health. *American Journal of Health Promotion*, *30*(4), 250-258.

Hawkins, S. S., Stern, A. D., Baum, C. F., & Gillman, M. W. (2015). Evaluating the impact of the Baby-Friendly Hospital Initiative on breast-feeding rates: A multi-state analysis. *Public Health Nutrition, 18*(2), 189-197. https://doi:10.1017/S1368980014000238

Heale, R., & Forbes, D. (2013). Understanding triangulation in research. *Evidence-Based Nursing, 16*(4), 98. https://doi:10.1136/eb-2013-10149

Heidari, Z., Keshvari, M., & Kohan, S. (2016). Breastfeeding promotion, challenges and barriers: A qualitative research. *International Journal of Pediatrics 4*(5), 1687-1695.

Henshaw, E. J., Fried, R., Siskind, E., Newhouse, L., & Cooper, M. (2015). Breastfeeding self-efficacy, mood, and breastfeeding outcomes among primiparous women. *Journal of Human Lactation*, *31*(3), 511–518. https://doi:10.1177/0890334415579654

Hodges, B. C., & Videto, D. M. (2011). *Assessment and planning in health programs,* (2nd ed.). [Bookshelf]. Jones & Bartlett.

Ip, S., Chung, M., Raman, G., Chew, P., Magula, N., DeVine, D., Trikalimos, T., & Lau, J. (2007). Breastfeeding and maternal and infant health outcomes in developed

countries. *Evidence Report Technology Assessment 2007,* (153), 1-186. https://www.ncbi.mlm.nih.gov/pmc/articles/PMC4781366/

Jefferson, U. (2015). Predictors of breastfeeding attitudes among college-educated African Americans. *Research and Theory for Nursing Practice: An International Journal, 29*(3), 189-198. https://doi.org/10.1891/1541-6577.29.3.189

Johnson, A., Kirk, R., & Muzik, M. (2015). Overcoming workplace barriers: A focus group study exploring African American mothers' needs for workplace breastfeeding support. *Journal of Human Lactation, 31*(3), 425-433. https://doi.org/10.1177/0890334415573001

Johnson, A., Kirk, R., Rosenblum, K. L., & Muzik, M. (2015). Enhancing breastfeeding rates among African American women: A systematic review of current psychosocial interventions. *Breastfeeding Medicine, 10*(1), 45-62. https://doi.org/10.1089bfm.2014.0023

Kair, L. R., & Colaizy, T. T. (2016). When breast milk alone is not enough: Barriers to breastfeeding continuation among overweight and obese mothers. *Journal of Human Lactation, 32*(2), 250-257. https://doi:10.1177/0890334415605303

Kaiser Family Foundation. (2019). Health and health care for Blacks in the United States. *KFF*. https://www.kff.org/infographic/health-and-health-care-for-blacks-in-the-united-states/

Kaufman, L., Deenadayalan, S., & Karpati, A. (2009). Breastfeeding ambivalence among low-income African American and Puerto Rican women in North and Central

Brooklyn. *Maternal and Child health Journal, 14*, 696-704. https://doi.org/10.1007/s10995-009-0499-5

Kettner, P. M., Moroney, R. M., Martin, L. L. (2017). *Designing and managing programs: An effectiveness-based approach* (5th ed.). [Bookshelf]. Sage.

Kim, J. H., Fiese, B. H., & Donovan, S. M. (2017). Breastfeeding is natural but not the cultural norm: A mixed-methods study of first-time breastfeeding, African American mothers participating in WIC. *Journal of Nutrition Education and Behavior, 49*(7S2), S151-S160. https://doi:10.1016/j.jneb.2017.04.003

Kotter, J. P. (2007). Leading change: Why transformation efforts fail. *Harvard Business, 85*(1), 96-105 https://hbr.org/2007/01/leading-change-why-transformation-efforts-fail

Kronborg, H., Vaeth, M., & Rasmussen, K. M. (2013). Obesity and early cessation of breastfeeding in Denmark. *European Journal of Public Health*, *23*(2), 316-322. https://doi:10.1093/eurpub/cks135

