Breastfeeding Promotion Program: A Quality Improvement Initiative in a Community Based Setting

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Abstract

Background: The community-based program participating in this Quality Improvement Initiative lacked breastfeeding education and help for mothers who desire to nurse their babies. Without sufficient knowledge and consent, mothers are in jeopardy of premature termination or not initiating infant nursing at all due to the lack of access to support and specific problem-solving guidance (Gianni et al., 2019). This breastfeeding promotion program aimed to educate, assess, and assist mothers with different issues encountered during the postpartum period, including breastfeeding. This project was designed to examine statistical outcomes similar to other studies that have explored questions around whether or not the education of staff nurses enhances breastfeeding outcomes. **Methods:** Nursing staff, who have been formally trained in lactation consultation, education, coaching, and support provided individualized assessment and corrective interventions. The nurses supported the families' breastfeeding goals as they overcame obstacles such as latching the baby on, breast and nipple problems, and actual and perceived inadequacy of the milk supply. The Healthy Children's Project Lactation Assessment & Comprehensive Intervention Tool (LAT) was the primary tool used for this breastfeeding promotion program (Appendix B)**.** The LAT was used to teach the nursing staff how to assess and assist mother with breastfeeding management problems related to sore nipples and milk transfer. The desired outcome was measured as an improvement in the duration of breastfeeding and reported exclusive breastfeeding rates in mothers who have expressed a desire to breastfeed within five weeks after birth. **Results:** The project participants consisted of 43 postpartum clients enrolled in the nurse home visiting program (N=43). Twenty-four clients were assisted by the nurse with the LAT, 56%. Nineteen clients did not receive assistance from the nurse with the LAT. The remaining 44% of clients represent formula feeding and breastfeeding, but did not

need help with the LAT. Forty-one clients were breastfeeding at one month, and two clients were formula feeding, indicating that 95% of the mothers had established breastfeeding at one month and 5% did not. There were forty-one clients that reported intent to breastfeed at six months; 95% intended to continue their breastfeeding intentions to 6 months. The remaining two clients (5%) were reported as having the intention to continue formula feeding as their method of infant feeding. The pre-intervention showed 88% of clients were breastfeeding, while 12% formula-fed their infants (Table 3). The post-intervention results showed 93% of clients were breastfeeding and 7% were formula feeding. This is an increase of 5% from the pre-intervention to the post-intervention results. Therefore, the 3rd objective to meet a 15% increase in breastfeeding outcomes was not met. **Conclusion:** As mothers are breastfeeding, it is critical to provide a strong foundation of support to promote continued breastfeeding efforts. Using the LAT as an education tool with nursing staff is an effective way to provide assessment and corrective interventions to assure that mothers breastfeed longer and more efficiently.

Breastfeeding Promotion Program: A Quality Improvement Initiative in a Community Based Setting

Breastfeeding may be incorrectly coined as an inherent, intuitive action. However, sometimes mothers need help and support (Sutter et al., 2018). This is a learning process for both the baby and the mother. Clinicians offer needed support for mothers, which can offset some barriers to breastfeeding (Schanler & Potak, 2020). Mothers frequently note that medical providers' assistance with breastfeeding is crucial to their success (Schanler & Potak, 2020). However, few medical professionals are competent and experienced in supporting breastfeeding mothers (Schanler & Potak, 2020). Qualified professionals provide parental direction and support involving target areas of concern versus merely asking questions about breastfeeding problems (Schanler & Potak, 2020).

Research indicates that breastfeeding is the most beneficial nourishment for most newborns (Bartick et al., 2017). Breast milk has protective agents from the mother that build immunity in the baby, which gives protection from illness (Bartick et al., 2017). The mother's body tailors the infant's needs as it grows to breast milk, so the composition changes with the age of the baby (Czosnykawska-Lukacka et al., 2018). Some of the common occurrences in non-breastfed infants include ear infections, asthma, diarrhea, lower respiratory tract infections, type 2 diabetes, childhood obesity, childhood leukemia, eczema, vomiting, necrotizing enterocolitis, and an increased chance of SIDS (Bartick et al., 2017).

