

BEST PRACTICE RECOMMENDATIONS TO SUPPORT BREASTFEEDING
AMONG LOW-INCOME WOMEN
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BREASTFEEDING SUPPORT AMONG LOW-INCOME WOMEN

Abstract

This paper explores the most current research on the identified gap in breastfeeding initiation and duration rates among low-income mothers when compared with the general population. Women that fall into the “low-income” bracket and who participate in the WIC program are nearly 12% less likely to initiate breastfeeding than the general population, and less likely to continue for a year (Hedberg, 2013). The articles examined discuss the barriers and supportive measures that contribute to or hinder breastfeeding success among low-income prenatal and postpartum mothers. The articles focus on providers knowledge and attitudes toward breastfeeding in relation to the promotion of breastfeeding among low-income women, interventions to extend the duration of breastfeeding once initiated, strategies to encourage best-practice uptake among nursing staff, ways to motivate low-income women to breastfeeding over formula feed, and the benefits of Women, Infants, and Children (WIC) Food and Nutrition Service involvement. These articles further discuss the impact women’s confidence regarding breastfeeding has on its success, as well as low-income mother’s experience and perceptions of both professional and peer breastfeeding support. Beyond the review of current literature, this paper will identify best-practice recommendations, a proposed implementation plan, and a proposed evaluation of the implementation process.

CHAPTER 1

Introduction

Statement of Purpose

The purpose of this thesis is to develop best practice recommendations to better provide breastfeeding support to the low-income population of prenatal and postpartum mothers. In this thesis, recommendations for best practice will be created using evidence-based research that discusses barriers and supportive measures that impact prenatal and postpartum women's decision to breastfeed their infants. Both the background of issue importance and relevance of the topic as it relates to nursing will be provided, then evidence-based research as it pertains to breastfeeding support of the low-income population will be discussed. After reviewing background, relevance of the topic as it relates to nursing, and evidence-based research findings, a proposed best practice recommendation will be outlined with the objective of improving breastfeeding support provided by nurses to the low-income population of prenatal and postpartum mothers.

Background of Issue Importance

Research has shown, breast milk provides all of the essential nutrients an infant needs for healthy development (Victora, 2016); additionally, breastfeeding also supplies the infant with antibodies to protect them from many childhood illnesses (Victora, 2016). Breastfeeding has also been shown to reduce the mother's risks of ovarian and breast cancer, postpartum depression, and type II diabetes (Victora, 2016).

The "Healthy People" campaign was created in 2010 by the U.S. Department of Health and Human Services as a means of providing science-based, 10-year national objectives for improving the health of all Americans. As part of their mission to improve health across the

nation, they aim to “identify nationwide health improvement priorities”, and also “increase public awareness and understanding of the determinants of health, disease, and disability and the opportunities for progress” (U.S. Department of Health and Human Services, 2010, p.3). One of the “Maternal, Infant, and Child” centered goals of this campaign is focused on increasing the proportion of infants who are ever breastfed. As provided by the Healthy People 2020 website, 74% of infants born in 2006 were ever breastfed. In 2010, the goal was set to reach 75% and 74% success was achieved - just shy of achieving their 75% goal (U.S. Department of Health and Human Services, 2010).

Currently, the campaign has the goal set for 81.9% of infants ever breastfed by the year 2020 (U.S. Department of Health and Human Services, 2010).

Significance of the Problem

In a systematic review conducted by Ip et al. (2007), 43 studies were analyzed to assess the relationship between breastfeeding and infant outcomes. In the same review by Ip et al. (2007), 43 primary studies were identified that assessed the relationship between breastfeeding and maternal health outcomes. Ip et al. (2007) concluded that a history of breastfeeding was linked with a reduced risk of acute otitis media, non-specific gastroenteritis, obesity, type 1 and 2 diabetes, severe lower respiratory tract infections, asthma (young children), atopic dermatitis, childhood leukemia, sudden infant death syndrome (SIDS), and necrotizing enterocolitis among infants. For the maternal outcomes analyzed, Ip et al. (2007) determined that a history of lactation was associated with a reduced risk of developing type 2 diabetes, as well as breast and ovarian cancers.

Breastfeeding has been found to not only impact mother and infant positively, but it also carries societal benefit. Hunt (2006) claims that there is a major advantage to society in the

economic benefit of breastfeeding on the nation, the healthcare system, and on individual families; it has been found that babies who are breastfed have fewer health problems than babies who are formula fed with consequent savings in medical treatment and hospital admissions (Hunt, 2006). The World Health Organization (2017) reported that worldwide, one in 13 formula-fed babies are admitted to the hospital in their first year of life, while only one in 200 breastfed babies are admitted. Additionally, in 2010 the American Academy of Pediatrics published a study claiming that if 90% of new mothers could follow medical experts' recommendation to exclusively breastfeed their infants for six months, the U.S. might save as much as \$13 billion in healthcare and other costs per year (Bartick & Reinhold, 2010).

Although breastfeeding initiation rates have risen dramatically in the United States in the last decade, duration remains less than optimal clinically; this is especially true for low-income women (Meehan, 2008). For purposes of this thesis, "low-income" has been defined using the WIC Income Standard for Eligibility; According to the United States Department of Agriculture, applicants must have income at or below an income level set by the State agency in order to be eligible for WIC benefits (United States Department of Agriculture, 2017). The State agency's income standard is required to be between 100 percent of the Federal poverty guidelines (issued each year by the Department of Health and Human Services), but cannot be more than 185 percent of the Federal poverty income guidelines (United States Department of Agriculture, 2017). Women that fall into the "low-income" bracket and who participate in the WIC program are nearly 12% less likely to initiate breastfeeding than the general population, and less likely to continue for a year (Hedberg, 2013). Women in low-income areas often live within a 'bottle-feeding culture' and acquire negative feelings towards breastfeeding, with higher expectations of breastfeeding failure and few role models (Entwistle, Kendall, & Mead, 2007).

Breastfeeding is a learned skill that many women will encounter difficulty with initially (Victora, 2016). Healthcare providers that support breastfeeding and provide trained breastfeeding counselors encourage higher rates of breastfeeding among new mothers (Victora, 2016).