Lee, C. H. M., O'Leary, J., Kirk, P., & Lower, T. A. (2018). Breastfeeding outcomes in Washington state: Determining the effect of loving support peer counseling program and characteristics of participants at WIC agencies. *Journal of Nutrition Education and Behavior, 50*(4), 379-387. https://doi.org/10.1016/jjneb.2017.09.002

Leruth, C., Goodman, J., Bragg, B., & Gray, D. (2017). A multilevel approach to breastfeeding promotion: Using healthy start to deliver individual support and

drive collective impact. *Maternal and Child Health Journal, 21*(Suppl 1), S4-S10. https://doi.org/10.1007/s10995-017-2371-3

Longhurst, J. E., & Brown, J. C. (2013). The five shifts: Ensuring an environment of healing. *Reclaiming Children & Youth, 22*(1) 13-17.

Lutenbacher, M., Karp, S. M., & Moore, E. R. (2015). Reflections of Black women who choose to breastfeed: Influences, challenges and supports. *Maternal and Child Health Journal, 20*(2), 231-239.

March of Dimes. (2016). *2016 premature birth report card*. https://www.marchofdimes.org/mission/prematurity-reportcard.aspx

McDonagh, M., Peterson, K., Raina, P., Chang, S., & Shekelle, P. (2013). Avoiding bias in selecting studies. In *Methods Guide for Effectiveness and Comparative Effectiveness Reviews*. Agency for Healthcare Research and Quality (US).

Meedya, S., Fahy, K. & Kable, A. (2010). Factors that positively influence breastfeeding duration to 6 months: A literature review. *Women Birth, 23*(4), 135-145. https://doi.org/10.1016/j.wombi.2010.02.002

Melnyk, B. M., Fineout-Overholt, E. (2019). Evidence practice in nursing & healthcare: A guide to best practice (4th ed.). [Bookshelf]. Wolters Kluwer.

Miller, E. M., Louis-Jacques, A. F., Deubel, T. F., & Hernandez, I. (2018). One step for a hospital, ten steps for women: African American women's experiences in a newly accredited baby-friendly hospital. *Journal of Human Lactation*, *34*(1), 184-191. https://doi:10.1177/0890334417731077

Munn, A. C., Newman, S. D., Phillips, S. M., Mueller, M., & Taylor, S. N. (2018). Factors influencing southeastern U.S. mothers' participation in Baby-Friendly practices: A mixed-methods study. *Journal of Human Lactation, 34*(4), 821-834. https://doi.org/10.1177/0890334417750143

NYC, Health Insurance Link. (2018). *Pregnant*. https://www1.nyc.gov/site/ochia/find-what-fits/pregnant.page

New York State. (2009). *NY Public Health Law, Article 25. Title 1, §2505-the Breastfeeding Mothers' Bill of Rights, 2009.* https://www.health.ny.gov/publications/2028/

New York State Department of Health. (2012). *Infant feeding data, 2012*. https://www.health.ny.gov/community/pregnancy/breastfeeding/docs/2012_nys_breatfeeding_tables.pdfgov/publications/2028/

New York State Department of Health. (2014). *NYS health profile*. https://profiles.health.ny.gov/hospital/view/102944#maternity

New York State Department of Health. (2017, August). Obesity and related indicators: Bronx County 2013-2015. https://www.health.ny.gov/statistics/chac/chai/docs/obs_58.htm

New York State Department of Health. (2017*). Pregnancy risk assessment monitoring system (PRAMS) report, New York City, 2013*. https://www.health.ny.gov/statistics/prams/reports/tables/pramsannualreport2013.htm

New York State Department of Health. (2017). *Bronx County percentage of WIC infants breastfeeding at least 6 months.* https://www.health.ny.gov/statistics/chac/general/g62_58.htm

New York State Department of Health. (2019). *New York State (excluding NYC) health indicators by race/ethnicity, 2014-2016*. https://www.health.ny.gov/statistics/community/minority/county/restofnewyorkstate.htm

Office of Disease Prevention and Health Promotion. (2018). *Maternal, infant and child health.* https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives

Ogrinc, G., Davies, L., Goodman, D. Batalden, P., Davidoff, F., & Stevens, D. (2016). SQUIRE 2.0 (Standards for Quality Improvement Reporting Excellence): Revised publication guidelines from a detailed consensus process. *British Medical Journal Quality & Safety, 25*(12), 986-992. https://doi.org/10.1136/bmjqs-2015-004411

Olang, B., Heidarzadeh, A., Strandvik, B., & Yngve, A. (2012). Reasons given by mothers for discontinuing breastfeeding in Iran. *International Breastfeeding Journal*, *7*(1), 7–13. https://doi:10.1186/1746-4358-7-7

Olshansky, E. (2017). Social determinants of health. *American Journal of Nursing, 117*(12), 11. doi:10.1097/01.NAJ.0000527463.16094.39

Oniwon, O., Tender, J. A. F., He, J., Voorhees, E., & Moon, R. Y. (2016). Reasons for infant feeding decisions in low-income families in Washington, DC. *Journal of*

Human Lactation Association, 32(4), 704-710. https://doi.org/10.1177/0890334416653739

Pannucci, C. J., & Wilkins, E. G. (2010). Identifying and avoiding bias in research. *Plastic and Reconstructive Surgery, 126*(2), 619-625. https://doi:10.1097/PRS.0b013e3181de24bc

Parry, K., Taylor, E., Hall-Dardess, P., Walker, M., & Labbok, M. (2013). Understanding women's interpretations of infant formula advertising. *Birth: Issues in Perinatal Care*, *40*(2), 115-124. https://doi:10.1111/birt.12044

Patnode, C. D., Henninger, M. L., Senger, C. A., Perdue, L. A., & Whitlock, E. P. (2016). Primary care interventions to support breastfeeding: Updated evidence report and systematic review for the US Preventive Services Task Force. *Journal of the American Medical Association*, *316*(16), 1694-1705.

Piwoz, E. G., & Huffman, S. (2015). The impact of marketing of breast-milk substitutes on WHO-recommended breastfeeding practices. *Food and Nutrition Bulletin, 36*(4), 373-386. https://doi.org/10.1177/0379572115602174

Polit, D. F. (2010). *Statistics and data analysis for nursing research* (2nd ed.). [Bookshelf]. Pearson.

Powell, R., Davis, M., Anderson, A. K. (2014). Original article: A qualitative look into mother's breastfeeding experiences. *Journal of Neonatal Nursing*, *20*, 259-265. https://doi:10.1016/j.jnn.2014.04.001

Pugh, L. C., Serwint, J. R., Frick, K. D., Nanda, J. P., Sharps, P. W., Spatz, D. L., & Milligan, R. A. (2010). A randomized controlled community-based trial to

improve breastfeeding rates among urban low-income mothers. *Academy Pediatrics, 10*(1), 14-20

Reno, R. (2018). A pilot study of a culturally grounded breastfeeding intervention for pregnant, low-income African American women. *Journal of Human Lactation. 34*(3), 478-4848. https://doi.org/10.1177/890334418775050

Reeves, E. A., Woods-Giscombe, C. L. (2015). Infant-feeding practices among African American women: Social-ecological analysis and implications for practice. *Journal of Transcultural Nursing, 26*(3), 219-226. https://doi.org/10.11771043659614526244

Robinson, A., Davis, M., Hall, J., Lauckner, C., & Anderson, A. K. (2019). It takes and E-Village: Supporting African American mothers in sustaining breastfeeding through Facebook communities. *Journal of Human Lactation, 35*(3), 569-582. https://doi.org/10.1177/0890334419831652

Robinson, K., Fial, A., & Hanson, L. (2019). Racism, bias, and discrimination as modifiable barriers to breastfeeding for African American women: A scoping review of the literature. *Journal of Midwifery & Women's Health, 64*(6), 734-742. https://doi.org/10.1111/jmwh.13058