Several national organizations support breastfeeding promotion. On August 18, 2020, the U.S. Department of Health and Human Services (HHS) released Healthy People 2030, the 10-year national plan for correcting our most crucial public health concerns and threats. Since 1980, HHS's Office of Disease Prevention and Health Promotion has set measurable points and targets to enhance the nation's health and wellbeing. The HHS Office of Disease Prevention and Health

Promotion leads Healthy People in association with the National Center for Health Statistics at the Centers for Disease Control and Prevention, which oversees data supporting the initiative. Healthy People 2030 focuses on keeping infants safe and healthy throughout the first year (HHS, 2020). After birth, strategies that focus on increasing breastfeeding rates and promoting vaccinations and developmental screenings are vital to improving infants' health (HHS, 2020). Processes like peer support, education, longer maternity leaves, and breastfeeding support in the hospital, workplace, and community are initiatives to meet the projected target of 42.4% of exclusive breastfeeding through six months of age by 2030 (HHS, 2020). In 2016, The United States Preventive Service Task Force (USPSTF) suggested helping women during pregnancy and after delivery to promote breastfeeding. A grade B recommendation was assigned, meaning the net benefit of breastfeeding is moderate to a substantial certainty, compared with an A rating meaning high confidence that the net benefit is significant (USPSTF, 2016). The Centers for Disease Control and Prevention (CDC) Breastfeeding Report Card, 2020, provides the nation's total maternity Practices in Infant Nutrition and Care (mPINC) score of 79 out of 100. The data represents a national survey that investigates practices and policies affecting infant feeding, feeding instruction and support, staff competence, and discharge support (CDC, 2020). Data can evaluate and enhance scientific motherhood care patterns and recommendations (CDC, 2020).

The Agency for Healthcare Research and Quality (AHRQ) record re-established the positive medical outcomes associated with breastfeeding and the adverse health events found with the formula given and premature weaning from breast milk (Sutter et al., 2018). AHRQ (2018) released Benefits Associated with moms who breastfeed in the Breastfeeding Programs and Policies publication. The Centers for Disease Control [CDC] 2013 published Strategies to Prevent Obesity and other Chronic Diseases, a manual to help mothers that are breastfeeding and

their infants. The World Health Organization (WHO) suggested an initial start of breastfeeding without supplementary feeding or formula in the first six months and extended breastfeeding with integral feeding with solid foods up to 2 years and beyond (Schanler & Potak, 2020). Solo breastfeeding for the initial six months, then adding solid foods and continuing breastfeeding for two years and more as a breastfeeding promotion program, is recommended by professional organizations and public health authorities to promote health in breastfeeding mothers and their children and reduce health disparities.

Background

In the 1970s, breastfeeding declined in much of the developed world (Lubold, 2019). Oliveira et al., 2017, examined a longitudinal study that began in 1999 until 2012 that focused on breastfeeding outcomes. The comparison showed higher breastfeeding rates in the 1990s and 2000s than in the 1960s and 1970s (Oliveira et al., 2017). Since the 1970s, breastfeeding practices have increased, which has become a nationwide progression of this practice from 1980 (Oliveira et al., 2017). Countries with higher-status paying jobs have shown increased breastfeeding outcomes as far back as the 1970s (Lubold, 2019). However, formula companies became strategically aggressive in production and marketing, which caused more shifts away from breastfeeding (Lubold, 2019). This has caused global organizations (such as WHO and UNICEF) and professional organizations (such as AAP and ACOG) to change the falling away from breastfeeding (Lubold, 2019). The U.S. Surgeon General's "Call to Action to Support Breastfeeding" of 2011 aimed to support, promote and protect breastfeeding resulting in higher breastfeeding estimates in the United States (Anstey et al., 2016). The Surgeon's Call proposed simple steps everyone can take to enhance breastfeeding experiences (Anstey et al., 2016).

While worldwide breastfeeding rates have increased in prior years, it has been at diverse rates (Lubold, 2019). The amount of breastfed-only infants differ vastly between countries, although nationally, nearly 30% of babies under six months are solely fed by breast (Ranch et al., 2019). Many of the babies born in the United States happen in hospitals, and despite the short-lived hospital stay, events that occur in this timeframe have a continuing effect (Meek, 2020). One solution is a community-based home visiting program is designed to make home visits to mothers in their home within one day after delivery and continue until their third week postpartum to provide support, promotion, and protection of breastfeeding.