Summary

The purpose of this thesis is to develop best practice recommendations to better provide breastfeeding support to the low-income population of prenatal and postpartum mothers. Per Baumgartel and Spatz (2013), the women that fall into the low-income bracket are defined as having an income at or below 185% of the U.S. Poverty Income Guidelines, often have low education achievement, lack support, and lack access to resources. As will be discussed further in this thesis, women expect their providers and nurses to guide their healthcare decisions and practices; however, many women are not being educated about breastfeeding or feel that they are not getting adequate support from their healthcare providers (Hedberg, 2013). The intended purpose of this research review is to discover what has been effective in increasing the breastfeeding initiation and duration rates, as well as identify areas that can be approved upon; with this information, evidence informed recommendations can be created to promote breastfeeding among low income women.

CHAPTER 2

Review of Literature

The research for this thesis was conducted through searches on CINAHL and PubMed databases for work published between the years 2006-2016 in peer-reviewed journals; searches were run using the keyword “breastfeeding”, with subheadings “support” and “low-income”. Twelve articles were selected to be used for this review based on a variety of interventions examined, specificity of recommendations (if making them), and the type of study design used to obtain their information. The results from these evidence-based articles will be applied to the proposed best practice to identify ways of better providing breastfeeding support to the low-income population of prenatal and postpartum mothers.

Facilitators, Barriers, and Interventions: Breastfeeding among Low Income Women

According to Entwistle, Kendall, and Mead (2007), midwives overestimate their knowledge and practical abilities in supporting women to breastfeed successfully. In 1997 the World Health Organization/UNICEF created a Baby Friendly Initiative (BFI) breastfeeding management course as a way to narrow the theory-practice gap. Entwistle et al. (2007) conducted a study to determine whether attending a WHO/UNICEF Baby Friendly Initiative (BFI) course in breastfeeding management would improve midwives’ knowledge of, and attitudes toward, breastfeeding among low-income women. For this study, a pre- and post-test quasi-experimental design was used to compare the knowledge of and attitudes toward breastfeeding of 23 midwives who did attend the course with those of 37 midwives who did not using questionnaires related to BFI guidelines, pre- and post- BFI course. Entwistle et al. (2007) identified a lack of self-confidence in the healthcare professional’s ability to promote breastfeeding among low-income women, along with findings that despite previous trainings and professional experience, half of

the midwives in the sample of 54 reported feeling unprepared to support breastfeeding among women even after having taken the BFI course for this research. Entwistle et al.'s (2007) research shows that although having previous trainings and professional experience, at least half of those expected to be able to provide breastfeeding support do not feel confident in their ability to do so; in addition, the tested BFI course did not prove to be very effective in improving their levels of confidence. In conclusion, the study was only able to identify a limited effect of midwife attendance of the BFI course on their ability to promote and support breastfeeding among low-income women. Study strengths lie in their use of a comparison group to evaluate BFI course effectiveness against, and study participant drop outs were accounted for. The researchers used statistical analysis to evaluate data using chi-squares and Fisher's Exact test for categorical variables. Limitations related to the relatively small sample size make generalizing results difficult; additionally, the BFI course did not specifically address or deal with the needs of low-income women.

Meehan et al. (2008), sought to determine if the provision of an electric pump to low-income working women would facilitate their ability to continue breastfeeding and impact their decision on when they requested infant formula from Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Meehan et al. (2008) study utilized a quasi-experimental design with 72 WIC eligible mothers; employers were provided information on breastfeeding support in the workplace. From the 72, a subsample of 39 mothers received an electric pump upon their return to full-time work. This group of mothers who received the pumps was compared with 33 mothers on the wait list for pumps which was used as a control group. The study evaluated the length of time that each group of breastfeeding mothers went before requesting formula from WIC. The results of this study (Meehan et al., 2008) showed that a

statistically significant number of women who received an electric pump (even if delayed) when returning to work did not request WIC formula at 6 and 12 months. This study showed evidence that supported providing loans of electric pumps to women receiving WIC who are returning to work and who wish to breastfeed will significantly delay their request for formula (Meehan et al., 2008). This study's strengths included its use of clearly defined inclusion and exclusion criteria in defining its sample; also, t-tests were performed and all statistical analyses used a p-value of 0.05. Study limitations include the inability to use random assignment, as well as their reliance solely on formula issuance from WIC to determine when breastfeeding was initiated and used lack of formula issuance as an indicator of high amounts of breastfeeding.

Stockdale et al.(2008) conducted a mixed methods study to assess the effectiveness of midwives' breastfeeding instruction in a sample of 182 breastfeeding women. In this study, Stockdale et al. (2008) aimed to create and test their breastfeeding motivational instructional measurement scale (BMIMS) in order to explore the value and confidence that breastfeeding mothers experience when receiving professional breastfeeding support. Through literature review of human motivation, four motivational theories were incorporated into creating the BMIMS – task value, goal theory, self-efficacy theory, and attribution theory (Stockdale et al., 2008); once these four theories were identified, Stockdale et al. (2008) created a 51-item scale that addressed all four motivational theories – the BMIMS. Both first-time and non-first time mothers made up the sample of 182 women who had initiated breastfeeding and were also receiving post-natal breastfeeding support from midwives in the hospital or community (Stockdale et al., 2008); the women that were gathered through convenience sampling agreed to participate completed the 51-item BMIMS questionnaire (Stockdale et al., 2008). Stockdale et al. (2008) used factor loading analysis and found that both first time and experienced mothers

perceived their midwife support to be inadequate; the perceived lack of support was the factor in which the women reportedly felt the strongest with highest scoring. Stockdale et al.(2008) claim, "maternal confidence is most fragile and attrition highest when women lack expectancy for success and perceive a lack of relevant instruction" (p.33). This study revealed that there is an imbalance between the value and expectancy for success (confidence) that women face with regard to breastfeeding. Strengths of the research done by Stockdale et al.(2008) include not only the use of grounded theory ,which allowed for constant analysis of data, but also factor analysis was used in development of the research questionnaire. The use of convenience sampling in gathering participants presents a limitation to this study; additionally, the sample was selected from one single hospital site so the transferability is limited.