Save the Children Alliance. (1999). Meeting the nutritional needs of infants in emergencies: Recent experiences and dilemmas. *Report of an International Workshop*. *Institute of Child Health*. https://reliefweb.int/sites/reliefweb.int/files/resources/0489A910677B80FBC1256C5D00516176-stc-nutritional-nov99.pdf

Schindler-Ruwisch, J., Roess, A., Robert, R. C., Napolitano, M., Woody, E., Thompson, P., & Ilakkuvan, V. (2019). Determinants of breastfeeding initiation and duration among African American DC WIC recipients: Perspectives of recent mothers. *Women's Health Issues, 29*(6), 513-521. https://doi.org/10.1016/j.whi.2019.07.003

Sheehan, D., Krueger, P., Watt, S., Sword, W., & Bridle, B. (2001). The Ontario mother and infant survey: Breastfeeding outcomes. *Journal of Human Lactation, 17(*3), 211-219. doi:10.1177/089033440101700304

Sleezer, C. M., Russ-Eft, D., & Gupta, K. (2014). *Practical guide to needs assessment*. https://ebookcentral.proquest.com

Smith, J., & Noble, H. (2014). Bias in research. *Evidence-Based nursing, 17*(4), 100-101. https://doi:10.1136/eb-2014-101946

Stuebe, A. M., & Bonuck, K. (2011). What predicts intent to breastfeed exclusively? Breastfeeding knowledge, attitudes, and beliefs in a diverse urban population. *Breastfeeding Medicine, 6*(6), 413-420. https://doi:10.1089/bfm.2010.0088

Thomson, J. L., Tussing-Humphreys, L. M., Goodman, M. H., Landry, A., & Olender, S. E. (2017). Low rate of initiation and short duration of breastfeeding in a maternal infant home visiting project targeting rural, Southern, African American women. *International Breastfeeding Journal, 12*(15), 1-11. https://doi.org/10.1186/s13006-017-0108-y

Thurman, S. E., & Allen, P. J. (2008). Integrating lactation consultants into primary health care services: Are lactation consultants affecting breastfeeding success? *Pediatric Nursing, 34*(5), 419-425.

Taylor-Black, S. A., Mehta, H., Weiderpass, E., Boffetta, P., Sicherer, S. H., & Wang, J. (2014). Prevalence of food allergy in New York City (NYC) school children. *Annals of Allergy, Asthma & Immunology*, *112*(6), 554–556. https://doi:10.1016/j.anai.2014.03.020

U.S. Department of Health and Human Services. (2011). *The Surgeon General's Call to Action to Support Breastfeeding*. https://www.ncbi.nlm.nih.gov/books/NBK52682/

Terry, A. J. (2018). *Clinical research for the Doctor of Nursing Practice* (3rd ed.). [Bookshelf]. Jones & Bartlett.

UNICEF. (2017). *The global breastfeeding collective*. https://www.unicef.org/nutrition/index_98470.html

United States Census Bureau. (2017). *QuickFacts Bronx County (Bronx Borough), New York.* https://www.census.gov/quickfacts/bronxcountybronxboroughnewyork

United States Breastfeeding Committee. (2018). *About us: Diversity, equity, and inclusion.* http://www.usbreastfeeding.org/p/cm/ld/fid=199

Wargo, W. F. (2016). The history of infant formula: Quality, safety, and standard methods. *Journal of Association of Official Analytical Collaboration International, 99*(1), 7-11. https://doi:10.5740/jaoacint.15-0244

Weingarten, M., Paul, M., & Leibovici, L. (2004). Assessing ethics of trials in systematic reviews. *British Medical Journal, 328*(446), 1013-1014.