Problem Statement

The community-based program participating in this Quality Improvement Initiative has a lack of breastfeeding education and help for mothers who desire to nurse their babies. Without sufficient knowledge and consent, mothers are in jeopardy of premature termination or not initiating infant nursing at all due to the lack of access to support and specific problem-solving guidance (Gianni et al., 2019). The community-based program aims to educate, assess, and assist mothers with different issues encountered during the postpartum period, including breastfeeding. Exclusive breastfeeding rates should increase with the implementation of the proposed breastfeeding promotion program. The breastfeeding promotion program initiation will serve as a public health attempt to increase staff behaviors around breastfeeding promotion, education and increase the number of women who breastfeed three weeks postpartum.

Project Question

Does implementing a breastfeeding promotion program increase breastfeeding retention rates at six weeks postpartum?

Population-postpartum mothers

Intervention-breastfeeding promotion program taught by nursing staff

Comparison-breastfeeding outcomes with staff education vs. outcomes with no promotion of breastfeeding

Outcome-increase rates of initiation and establishment of breastfeeding

Time-six week target

Search Methods

A literature review was conducted to determine if implementing a breastfeeding promotion program increases breastfeeding retention rates by six weeks postpartum. The terms used to search the literature included: breastfeeding, benefits, support, education, counseling, and programs. Various online websites, including Google Scholar, The United States Preventive Service Task Force (USPSTF), Centers for Disease Control and Prevention, and the World Health Organization, were used. The following databases were used to search for specific information utilizing the TUN Jay Sexter Library: The Cochrane Library, PubMed @TUN, and UpToDate. An initial strategy using the search terms "breastfeeding support" in the Cochrane Database of Systematic Reviews yielded 50 Cochrane review articles. The results were limited to free full text, English, scholarly, peer-reviewed, and published date 2015 to current. Inclusion criteria contained systematic reviews, randomized or quasi-randomized controlled trials, and cluster-randomized controlled studies involving or not involving blinding.

Studies were selected if they included candidates that were normal expectant mothers contemplating nursing their infant or normal mothers who were already nursing healthy newborns. Mothers that did not need extra healthcare were considered healthy. The initial Boolean search of PubMed @ TUN using search terms “breastfeeding” and “support” resulted in 91 identified articles that included free full text and within five years. Articles were excluded if

they focused on breastfeeding complications, mothers with adverse health conditions, and unhealthy babies. When referencing UpToDate, the search term “breastfeeding education and support” yielded an article titled “Breastfeeding: Parental education and support.” This database is an evidence-based clinical resource for point of care worldwide. It is a fee-based service intended to administer physicians and other providers’ linkage to recent medical data. The reference list of this article contained 62 articles. The list was reviewed for relevant articles supporting breastfeeding benefits and promotion practices with increased breastfeeding outcomes. Duplicated articles were excluded, and other articles were compared to the Cochrane Library analyses and USPSTF, meta-analyses for statistical strength (both use the GRADE system).

Review Synthesis

Twenty-two systematic reviews following the Cochrane handbook procedures were included as available evidence. They evaluated measures that protect, promote and support breastfeeding. In this paper, twelve articles were chosen, meeting the criteria for the specific study intervention, which involved breastfeeding promotion and education. The research designs consisted of randomized controlled trials, meta-analyses, and systematic reviews. These study methods have the most relativity and focus mainly on support to women to encourage breastfeeding. Each study was assessed for methodological quality. These studies were designed to support continued breastfeeding. Initiation of breastfeeding and postnatal support were essential components of these trials. Therefore, all chosen literature has methodological quality, validity, and applicability to the proposal.

Detrimental Factors to Breastfeeding

Many mothers may prematurely cease nursing as a result of the issues they experience.

The CDC (2020) guidelines and recommendations strongly support the implementation of policies that support the Ten Steps to Successful Breastfeeding. These steps are the expansive structures that guide the Baby-Friendly Hospital Initiative. They were created by a team of global specialists and included evidence-based practices demonstrated to promote breastfeeding initiation and duration (WHO, 2017). Baby-Friendly® hospitals and birthing facilities must adhere to the Ten Steps to receive, and maintain Baby-Friendly recognition.These steps can be found on under the Breastfeeding division of the CDC (2020) website (Appendix A).

In 2015, Iellamo and colleagues found the most commonly reported excuse, noted in an online survey of 12 WHO Western Pacific offices was return back to work (44%). The survey marked contractual employees and WHO staff that worked in the Western Pacific Region. The responses of note were inadequate milk supply perception (17%), prescription for formula was given (56%), formula was given to the baby without a prescription (56%), and advisement on how workplace can promote and support breastfeeding (Iellamo et al., 2015).