The translation of information from breastfeeding theory to applying it in practice is a process that was further researched by Matthew-Maich, Ploeg, Jack, and Dobbins (2012). The barrier that they were exploring was breaks in the continuum of best practice guideline uptake and ways that frontline leaders have shown to overcome that barrier. Matthew-Maich et al.'s (2012) research aimed to explore the processes and strategies used by 'frontline leaders' to support the uptake of the Breastfeeding Best Practice Guideline by nurses in maternity care practice settings through the use of constructivist grounded theory. The study used criterion-based, negative, purposeful, and theoretical case sampling to recruit 58 health professionals and 54 new mothers from three hospitals in Ontario, Canada (Matthew-Maich et al., 2012); interviews, field notes, and documents were constantly compared for analysis and rigor (Matthew-Maich et al., 2012). In conclusion, it was found that if an organization aspires to put Best Practice Guidelines (BPG) into practice they must invest in frontline leaders (Matthew-Maich et al., 2012). Emphasis was placed on the discovered themes of interprofessional,

organizational, and interorganizational partnerships, as well as attention to individual beliefs and attitudes, being vital to practice uptake and sustainability (Matthew-Maich et al., 2012). Findings from Matthew-Maich et al. (2012) reveal frontline leadership as being central to breastfeeding BPG uptake; this adds new dimension to the current knowledge-translation model that views leaders as important but not central to BPG uptake. It was found that nurses getting feedback in the form of client outcomes considerably supported the uptake of the BPG's (Matthew-Maich et al., 2012). The frontline leaders facilitated providing the feedback to nurses through working with them at the bedside to ensure they saw the impact of the new practices, which created a strong association for nurses between the BPG and positive client outcomes (Matthew-Maich et al., 2012). The authors did address the possibility of social desirability bias and recall bias that were minimized by "triangulating multiple data sources and types and using sites that implemented the BPG within the -previous two years" (Matthew-Maich et al., 2017, p.1767). Secondly, all of the nurse participants in the study were women making transferability limited. In spite of the mentioned limitations, the study's use of diverse contexts, multisite and differing uptake outcomes enhances transferability. Lastly, all themes or theories drawn from data were congruent with the quotes and portrayals given by participants.

Rempel and McCleary (2012) completed a study to evaluate the effectiveness of the breastfeeding Best Practice Guidelines (BPG) for Nurses -2003 recommendations in the Healthy Babies/Healthy Children program of a regional public health agency in southern Ontario. Rempel and McCleary (2012) addressed the idea that healthcare professionals often feel unprepared to provide breastfeeding support; this study used a pre- and post-design with questionnaires intending to examine whether the BPG instruction positively impacted the nurse's beliefs about breastfeeding and increased breastfeeding duration among the low-income mothers

they instructed. At a regional public health agency in Ontario, Canada, a BPG pre-implementation questionnaire and a post-implementation questionnaire was completed by 17 nurses from the Healthy Babies/Healthy children program; to examine the impact on new mothers, a questionnaire was provided to 90 women pre-BPG implementation to provide a baseline, then again to a second cohort of 141 mothers post-BPG implementation (Rempel & McCleary, 2012). The research team, along with a lactation consultant from the health agency's BPG implementation committee, created the questionnaires that were administered to the nurses and the mothers; the questionnaire was not pilot tested, but was edited for grammar and clarity based on feedback from ethics review committee (Rempel & McCleary, 2012). It was found in the end that implementation of the breastfeeding BPG had only a small effect on maternal breastfeeding intentions and breastfeeding related beliefs held by the nurses (Rempel & McCleary, 2012). In addition, it was reported that nurse's beliefs increased about pacifier use and formula supplementation having a great impact on breastfeeding, however maternal pacifier use and formula supplementation did not decrease (Rempel & McCleary, 2012). In the BPG it states that supplementing and pacifier use may not cause breastfeeding cessation but rather be responses to the problems that lead to breastfeeding cessation such as social norms to manage infant crying and hunger; therefore, nurses should focus less on convincing mothers to avoid these practices, and more on improving breastfeeding management (Rempel & McCleary, 2012). Nurses increased their breastfeeding BPG knowledge with respect to breastfeeding beliefs and actions, but their self-reported confidence of breastfeeding support did not change (Rempel & McCleary, 2012). An area where nurses expressed consistently lower confidence in both pre- and post- instruction was regarding managing breastfeeding difficulties and formula supplementation (Rempel & McCleary, 2012). One strength possessed by this study was in the detail provided in

the “methods” and explaining how information was gathered, research assistants trained, and how data was collected. Limitations include the assessment questionnaire being created by the researchers and never pilot tested before use in the study; also, of all new mothers approached and asked to participate, only one-third agreed resulting in a sample that may not truly be representative and the findings less generalizable.

The Joanna Briggs Institute’s completed a systematic review of 31 qualitative papers to explore women’s perceptions and experiences of peer or professional breastfeeding support; the review’s intent was to ultimately synthesize the evidence to identify the differences between peer and professional support and what women find “supportive” (Joanna Briggs Institute, 2012, p.133). In the Joanna Briggs Institute’s 2012 “Best Practice Information Sheet”, it is indicated that although breastfeeding has significant health benefits for both infants and their mothers, rates of breastfeeding continue to remain lower than recommended. It was concluded from the synthesis of studies that breastfeeding support occurs along a continuum from authentic presence (effective) to ineffective disconnected encounters (Joanna Briggs Institute, 2012). The interventions found to be most ineffective were giving standardized advice that is not appropriate to a patient’s situation, and what was also deemed “disconnected encounters” which are perceived rushed and too busy with other patient’s and tasks to be able to spend the time needed (Joanna Briggs Institute, 2012). The disconnected encounters are considered an approach that inhibits learning and leads to women lacking confidence, being less likely to sustain breastfeeding. The type of interaction and instruction found to be most effective were those in which the healthcare professional creates a trusting relationship and sense of connectedness between the woman and supporter, while the supporter makes their availability explicit in a genuine/sincere way and there is rapport built (Joanna Briggs Institute, 2012). In addition, the

most effective instructional approach was that of a “facilitative approach”; with the facilitative approach, there is interaction and dialogue between the “learner” and the “teacher”, not a one-way dialogue (Joanna Briggs Institute, 2012). The women in the study indicated that they valued practical help through demonstrating techniques and observing feedings (Joanna Briggs Institute, 2012). Most of the studies that were used were USA or UK based which limit generalizability to other countries. Additionally, it was recognized that most of the papers that were included in this review included “relatively limited discussion of theoretical or conceptual perspectives” (Joanna Briggs Institute, 2012, p.134). This review clearly supported conclusions and themes drawn from the papers reviewed. The review also addressed clarity, credibility, and methodology of research included in the review to ensure it was based on sound research.