Witt, A. M., Smith, S., Mason, M. J., & Flocke, S. (2012). Integrating routine lactation consultant support into a pediatric practice. *Breastfeeding Medicine, 7*(1), 38-42. https://doi.org/10.1089/bfm.2011.003

Wolfberg, A. J., Michels, K. B., Shields, W., O'Campo, P., Bonner, Y., & Bienstock, J. (2004). Dads as breastfeeding advocates: Results from a randomized controlled trial of an educational intervention. *American Journal of Obstetrics and Gynecology, 191*, 708-712. https://doi.org/10.1016/j-ajog.2004.05.019

World Health Organization. (1991). *Indicators for assessing breastfeeding practices.* https://apps.who.int/iris/bitstream/handle/10665/62134/WHO_CDD_SER_91.14.pdf?sequence=1

World Health Organization (WHO). (2002). *55TH World Health Assembly. Infant and young child nutrition.* http:/apps.who.int/gb/archive/pdf_files/WHA55/ewha5525.pdf

World Health Organization. (2017). Guidelines: Protecting, promoting and supporting breastfeeding in facilities providing maternity and newborn services. *Geneva, CH: World Health Organization.* https://www.who.int/nutrition/publications/guidelines/breastfeeding-facilities-maternity-newborn/en/

World Health Organization. (2018). *Ten steps to successful breastfeeding.* https://www.who.int/nutrition/bfhi/ten-steps/en/

World Health Organization. (2020). *Infant and Young Child Feeding.. https://www.who.int/en/news-room/fact-sheets/detail/infant-and-young-child-feeding*

Yang, Z., & Huffman, S. L. (2013). Nutrition in pregnancy and early childhood and associations with obesity in developing countries. *Maternal & Child Nutrition, 9*(1), 105-119. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6860495/

Appendix A: Oxford University Press License Terms and Conditions

OXFORD UNIVERSITY PRESS LICENSE
TERMS AND CONDITIONS
Jan 10, 2021

This Agreement between Mrs. Ketty Floyd ("You") and Oxford University Press ("Oxford University Press") consists of your license details and the terms and conditions provided by Oxford University Press and Copyright Clearance Center.

License Number	4985480762010
License date	Jan 10, 2021
Licensed content publisher	Oxford University Press
Licensed content publication	Communication Theory
Licensed content title	Using Theory to Design Effective Health Behavior Interventions
Licensed content author	Fishbein, Martin; Yzer, Marco C.
Licensed content date	Jan 10, 2006
Type of Use	Thesis/Dissertation
Institution name	
Title of your work	Systematic Review for Barriers and Supportive Factors of Breastfeeding in the Non-Hispanic Black population (U.S.A.)
Publisher of your work	n/a
Expected publication date	Dec 2021
Permissions cost	0.00 USD
Value added tax	0.00 USD
Total	0.00 USD
Title	Systematic Review for Barriers and Supportive Factors of Breastfeeding in the Non-Hispanic Black population (U.S.A.)
Institution name	n/a
Expected presentation date	Dec 2021

Order reference number	4847620002604
Portions	figure 1 page 4
	Mrs. Ketty Floyd 252 S 10th Ave #2R
Requestor Location	
	MOUNT VERNON, NY 10550 United States Attn: Mrs. Ketty Floyd
Publisher Tax ID	GB125506730
Total	0.00 USD

Terms and Conditions

STANDARD TERMS AND CONDITIONS FOR REPRODUCTION OF MATERIAL FROM AN OXFORD UNIVERSITY PRESS JOURNAL

1. Use of the material is restricted to the type of use specified in your order details.
2. This permission covers the use of the material in the English language in the following territory: world. If you have requested additional permission to translate this material, the terms and conditions of this reuse will be set out in clause 12.
3. This permission is limited to the particular use authorized in (1) above and does not allow you to sanction its use elsewhere in any other format other than specified above, nor does it apply to quotations, images, artistic works etc that have been reproduced from other sources which may be part of the material to be used.
4. No alteration, omission or addition is made to the material without our written consent. Permission must be re-cleared with Oxford University Press if/when you decide to reprint.
5. The following credit line appears wherever the material is used: author, title, journal, year, volume, issue number, pagination, by permission of Oxford University Press or the sponsoring society if the journal is a society journal. Where a journal is being published on behalf of a learned society, the details of that society must be included in the credit line.
6. For the reproduction of a full article from an Oxford University Press journal for whatever purpose, the corresponding author of the material concerned should be informed of the proposed use. Contact details for the corresponding authors of all Oxford University Press journal contact can be found alongside either the abstract or full text of the article concerned, accessible from www.oxfordjournals.org Should there be a problem clearing these rights, please contact journals.permissions@oup.com
7. If the credit line or acknowledgement in our publication indicates that any of the figures, images or photos was reproduced, drawn or modified from an earlier source it will be necessary for you to clear this permission with the original publisher as well. If this permission has not been obtained, please note that this material cannot be included in your publication/photocopies.