Milk Supply Issues

More than half of women believe that they have an inadequate milk supply (Wagner, 2015). Galipeau et al. (2017) conducted a systematic review and meta-analysis on the effectiveness of breastfeeding self-efficacy interventions and perceived insufficient milk supply outcomes. Areas of intervention identified involving support practices of breastfeeding, including face to face, telephone support or electronic web measures (Galipeau et al., 2017). It was also found that efficient breastfeeding is a modifiable factor, and confidence in breastfeeding reduces the perception of inadequate milk supply. Although this review revealed notable outcomes regarding inclines of self-efficient breastfeeding measures, there remains a shortage of data involving the method, platform, of the measures (Galipeau et al., 2017).

Lack of Public Awareness

A lack of public awareness regarding breastfeeding and reduced length of hospital stay has contributed to reduced breastfeeding and is prevalent today (Wagner, 2015). With earlier discharge after delivery, careful planning involving evaluating the breastfeeding mother and newborn must change from the traditional two-week follow-up to sooner (Wagner, 2015). Expert help may provide solutions to these issues and encourage the continuation of nursing (McFadden et al., 2017).

Mechanical Issues of Breastfeeding

This part of breastfeeding is taken for granted many times. It is not as simple as one may think. There is a necessary cycle to have mastery of this technique that many mothers do not realize. The baby's tongue, lips and jaw must methodically work together in a specific way to form compression of the areola, hence, milk release from the lactiferous sinuses (Wagner, 2015). The process is complete once the front part of the tongue is raised, sending milk to the mouth of the infant (Wagner, 2015). Overcoming the mechanical issues of breastfeeding often leads to better outcomes with breastfeeding.

Incorrect Latch Techniques

Improper latch reduces the mother's propensity to continue attempting to breastfeed. Latch problems often result in cracked, sore nipples. Proper latch requires several actions such as nose opposite the nipple, head title, gape, chin and tongue anchor, and rounded cheek with a rocker motion (Cadwell & Turner-Maffei, 2017). This is the stage that heavily influences the confidence of the mother. Factors affecting latch techniques can vary from sleepy infants to oral-facial malformations (Wagner, 2015). Whatever the case, assistance should be readily available to facilitate the breastfeeding process. As the world is changing, so are the issues attributed to

breastfeeding failure.

Breastfeeding Promotion Measures

Breastfeeding should be done in a relaxing setting with assistance immediately available to perpetuate the practice (Wagner, 2015). Before the invention of commercial formulas, breastfeeding was the standard criteria for infant feeding (Wagner, 2015). Feeding options changed dramatically in the 20th century, with the production of mass amounts of manufactured formula for babies under 12 months of age. (Wagner, 2015). Despite the advancement of this commercially prepared formula in the 21st century, breastmilk is still the highest form of nutritive feeding for infant development (Wagner, 2015). Breastfeeding counseling and support, involving a multi-dimensional plan affect success of breastfeeding outcomes (Wagner, 2015). The Cochrane Database provided systematic reviews of 100 trials involving more than 83,246 mother-infant pairs that support the evidence of longer breastfeeding outcomes with every form of additional support given (Wagner, 2015). Assistance from either a professional or lay person demonstrated no difference in the outcomes of breastfeeding (Wagner, 2015). Positive outcomes of maternal breastfeeding were not affected by the type of person that provided the assistance.

Recently published calculations estimate that if ninety out of one hundred mothers nurse solely for six months, almost 1,000 newborn demises could be eliminated (Karlsson et al., 2019). A call to escalate efforts to reach global target missions of breastfeeding has been promoted by the WHO, yet the query persists as to which features of old and new prevention intervention programming are most beneficial in promoting routine breastfeeding measures (McFadden et al., 2019). It has been concluded that infant death accounts are almost 12% more when newborns are not nursed due to sicknesses and diseases such as pneumonia and diarrhea (Chowdhury et al., 2015). America would save billions annually due to lower medical costs of breastfed infants

versus non-breastfed infants (Bartick et al., 2017). Breastfeeding is also beneficial for the mother. It decreases the chance of acquiring type 2 diabetes, ovarian, endometrial, and breast cancer (Perez-Escamilla & Segura-Perez, 2020). Six global nutrition targets were created for 2025 with one being to increase the rate of exclusive breastfeeding in the first six months up to a minimum of fifty percent (WHO, 2017). Recommendations from the WHO (2017) guidelines propose that every mother be supported to start breastfeeding immediately after birth. Studies that support this practice, within the first hour after birth is considered high-quality evidence (WHO, 2017). Moderate-quality evidence recommended mothers receiving practical assistance to establish breastfeeding and control issues of breastfeeding (WHO, 2017).