Hedberg’s (2013) systematic review aimed to identify barriers to breastfeeding in order to recommend guidelines for the WIC population. Hedberg (2013) aimed to determine efficacy of peer counseling, pre-and postpartum education, in-hospital breastfeeding support, and WIC focus shifting from formula to breastfeeding promotion among the families served by the WIC program. The results of the top barriers to breastfeeding identified in the WIC population were sorted into five categories: lack of support inside/outside the hospital, returning to work, practical issues, WIC-related issues, and social/cultural barriers (Hedberg, 2013). Hedberg’s review (2013) also found that interventions that resulted in positive breastfeeding outcomes in the WIC population included peer counseling, improved communication between hospital lactation consultants and WIC staff, and breast-pumps available by loan. This review used clear search criteria and provided key search terms when searching CINAHL, PubMed, and Cochrane Library databases to gather research to be a part of this systematic review; there was also clear inclusion and exclusion criteria used to hone in on the research most pertinent to this review,

which further strengthened Hedberg's (2013) recommendations. Once the pertinent articles were identified, they graded the articles according to Evans' hierarchy of evidence and selected the top 24 for the review. This review contained limited studies testing interventions that would promote breastfeeding in the WIC population, which poses a limitation. Additionally, most of the evidence used in this review was descriptive; more randomized control trials would be needed to test for specific breastfeeding interventions tailored to WIC participants in order to develop stronger evidence to formulate clinical recommendations.

Fornasaro-Donahue, Tovar, Sebelia, and Greene (2014) conducted a mixed-methodological descriptive study using surveys and interviews to assess the cost of infant formula, explore mothers' perceptions of formula cost, and assess whether cost influences the decision to breastfeed. It has been theorized that women enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) are less likely to breastfeed compared with non-participants (Fornasaro-Donahue et al., 2014); Fornasaro-Donahue et al. (2014) speculated that this could be related to the program offering participants free formula. Although free, the amount of formula supplied by WIC is often insufficient to cover the infant's nutritional needs entirely; thus, mothers will ultimately need to purchase extra formula in addition to what is provided by the WIC program. Fornasaro-Donahue et al. (2014) concluded that non-breastfeeding mothers were spending an extra \$46 a month on average to purchase formula that was needed beyond the formula supplied by WIC. For mothers intending to formula feed, this cost was perceived as high, but did not influence them to change their decision from formula to breastfeed (Fornasaro-Donahue et al., 2014). For mothers who already intended to breastfeed, cost information was perceived as an additional motivation (Fornasaro-Donahue et al., 2014). Before mothers decide to breastfeed or formula feed their infants, mothers may not be

aware of the additional financial responsibility of purchasing extra formula each month (Fornasaro-Donahue et al., 2014). All participants that made up the sample of mothers in this study were single and 86% were white (non-Hispanic), which makes generalizability of the findings to other races limited. Another limitation that this study posed was in relation to the small sample size of 30 new mothers; further studies with larger population sizes should be performed to enhance the credibility of this research's findings. The study was however strengthened by the many quotes from participants that were provided to support the themes and categories for why mothers chose to breastfeed or formula feed; a table of key themes and corresponding quotations from interviews was provided as further support; the exploratory nature of the study was appropriate in the attempt at researching the issue at hand. Fornasaro-Donahue et al. (2014) found that cost information was perceived as an additional motivation to mothers intending to breastfeed.

A cross-sectional design study by Dunn, Kalich, Fedrizzi, and Phillips (2015) was used to assess the barriers and positive contributors to breastfeeding initiation and duration in Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) participants using the social ecological model. The results of their surveys found that there were statistically significant differences in beliefs toward breastfeeding between women who ever breastfed and women who never breastfed (Dunn et al., 2015). Women who had breastfed were more likely to agree that breastfeeding assists with losing baby weight, believed babies fed breast milk are less likely to get sick, and believed breastfeeding helps mothers bond with their babies more quickly than formula feeding (Dunn et al., 2015). Breastfeeding duration was significantly related to employment status; among women who breastfed for 6 months or longer, 15% were employed full-time, 30% worked part-time, and 55% indicated "other" such as unemployed or stay-at-

home mother (Dunn et al., 2015). The factors effecting breastfeeding initiation and continuation were found to be primarily influenced at the individual level of the social ecological model but also suggested influences existing at the interpersonal (family and friends), community (social networks), and organizational levels as well (Dunn et al., 2015). The top reasons cited for breastfeeding cessation in the study were mainly at the individual level; for example, the women who breastfed for less than 6 months were more likely to report that they felt they made too little breast milk and that pain was a factor in their decision to discontinue breastfeeding (Dunn et al., 2015). Statistical analysis was used to compare categorical variables between groups using sample t-tests, chi-squared analysis; the researchers also performed statistical analyses using SPSS Statistics 20 and SAS Version 9.2 software which strengthens the study findings. The results of this study were reported consistent with findings from other qualitative and quantitative research and the studies were cited, thus further confirming applicability of the findings and reliability. The possibility for recall bias may have influenced the results of the study as some of the data collected were of retrospective accounts of breastfeeding experiences for a portion of the participants (Dunn, et al., 2015). Another limitation presented by this study relates to the generalizability of results to other non-white populations as the majority of their sample group was white women (Dunn et al., 2015).

Metallinos-Katsaras, Brown, and Colchamiro (2015) aimed to determine whether the degree of exposure to WIC services is associated with breastfeeding initiation and duration. This longitudinal study found that WIC entry during first trimester averaged 10-32% greater likelihood of breastfeeding initiation than those entering during third trimester (Metallinos-Katsaras et al., 2015). Women who entered WIC during their second trimester averaged 14-23% greater likelihood to initiate breastfeeding than those entering during their third trimester

(Metallinos-Katsaras et al., 2015). The large sample size utilized for this study enhances the research findings; 122,506 women enrolled in the Massachusetts WIC program were gathered and assessed over a span of nine years. Additionally, this research is one of the few studies that examined association between breastfeeding initiation in addition to duration. Metallinos-Katsaras et al. (2015) found that women who entered WIC during the prenatal period breastfed for significantly longer periods of time than women who joined WIC postpartum (average of 1.6-3 weeks longer). This study showed that WIC participation is strongly associated with breastfeeding initiation/duration among mothers who had previous pregnancies, according to the findings it can be implied that first time mothers may need more or different support for breastfeeding (Metallinos-Katsaras et al., 2015). Due to the use of WIC records for data collection in this study, exclusivity of breastfeeding compared to mixed-feeding was not identifiable as that information was not included in the records. Lastly, the data was not collected for research purposes, but rather for programmatic purposes, which lends itself to measurement error (Metallinos-Katsaras et al., 2015).