8. While you may exercise the rights licensed immediately upon issuance of the license at the end of the licensing process for the transaction, provided that you have disclosed complete and accurate details of your proposed use, no license is finally effective unless and until full payment is received from you (either by Oxford University Press or by Copyright Clearance Center (CCC)) as provided in CCC's Billing and Payment terms and conditions. If full payment is not received on a timely basis, then any license preliminarily granted shall be deemed automatically revoked and shall be void as if never granted. Further, in the event that you breach any of these terms and conditions or any of CCC's Billing and Payment terms and conditions, the license is automatically revoked and shall be void as if never granted. Use of materials as described in a revoked license, as well as any use of the materials beyond the scope of an unrevoked license, may constitute copyright infringement and Oxford University Press reserves the right to take any and all action to protect its copyright in the materials.
9. This license is personal to you and may not be sublicensed, assigned or transferred by you to any other person without Oxford University Press's written permission.
10. Oxford University Press reserves all rights not specifically granted in the combination of (i) the license details provided by you and accepted in the course of this licensing transaction, (ii) these terms and conditions and (iii) CCC's Billing and Payment terms and conditions.
11. You hereby indemnify and agree to hold harmless Oxford University Press and CCC, and their respective officers, directors, employs and agents, from and against any and all claims arising out of your use of the licensed material other than as specifically authorized pursuant to this license.
12. Other Terms and Conditions:
v1.4

Questions? customercare@copyright.com or +1-855-239-3415 (toll free in the US) or +1-978-646-2777.

Appendix B: Caldwell et al. (2011) Framework

Questions for qualitative studies based on Caldwell framework		Article 1	Article 2	Article 3
1	Does the title reflect the content?			
2	Are the authors credible?			
3	Background and literature review			
4	Does the abstract summarize the key components?			
5	Is the literature review comprehensive and up to date?			
6	Is the aim clearly stated?			
7	Are all the ethical issues identified and addressed?			
	Methods			
	Data Analysis			
	Results			
	Discussion			
	Conclusions and Implications			
	Numerical assessment (maximum 36)			

AGREE REPORTING CHECKLIST

Appendix C: AGREE Reporting Checklist 2016

checklist intended to guide the reporting of clinical practice guidelines.

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA	Page #
DOMAIN 1: SCOPE AND PURPOSE		
1. OBJECTIVES *Report the overall objective(s) of the guideline. The expected health benefits from the guideline are to be specific to the clinical problem or health topic.*	☐ Health intent(s) (i.e., prevention, screening, diagnosis, treatment, etc.) ☐ Expected benefit(s) or outcome(s) ☐ Target(s) (e.g., patient population, society)	
2. QUESTIONS *Report the health question(s) covered by the guideline, particularly for the key recommendations.*	☐ Target population ☐ Intervention(s) or exposure(s) ☐ Comparisons (if appropriate) ☐ Outcome(s) ☐ Health care setting or context	
3. POPULATION *Describe the population (i.e., patients, public, etc.) to whom the guideline is meant to apply.*	☐ Target population, sex and age ☐ Clinical condition (if relevant) ☐ Severity/stage of disease (if relevant) ☐ Comorbidities (if relevant) ☐ Excluded populations (if relevant)	
DOMAIN 2: STAKEHOLDER INVOLVEMENT		
4. GROUP MEMBERSHIP *Report all individuals who were involved in the development process. This may include members of the steering group, the research team involved in selecting and reviewing/rating the evidence and individuals involved in formulating the final recommendations.*	☐ Name of participant ☐ Discipline/content expertise (e.g., neurosurgeon, methodologist) ☐ Institution (e.g., St. Peter's hospital) ☐ Geographical location (e.g., Seattle, WA) ☐ A description of the member's role in the guideline development group	
5. TARGET POPULATION PREFERENCES AND VIEWS *Report how the views and preferences of the target population were sought/considered and what the resulting outcomes were.*	☐ Statement of type of strategy used to capture patients'/publics' views and preferences (e.g., participation in the guideline development group, literature review of values and preferences) ☐ Methods by which preferences and views were sought (e.g., evidence from literature, surveys, focus groups) ☐ Outcomes/information gathered on patient/public information ☐ How the information gathered was	