Support from Fathers

Successful breastfeeding has been shown to be more evident with support and assistance from the father. In addition, the father's attitudes promote positive outcomes of breastfeeding efficacy (Mahesh et al., 2018). Global reports note that this attitude of the father helps to foster the attitude of the mother as well (Mahesh et al., 2018). One systematic review study of 224 women showed that fathers were key agents in promoting breastfeeding (Mahesh et al., 2018). Over seventy-five percent of mothers breastfed their babies with father supported efforts (Mahesh et al., 2018). Education of fathers resulted in better outcomes in assistance with positioning and latch (Mahesh et al., 2018).

Breastfeeding Counseling

McFadden et al. (2019) concluded that breastfeeding counseling is often part of multifaceted helping plans, but substantiation is missing the specific indicator of counseling factors on nursing practices. The authors conducted a systematic review of randomized controlled trials correlating breastfeeding counseling with no breastfeeding counseling or

differing presentations of counseling were added if they studied breastfeeding customs between birth and 24 months past delivery (McFadden et al., 2019). This systematic review presumes to investigate data on the value of breastfeeding counseling to update global policies (McFadden et al., 2019). It concluded that breastfeeding counseling is a significant national well-being intervention to improve rates of all practices of breastfeeding (McFadden et al., 2019).

McFadden and colleagues (2019) denote that breastfeeding counseling would be better in person, and additional counseling may be conducted via tele visits during pregnancy and postpartum, to every family including expectant women and those with small children. All counseling can be counted as aid, but all aid is not inclusive of counseling. The theme identified here is when mothers get help, they breastfeed longer. Gaps in the meta-analysis are due to a lack of homogeneity of the included studies. The studies are not blinded, and the generalizability is questionable. There are no two studies conducted the same way. Different forms of assistance may be necessary for other geographic areas to rectify the people's needs within that vicinity (McFadden, 2019).

Breastfeeding Support

The re-emerging theme throughout the studies demonstrate that mothers breastfeed longer when they have help. Regardless of the specific type of help received, the evidence shows that helping moms with issues and concerns promote the initiation and continuation of breastfeeding. Increasing breastfeeding is a step in the direction to meet the WHO recommendations of breastfeeding, improvement in health, reduction of medical costs as well as reduce health disparities.

Support can even solve breastfeeding problems through monthly telephone visits. Compared with in person visits, telephone visits can be cost effective methods for improving the

performance of breastfeeding (Huang et al., 2019). Another review by McFadden and colleagues (2017) concluded that breastfeeding support enables women to confidently breastfeed longer and exclusively. Breastfeeding support is attributed as status quo by skilled workers during and after pregnancy (McFadden et al., 2017). This may include continuing pre-planned visits so that mothers can determine when assistance will be accessible, and that it is formed to the place and the demands of the residential group (McFadden et al., 2017). Breastfeeding support is more productive when mothers are in the contemplation and beginning phase of breastfeeding (McFadden et al., 2017). Trained medical staff and experts may be the source of assistance. Methods that depend solely on in person help are prone to excel with mothers performing breastfeeding only practices (McFadden et al., 2017). Assistance can include different ways of increasing confidence and commendation. Sharing information, and offering the chance for mothers to articulate concerns and seek answers as needed is another form of assistance. This review analyzed if the provision organized support for nursing mothers would help them continue to breastfeed compared to standard maternity care. The Grading and Recommendations Assessment, Development, and Evaluation (GRADE) quality of evidence is moderate for this review. The studies' methodological quality was varied, and the factors involving routine care plans and extra assistance were different and did not have clear description. Furthermore, there was diversity involving the women and setting of the studies' (McFadden et al., 2017). Poor measurements of infant eating practices in financially robust countries, make it a challenge to correlate breastfeeding measurements between the differing income level of countries (McFadden et al., 2017). Therefore, caution is advised with regard to reporting breastfeeding.