Gregory, Gross, Nguyen, Butz, and Johnson (2016) conducted a quasi-experimental study with propensity scoring matching within a cohort study in an effort to compare breastfeeding outcomes between a group of WIC participants with a matched group of income-eligible non-WIC participants; in total, 743 mothers participated and made up the study sample. The purpose of this study was to explore the impact that WIC enrollment has on breastfeeding initiation and duration. A strong association was found between WIC participation and breastfeeding at 3 months postpartum when participating mothers were surveyed (Gregory et al., 2016). This strong association is suggestive that WIC may provide critical breastfeeding support; this result stands in contrast to previous literature suggesting that WIC has a negative impact on breastfeeding

outcomes (Gregory et al., 2016). Breastfeeding factors that influenced initiation and duration included: prenatal breastfeeding intentions, attitudes towards breastfeeding, and perceived social support for breastfeeding (Gregory et al., 2016). Gregory et al. (2016) determined that unlike other health behaviors which can be adopted at various time points, breastfeeding must be initiated at birth and continuously supported to be successful. Focus on early prenatal WIC enrollment and counseling is critical (Gregory et al., 2016). Increased coordination between hospitals and WIC is required to ensure that all women have continuous access to high-quality lactation support in the first weeks postpartum (Gregory et al., 2016). This particular study was limited by the sample being universally literate, primarily white (non-Hispanic), and English speaking; all of which are not consistent characteristics of WIC program participants as a whole (Gregory et al., 2016). Additionally, the tool used for data collection was one that was self-developed and not validated prior to research, which limits the results.

Oniwon, Tender, He, Voorhees, and Moon, (2016) used surveys to obtain descriptive data to assess factors that may influence breastfeeding decisions, identify and assess barriers to breastfeeding, and assess the effects that social and health care personnel support has on breastfeeding initiation. Through the surveys, it was determined that physicians were cited most frequently as the person who influenced mothers' breastfeeding decision, yet were infrequently identified as helping in the hospital or after hospital discharge (Oniwon et al., 2016). Almost 25% of participants received no prenatal education or spoke only with friends/family about breastfeeding, almost 75% reported that their prenatal medical provider (OB/midwife) did not discuss breastfeeding with them (Oniwon et al., 2016). The majority of participants in the study intended to exclusively breastfeed for an average of 8.5 months, but most did not reach their breastfeeding goal (Oniwon et al., 2016). The top two reasons identified for stopping

breastfeeding were: “Perceived insufficient milk supply” and “maternal pain” (Oniwon et al., 2016). It was suggested that as providers receive limited breastfeeding education, they would benefit from more lactation education to better provide direct assistance/support in managing common breastfeeding challenges (Oniwon et al., 2016). Prenatal education, encouragement, and support for exclusive breastfeeding in the hospital could help women reach their breastfeeding goals. The top two identified reasons for shorter breastfeeding duration could be addressed by improved breastfeeding education and lactation support (Oniwon et al., 2016). Limitations of the research included the reliance on the mothers’ recollection about their infant feeding practices, as well as the predominantly African American sample which limits generalizability.

Conclusion

The articles reviewed in this chapter addressed common breastfeeding barriers, interventions to promote breastfeeding initiation and duration, and their link to WIC enrollment status among low-income prenatal and postpartum mothers. The twelve articles varied from qualitative analyses to systematic reviews and included both small and large sample sizes. The literature indicated that breastfeeding has a positive impact on mother, baby, and a major advantage to society in the economic benefit of breastfeeding on the nation. Babies who are breastfed have fewer health problems than babies who are formula fed with consequent savings in medical treatment and hospital admissions (Hunt, 2006). Overall results of the articles indicated that various barriers are present that are causing low-income postpartum mothers to not initiate or breastfeed as long as women who are not WIC eligible. As previously mentioned, unlike other health behaviors which can be adopted at various time points, breastfeeding must be initiated at birth and continuously supported in order to be successful (Gregory et al., 2016).

It would also be beneficial for future research to focus on exploring breastfeeding intentions while the women are still pregnant; examining intent while still pregnant may provide further information related to barriers and motivators of breastfeeding. More randomized control trials testing breastfeeding interventions tailored specifically for WIC participants are needed. Also, there is a shortage of research that directly examines the effect WIC enrollment has on breastfeeding initiation and duration (Metallinos-Katsaras, Brown, & Colchamiro, 2015). What has been shown effective include the availability of electronic breast pumps, peer counseling, early involvement in WIC, improved communication between hospital lactation consultants and WIC staff, use of frontline leaders to promote uptake of best-practice among healthcare staff, an authentic presence from healthcare providers, improved breastfeeding education and lactation management among providers, and the mother's perceived social support for her breastfeeding. Based on this review of existing literature, evidence-based best practice recommendations are needed to assist nurses and other relevant health care professionals effectively provide breastfeeding support to the low-income population of prenatal and postpartum mothers.

CHAPTER 3

Best Practice Recommendations: Support Breastfeeding in Low-income Population

The purpose of this thesis was to create informed best practice recommendations to better provide breastfeeding support to the low-income population of prenatal and postpartum mothers. As shown in Table 1, this chapter details the proposed best practice recommendations to help nurses and other health care professionals provide low-income mothers the necessary support to initiate and continue breastfeeding their infants.

The literature reviewed in the previous chapter detailed important information regarding the common breastfeeding barriers, interventions, and difficulties that impact low-income prenatal and postpartum mothers. As extensive research has shown, mothers and other caregivers require active support in order to establish and sustain appropriate breastfeeding practices (World Health Organization, 2017). All healthcare workers who care for women and their children after the perinatal period play a key role in sustaining breastfeeding; the problem is that many healthcare providers cannot fulfill this role effectively as they have not been trained to do so (United Nations Children's Fund, 1993). The review of literature also detailed the positive impact on breastfeeding rates that comes from educating both patients and health care professionals regarding the support needed in order to breastfeed successfully. When health care professionals received the necessary education and direction, the encouragement and support provided to new breastfeeding mothers increased the rate of initiation and duration (Oniwon et al., 2016). Furthermore, Stockdale et al. (2008) reported that mothers who felt supported by her healthcare provider in the decision to breastfeed were found to have positive impacts on breastfeeding success.