	used to inform the guideline development process and/or formation of the recommendations	
6. TARGET USERS *Report the target (or intended) users of the guideline.*	☐ The intended guideline audience (e.g. specialists, family physicians, patients, clinical or institutional leaders/administrators) ☐ How the guideline may be used by its target audience (e.g., to inform clinical decisions, to inform policy, to inform standards of care)	
DOMAIN 3: RIGOUR OF DEVELOPMENT		
7. SEARCH METHODS *Report details of the strategy used to search for evidence.*	☐ Named electronic database(s) or evidence source(s) where the search was performed (e.g., MEDLINE, EMBASE, PsychINFO, CINAHL) ☐ Time periods searched (e.g., January 1, 2004 to March 31, 2008) ☐ Search terms used (e.g., text words, indexing terms, subheadings) ☐ Full search strategy included (e.g., possibly located in appendix)	
8. EVIDENCE SELECTION CRITERIA *Report the criteria used to select (i.e., include and exclude) the evidence. Provide rationale, where appropriate.*	☐ Target population (patient, public, etc.) characteristics ☐ Study design ☐ Comparisons (if relevant) ☐ Outcomes ☐ Language (if relevant) ☐ Context (if relevant)	
9. STRENGTHS & LIMITATIONS OF THE EVIDENCE *Describe the strengths and limitations of the evidence. Consider from the perspective of the individual studies and the body of evidence aggregated across all the studies. Tools exist that can facilitate the reporting of this concept.*	☐ Study design(s) included in body of evidence ☐ Study methodology limitations (sampling, blinding, allocation concealment, analytical methods) ☐ Appropriateness/relevance of primary and secondary outcomes considered ☐ Consistency of results across studies ☐ Direction of results across studies ☐ Magnitude of benefit versus magnitude of harm ☐ Applicability to practice context	
10. FORMULATION OF RECOMMENDATIONS *Describe the methods used to formulate the recommendations and how final decisions were reached. Specify any areas of*	☐ Recommendation development process (e.g., steps used in modified Delphi technique, voting procedures that were considered) ☐ Outcomes of the recommendation development process (e.g., extent to	

disagreement and the methods used to resolve them.	which consensus was reached using modified Delphi technique, outcome of voting procedures) ☐ How the process influenced the recommendations (e.g., results of Delphi technique influence final recommendation, alignment with recommendations and the final vote)	
11. CONSIDERATION OF BENEFITS AND HARMS *Report the health benefits, side effects, and risks that were considered when formulating the recommendations.*	☐ Supporting data and report of benefits ☐ Supporting data and report of harms/side effects/risks ☐ Reporting of the balance/trade-off between benefits and harms/side effects/risks ☐ Recommendations reflect considerations of both benefits and harms/side effects/risks	
12. LINK BETWEEN RECOMMENDATIONS AND EVIDENCE *Describe the explicit link between the recommendations and the evidence on which they are based.*	☐ How the guideline development group linked and used the evidence to inform recommendations ☐ Link between each recommendation and key evidence (text description and/or reference list) ☐ Link between recommendations and evidence summaries and/or evidence tables in the results section of the guideline	
13. EXTERNAL REVIEW *Report the methodology used to conduct the external review.*	☐ Purpose and intent of the external review (e.g., to improve quality, gather feedback on draft recommendations, assess applicability and feasibility, disseminate evidence) ☐ Methods taken to undertake the external review (e.g., rating scale, open-ended questions) ☐ Description of the external reviewers (e.g., number, type of reviewers, affiliations) ☐ Outcomes/information gathered from the external review (e.g., summary of key findings) ☐ How the information gathered was used to inform the guideline development process and/or formation of the recommendations (e.g., guideline panel considered	