Table 1

Best Practice Recommendations for Breastfeeding Support among Low-Income Women

Recommendation	Rationale	References	Level of Evidence
Provision of Electronic Pumps on Loan	<ul style="list-style-type: none"> • Providing electronic pumps on loan is effective in supporting breastfeeding duration among women returning to work who wish to continue breastfeeding. 	<p>Meehan, K., Harrison, G., Afifi, A., Nickel, N., Jenks, E., & Ramirez, A. (2008). The association between an electric pump loan program and the timing of requests for formula by working mothers in WIC. <i>Journal of Human Lactation</i>, 24(2), 150-158. doi:10.1177/0890334408316081</p>	Level III
		<p>Hedberg, I. (2013). Barriers to breastfeeding in the WIC population. <i>International Breastfeeding Journal</i>, 38(4), 244-249.</p>	Level I
Social Support for Breastfeeding	<ul style="list-style-type: none"> • Encouraging breastfeeding while also encouraging women's belief in their ability to succeed is necessary in supporting breastfeeding initiation and duration. 	<p>Stockdale, J., Sinclair, M., Kernohan, G., Dunwoody, L., Cunningham, J., Lawther, L., & Weir, P. (2008). Assessing the impact of midwives' instruction: The breastfeeding motivational instructional measurement scale. <i>Evidence Based Midwifery</i>, 6(1), 27-34.</p>	Level II
Use of "Frontline Leaders"	<ul style="list-style-type: none"> • The use of 'Frontline leadership' was central to breastfeeding Best Practice Guideline uptake among staff. 	<p>Matthew-Maich, N., Ploeg, J., Jack, S., & Dobbins, M. (2012). Leading on the frontlines with passion and persistence: A necessary condition for breastfeeding best practice guideline update. <i>Journal of Clinical Nursing</i>, 22, 1759-1770.</p>	Level VI

Authentic Presence	<ul style="list-style-type: none"> • Authentic presence and facilitative instruction by healthcare staff is found to be most effective. 	The Joanna Briggs Institute. (2012). Best practice information sheet: Women's perceptions and experiences of breastfeeding support. <i>Nursing & Health Sciences</i> .	Level I
Improved Communication between Lactation Consultants and WIC	<ul style="list-style-type: none"> • Positive breastfeeding outcomes in the WIC population require increased coordination between hospitals and WIC to ensure that all women have continuous access to high-quality lactation support in the first weeks postpartum. 	Hedberg, I. (2013). Barriers to breastfeeding in the WIC population. <i>International Breastfeeding Journal</i> , 38(4), 244-249.	Level I
		Gregory, E., Gross, S., Nguyen, T., Butz, A., & Johnson, S. (2016). WIC participation and breastfeeding at 3 Months postpartum. <i>Maternal Child Health Journal</i> , 20, 1735-1744. doi:10.1007/s10995-016-1977-1	Level III
Peer Counseling	<ul style="list-style-type: none"> • Positive breastfeeding outcomes in the WIC population involved the use of peer counseling. 	Hedberg, I. (2013). Barriers to breastfeeding in the WIC population. <i>International Breastfeeding Journal</i> , 38(4), 244-249.	Level I

Early WIC Involvement	• Early prenatal WIC enrollment and counseling are critical to the initiation and continuation of breastfeeding among low-income women.	Metallinos-Katsaras, E., Brown, L., & Colchamiro, R. (2015). Maternal WIC participation improves breastfeeding rates: A statewide analysis of WIC participants. <i>Maternal Child Health Journal, 19</i> , 136-143. doi:10.1007/s10995-014-1504-1	Level II
		Gregory, E., Gross, S., Nguyen, T., Butz, A., & Johnson, S. (2016). WIC participation and breastfeeding at 3 Months postpartum. <i>Maternal Child Health Journal, 20</i> , 1735-1744. doi:10.1007/s10995-016-1977-1	Level III
Improved Breastfeeding Education and Lactation Management for Providers	• Providers receive limited breastfeeding education and may benefit from more lactation education to better provide direct support in managing common breastfeeding challenges.	Oniwon, O., Tender, J., He, J., Voorhees, E., & Moon, R. (2016). Reasons for infant feeding decisions in low-income families in washington, DC. <i>Journal of Human Lactation, 32</i> (4), 704-710.	Level VI

Summary of Best Practice Recommendations

The literature reviewed in the previous chapter summarized important information regarding common breastfeeding barriers, along with interventions to promote breastfeeding initiation and duration among low-income mothers. Meehan et al. (2008) determined that women enrolled in WIC who are returning to work and who wish to breastfeed will significantly delay their request for formula when provided electric breast pumps. Hedberg's review (2013) also concluded that breast-pumps available by loan resulted in positive breastfeeding outcomes in the WIC population. Peer counseling was another element identified to result in positive breastfeeding outcomes among the WIC population (Hedberg, 2013). Further research by Stockdale et al. (2008) revealed that there is an imbalance between the value and expectancy for success (confidence) that women face with regard to breastfeeding; therefore, encouraging breastfeeding while also encouraging women's belief in their ability to succeed is necessary in supporting breastfeeding initiation and duration (Stockdale et al., 2008). The reviewed research also supported the use of 'Frontline leadership' as being central to breastfeeding Best Practice Guideline uptake among staff, which further resulted in positive breastfeeding outcomes (Matthew-Maich et al., 2012). The type of interaction and instruction from healthcare staff found to be most effective were those in which the healthcare professional creates a trusting relationship and sense of connectedness between the woman and supporter, while the supporter makes their availability explicit in a sincere manner (Joanna Briggs Institute, 2012). Positive breastfeeding outcomes in the WIC population also require increased coordination between hospitals and WIC to ensure that all women have continuous access to high-quality lactation support in the first weeks postpartum (Gregory et al., 2016; Hedberg, 2013). Metallinos-Katsaras et al. (2015) concluded that women who entered WIC during the prenatal period breastfed for

significantly longer periods of time than women who joined WIC postpartum; therefore, early prenatal WIC enrollment and counseling are critical to the initiation and continuation of breastfeeding among low-income women (Metallinos-Katsaras et al., 2015). Lastly, as providers receive limited breastfeeding education, they would benefit from additional lactation education to better provide direct assistance and support in managing common breastfeeding challenges among new mothers (Oniwon et al., 2016).

CHAPTER 4

Implementation and Evaluation

The initial section of this chapter will focus on implementing an online provider education training module about the importance of breastfeeding and how to best encourage this practice among low-income mothers. The proposed online provider breastfeeding education training module will include the most current, evidence-based information for providers to be best prepared to support low-income pregnant and perinatal mothers when discussing the topic of breastfeeding. This online training module will include information regarding the positive impact of breastfeeding for mothers and babies, when mothers should be referred to WIC, how to increase communication and coordination between hospital providers and WIC, how to provide support for breastfeeding mothers in a way that is effective, and the most effective ways of encouraging breastfeeding Best Practice Guideline adoption among healthcare staff. Based on the recommendations from the previous chapter, lactation consultants, nurse educators, and nurse managers will be assigned as the “frontline leaders” in charge of implementing this into practice. Additionally, the frontline leaders will be in charge of updating an informational flyer that patients are given about where to get a pump, breastfeeding best practice changes, available peer support groups in their area, and which insurance carriers provide and cover breast pumps at no cost. This flyer would also contain information on how the mothers can contact the nearest WIC office to the mother, reminding them that WIC doesn’t just provide formula but also breastfeeding support. The computer-based education module that will be theoretically implemented and evaluation will include a yearly computer-based education requirement, with quarterly updates made to information sheets by frontline leaders. The main objective of this online provider education training module is to provide healthcare staff with the necessary tools

to effectively provide support and resources to low-income mothers during their breastfeeding journey. This online provider education training module will be utilized in conjunction with a childbirth education class that is led by the hospital or birthing centers nurse educator. By implementing the use of computer-based online education, providers will feel more informed and prepared to support new mothers with their breastfeeding journey.

In order to implement this computer-based online education module, the Plan- Do-Study-Act (PDSA) Cycle and research on computer-based learning will be used. The computer-based online education module will incorporate common techniques that research has shown to be effective at delivering pertinent information to a target audience. The PDSA cycle will serve as a framework for the implementation of the computer-based education module into the maternity unit's yearly education requirements (Institute for Healthcare Improvement, 2017). The PDSA cycle is a commonly used method that guides the implementation of evidence-based research into the clinical practice setting (Institute for Healthcare Improvement, 2017). The important aspects of the PDSA cycle that will be addressed in the implementation process of this thesis are Plan, Do, Study, and Act (Institute for Healthcare Improvement, 2017).

In the latter section of this chapter, the evaluation of implementing the best practice computer-based education module into a provider childbirth education class will be addressed. While utilizing the PDSA cycle, testing the best practice computer-based education module will begin on a small scale, learning from each PDSA cycle. After refining the best practice computer-based education module through several PDSA cycles, the change may be implemented on a broader scale – perhaps among other hospitals within the health system that contain a labor and delivery and/or maternal newborn unit . The study stage of the PDSA cycle will be utilized to detail the evaluation process of the best practice computer-based education

module, and the act stage of the cycle will allow for refinements to be made based on what was learned from the previous plan, do, and study stages. Finally, the strengths and limitations of the best practice computer-based education module and additional recommendations for future research related to breastfeeding support for low-income women will be discussed.

Implementation

Implementing an Effective Computer-Based Education Module

Research has indicated that for improving attitudes and knowledge of evidence-based practice among healthcare practitioners, online education programs have been shown to be just as effective as in-person instruction (Young et al., 2014). Utilizing a computer-based education module is one approach that can be implemented to deliver evidence-based best practice information to this particular demographic. The education module will be theoretically implemented using the PDSA cycle on the maternity unit of a local hospital. Through further cycles of PDSA, the module can then be implemented among other hospitals and birthing centers within the health system.

Plan. Plan is the first stage of the PDSA cycle that will direct the implementation of an evidence-based online education module into a hospital's maternity unit or birthing centers' yearly education requirement. The planning stage begins with brainstorming what to include in the online training module that will be created for healthcare providers (Institute for Healthcare Improvement, 2017). When creating an online training module, it is necessary to consider how many healthcare professionals will need to complete the training. The cost to purchase access to the online training system, and what is included in the cost, is another factor to consider in the decision of which the online training system to utilize. Additionally, consideration must be taken

when assessing the amount of time the training would take providers to complete; furthermore, it must be decided when the staff are to complete the trainings while on the clock. It is recommended to begin the initial PDSA cycle allowing the staff to complete the computer-based education module while on the clock; this will show the unit's commitment to the uptake of these best-practice recommendations and the education of the staff. It is important to ensure the education module system continuously updates education information with current evidence-based research. It is also recommended to design a program that offers continuing education credits for participation to encourage uptake of computer-based education module among staff. Most importantly, the education system must cover breastfeeding support for low-income mothers. For the theoretical implementation of this thesis, the computer-based education module will be created by frontline leaders.

Stating a clear objective for the implementation of an online education module is another dimension of the planning stage in the initial PDSA cycle (Institute for Healthcare Improvement, 2017). Healthcare providers will need to recognize the importance of supporting low-income women's desire to breastfeed. In the planning stage, the manager of the maternity units and lactation consultants expose the unit staff to the aim of the evidence-based online education module and ensure understanding of the overall purpose and objective (Institute for Healthcare Improvement, 2017).

The last element of the plan stage in the PDSA cycle is to develop a plan to test the effect of the online education module (Institute for Healthcare Improvement, 2017). In order to evaluate the effect of the PDSA cycle, a pre- and post- online education module survey can be given in order to assess and detect changes in the provider's confidence in their own ability to successfully support breastfeeding among low-income women. In addition, a 20 question pre-

and post- online education module test can be administered to analyze knowledge of current breastfeeding best practice. Lastly, focus groups of staff can be held in order to obtain their feedback regarding the selected computer-based education module. Once the objective of the computer-based education module is established, predictions about the outcome of the computer-based education module made, and methods to test the effect of the computer-based education module determined, the planning stage can move onto the do stage of implementation (Institute for Healthcare Improvement, 2017).