	results of review in forming final recommendations)	
14. UPDATING PROCEDURE *Describe the procedure for updating the guideline.*	☐ A statement that the guideline will be updated ☐ Explicit time interval or explicit criteria to guide decisions about when an update will occur ☐ Methodology for the updating procedure	
DOMAIN 4: CLARITY OF PRESENTATION		
15. SPECIFIC AND UNAMBIGUOUS RECOMMENDATIONS *Describe which options are appropriate in which situations and in which population groups, as informed by the body of evidence.*	☐ A statement of the recommended action ☐ Intent or purpose of the recommended action (e.g., to improve quality of life, to decrease side effects) ☐ Relevant population (e.g., patients, public) ☐ Caveats or qualifying statements, if relevant (e.g., patients or conditions for whom the recommendations would not apply) ☐ If there is uncertainty about the best care option(s), the uncertainty should be stated in the guideline	
16. MANAGEMENT OPTIONS *Describe the different options for managing the condition or health issue.*	☐ Description of management options ☐ Population or clinical situation most appropriate to each option	
17. IDENTIFIABLE KEY RECOMMENDATIONS *Present the key recommendations so that they are easy to identify.*	☐ Recommendations in a summarized box, typed in bold, underlined, or presented as flow charts or algorithms ☐ Specific recommendations grouped together in one section	
DOMAIN 5: APPLICABILITY		
18. FACILITATORS AND BARRIERS TO APPLICATION *Describe the facilitators and barriers to the guideline's application.*	☐ Types of facilitators and barriers that were considered ☐ Methods by which information regarding the facilitators and barriers to implementing recommendations were sought (e.g., feedback from key stakeholders, pilot testing of guidelines before widespread implementation) ☐ Information/description of the types of facilitators and barriers that emerged	

	from the inquiry (e.g., practitioners have the skills to deliver the recommended care, sufficient equipment is not available to ensure all eligible members of the population receive mammography) ☐ How the information influenced the guideline development process and/or formation of the recommendations	
19. IMPLEMENTATION ADVICE/TOOLS *Provide advice and/or tools on how the recommendations can be applied in practice.*	☐ Additional materials to support the implementation of the guideline in practice. For example: o Guideline summary documents o Links to check lists, algorithms o Links to how-to manuals o Solutions linked to barrier analysis (see Item 18) o Tools to capitalize on guideline facilitators (see Item 18) o Outcome of pilot test and lessons learned	
20. RESOURCE IMPLICATIONS *Describe any potential resource implications of applying the recommendations.*	☐ Types of cost information that were considered (e.g., economic evaluations, drug acquisition costs) ☐ Methods by which the cost information was sought (e.g., a health economist was part of the guideline development panel, use of health technology assessments for specific drugs, etc.) ☐ Information/description of the cost information that emerged from the inquiry (e.g., specific drug acquisition costs per treatment course) ☐ How the information gathered was used to inform the guideline development process and/or formation of the recommendations	
21. MONITORING/ AUDITING CRITERIA *Provide monitoring and/or auditing criteria to measure the application of guideline recommendations.*	☐ Criteria to assess guideline implementation or adherence to recommendations ☐ Criteria for assessing impact of implementing the recommendations ☐ Advice on the frequency and interval of measurement ☐ Operational definitions of how the	

	criteria should be measured	
DOMAIN 6: EDITORIAL INDEPENDENCE		
22. FUNDING BODY *Report the funding body's influence on the content of the guideline.*	☐ The name of the funding body or source of funding (or explicit statement of no funding) ☐ A statement that the funding body did not influence the content of the guideline	
23. COMPETING INTERESTS *Provide an explicit statement that all group members have declared whether they have any competing interests.*	☐ Types of competing interests considered ☐ Methods by which potential competing interests were sought ☐ A description of the competing interests ☐ How the competing interests influenced the guideline process and development of recommendations	