Do. The Do stage of the PDSA cycle indicates that the implementation should be tried out on a small scale (Institute for Healthcare Improvement, 2017). The computer-based education module for the theoretical implementation of this thesis will be created by frontline leaders, and address the various recommendations to best support breastfeeding among the low-income population. The program will provide breastfeeding instruction to providers on prenatal breastfeeding education, intrapartum and early postpartum support, and how to manage some of the most common breastfeeding problems encountered by providers, with emphasis placed on supporting low-income mothers specifically. The best-practice recommendations that will be integrated into the computer-based education module will include the importance of counseling mothers on the use and availability of electronic breast pumps, when to direct women to WIC and for what purposes, the positive impact of peer counseling on breastfeeding rates, encouraging women to attend the existing breastfeeding support groups, and the necessity of authentic presence when communicating with mothers about breastfeeding, and assisting women with breastfeeding problems that commonly cause women to stop breastfeeding-as well as when it is appropriate to initiate a lactation consultant referral. The computer-based education module will be available online, take 7 hours to complete, and offer 7.25 continuing education credits

upon completion. Upon registration for the module, materials will be made available for 12 weeks for providers to complete at their own pace. Before staff registers for the online course, the provider breastfeeding support confidence survey and 20 question pre-test will be administered to the unit staff participating in the education. For purposes of implementation for this thesis, the unit staff will be allowed 3 weeks to register and 12 weeks to complete the online computer-based education module. Frontline leaders will be available to answer questions and assist in troubleshooting during this 12 week period. During this stage of implementation, unit staff behavior and reception of the selected computer-based education module will be observed; it is also during this stage that problems and unexpected observations would be documented (Institute for Healthcare Improvement, 2017). As part of the implementation evaluation, unit staff would complete the same provider breastfeeding support confidence survey and a 20 question post-test to gauge the effect of the breastfeeding education module. The last element of the Do stage would include a focus group held by frontline leaders to assess staff feedback regarding the selected computer-based education module and its utility.

Summary

The implementation process for best practice recommendations to improve breastfeeding support to the low-income population of prenatal and postpartum mothers was developed from research on effectiveness of computer-based education modules and the PDSA cycle for improvement. Utilizing a computer-based education module that is geared toward supporting breastfeeding among the low-income population ensures that the content associated with best-practice breastfeeding support is received in an effective manner to the intended audience, in this particular case, licensed healthcare providers on the labor and delivery unit. Furthermore, the PDSA cycle for improvement is a model that takes the scientific method and applies it to a health

care environment using action oriented learning (Institute for Healthcare Improvement, 2017). The initial steps covered in this section include Plan and Do (Institute for Healthcare Improvement, 2017). In the next section, the PDSA's Study and Act stages will be discussed along with the evaluation of implementing the computer-based education module.

Evaluation

The Study and Act stages of the PDSA cycle, as well as the evaluation of implementing the computer-based breastfeeding education module, are the last portions that will be discussed with respect to the integration of this best-practice thesis into practice. The Study stage of the PDSA cycle allows for evaluation to determine whether or not a particular intervention was effective (Institute for Healthcare Improvement, 2017).

Study. During the Study stage, frontline leaders would evaluate the efficacy of implementing the computer-based breastfeeding education module into their yearly childbirth provider classes (Institute for Healthcare Improvement, 2017). Frontline leaders will evaluate the results of the pre - and post- survey to assess and detect changes in the provider's confidence in their own ability to successfully support breastfeeding among low-income women after completing the online education module. In addition to the survey assessing confidence, the 20 question pre- and post- online education module test will be analyzed to determine the impact of the training on breastfeeding best practice knowledge. Lastly, feedback obtained from the staff focus groups will be analyzed.

Another component of the Study stage of the PDSA cycle is to compare the collected data with predictions (Institute for Healthcare Improvement, 2017). The intended outcome associated with implementing the computer-based breastfeeding education module would align with the prediction that healthcare provider knowledge and confidence in delivering

breastfeeding support to low-income mothers will have increased (Institute for Healthcare Improvement, 2017). Unit staff would be expected to report that the computer-based breastfeeding education module granted them a new perspective about breastfeeding support for low-income mothers. The last factor of the Study stage is to summarize and reflect on what was learned through implementation of the computer-based breastfeeding education module (Institute for Healthcare Improvement, 2017).

Act . The final stage of the PDSA cycle is the Act stage (Institute for Healthcare Improvement, 2017). During the Act stage, refinements and necessary changes are made to the computer-based breastfeeding education module based on what was learned from the previous cycle stages (Institute for Healthcare Improvement, 2017). Items to consider may include allotting either a longer or shorter time window in which to allow unit staff to register and complete the online training, or the need for more training on how to use the selected computer-based breastfeeding education module. In this final stage of the PDSA cycle, a plan for the next PDSA cycle test will be made based on the results and refinements of this cycle (Institute for Healthcare Improvement, 2017).

Strengths and Limitations of Thesis Project

The primary strength of this best practice recommendation is that it included a thorough review of literature that resulted in an overwhelming need for interventions to better provide breastfeeding support to the low-income population of prenatal and postpartum mothers. This particular thesis incorporates a vast majority of the most current research conducted as it relates to breastfeeding among the low-income population. Furthermore, this computer-based education intervention would be generalizable to a wide demographic, and need not be limited to only hospital-based maternity units but to birthing centers as well. The breastfeeding computer-based education module would increase provider knowledge of best practice to support breastfeeding, which in turn will improve breastfeeding outcomes among the low-income population of prenatal and postpartum mothers.

This thesis project is limited in the fact that it does not directly address ways that low-income mothers themselves can increase their odds for breastfeeding success; the recommendations are geared toward healthcare providers and their ability to support breastfeeding practice, but nothing about ways the mothers can improve their chances of breastfeeding success. Furthermore, the frontline leaders who would create the computer-based education module are unit managers and lactation consultants with assumed limited web design background; employing them with the task of developing the computer-based education module may be beyond their abilities and prove problematic when implementing it unit wide.

Summary

The purpose of this thesis was to develop best practice recommendations to better provide breastfeeding support to the low-income population of prenatal and postpartum mothers. Current research indicated a significant gap in breastfeeding initiation and duration rates among low-income mothers when compared with the general population. There are innumerable health benefits for both mother and infant associated with breastfeeding; all women should have the access and opportunity to receive the support necessary to achieve breastfeeding success, no matter their tax bracket. There was an extensive review of current literature that supported the implementation of an online best-practice breastfeeding education training module for providers with all of the necessary information to keep providers informed on current best-practice recommendations and how to best support the low-income population of prenatal and postpartum mothers. The evaluation process of the project, seen in the Study and Act stages of the cycle, would allow for healthcare staff to provide feedback about the education they received and whether or not it had any influence on their perceived ability to provide the necessary breastfeeding support to these women. Overall, implementation of the online best-practice breastfeeding education training module for providers will serve to better equip and embolden healthcare providers in their knowledge and ability to support low-income mothers in their breastfeeding journey, in an effort to produce the best possible outcomes for the mothers, their babies, and society.

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