Provider and Lay Support

As previously mentioned, whether the support comes from a lay worker or professional, support will improve outcomes of breastfeeding. The study by Huang and colleagues (2019) noted that support by both non-medical aides and professionals had a positive impact on breastfeeding outcomes. Additionally, the study recommends that all women should be afforded the option to receive professional support services during pregnancy and after delivery to enhance breastfeeding activities (Huang et al., 2019). Balogun and colleagues (2016) conducted a systematic review to assess the efficacy of various forms of breastfeeding promotion behaviors in changing the amount of mothers who initiate nursing. Two review authors separately evaluated study details for inclusion, extracted information, and inspected the quality of the study (Balogun et al., 2106). Inconsistencies were corrected with exploration, and another investigator was involved when needed (Balogun et al., 2016). There was substantiation from five trials involving 564 women for increased breastfeeding initiation rates amidst mothers who obtained expert medical provider-led breastfeeding instruction and support as opposed to those who were given routine care (Balogun et al., 2016). Evidence was downgraded due to design limitations and heterogeneity (Balogun et al., 2016). This review observed substandard substantiation that provider-led breastfeeding education and non-medical led counseling and associate aid can produce improvements in the amount of mothers initiating breastfeeding (Balogun et al., 2016). Fourteen of the trials took place in the USA, including low socioeconomic status moms and various ethnic and feeding aspirations; thus, narrowing the generalizability of these outcomes to other areas (Balogun et al., 2016). In later years, long term studies would ideally take place in a varied level of income settings, with information on breastfeeding outcomes over multiple periods of time and investigate the efficacy of interventions started before a pregnancy is conceived or actual pregnancy (Balogun et al., 2016).

The interventions may be clearly depicted, using various initiatives of health education, early and continuous mother-baby interaction to allow mothers to excel past the barriers of breastfeeding from society, with clearly delineated, measured results (Balogun et al, 2016). This review is essential to describe the structure of tools to improve the incorporation of breastfeeding. It is also essential to accept this study to examine useful tools to mitigate the advertisement of formula, involving breast milk replacements by the infant formula companies (Balogun et al., 2016).

Home Visiting Support

Ridgway et al. (2016) conducted a cluster randomized controlled trial evaluating the Supporting breastfeeding in Local Communities (SILC) practice. This trial assessed if a visit in the home during the early postpartum timeframe enhanced the breastfeeding rate at four months in Victoria, Australia (Ridgway et al., 2016). The problems involving breastfeeding during these home visits were described in this trial. Topics discussed the type of support and resources were offered. Moms that were perceived as high probability for early termination of breastfeeding were given home visits. Home visits most often included encouragement to mothers (91%) (Ridgway et al., 2016). Topics reviewed involved typical breastfeeding details (83%), surplus and need (83%), positioning (79%), and occurrence of feeding (78%). Infant eating/cues (57%), removal of milk from the breast (54%), sore nipples (41%), inadequate amount (41%), and usage of artificial barriers that shield the nipple (18%) were also prominent topics (Ridgway et al., 2016). Women's concerns and needs were comparable between areas (country-side, regional, or urban) and despite maternal number of pregnancies or age (Ridgway et al., 2016). There was some fluctuation in the resources promoted in different districts. These are commonly noted factors of the issues addressed in the DNP proposed breastfeeding promotion program. The reoccurring theme in this paper is the evidence of longer breastfeeding practices when mothers

get support. New mothers need assistance and encouragement regardless of the number of children they have given birth to (Ridgway et al., 2016). Crucial areas of support are education, inspiration, and normalization of infant behavior (Ridgway et al., 2016).

Early Weaning Protection

Another systematic review by Coco et al., 2018, sought to identify the main recommendations regarding exclusive breastfeeding protective factors. The sample included eight systematic reviews. The leading question was: What is the proof from the literature related to protection of exclusive breastfeeding during the intra-hospital period? Inclusion criteria included systematic reviews that specifically dealt with the guiding question of the study. Omitted reviews included the ones that investigated breastfeeding of premature children and with orofacial malformation.

The authors note that a lack of preparation from healthcare professionals is related to early weaning (Coco et al., 2018). Trained health professionals must be available to promote and support mothers in breastfeeding (Coco et al., 2018). Health professionals must be involved continuously and persistently. This review established supportive data that identify steps taken from birth to discharge in pursuit of mitigating weaning while in the (Coco et al., 2018). Early breastfeeding is also perceived as difficult due to the lack of initiation of breastfeeding in the first hours of life worldwide (Victora et al., 2016). Assistance from trained professionals is a crucial factor, and it is essential to mention the establishment of protective measures for breastfeeding in order to reduce the chance of early weaning (Coco et al., 2018). This systematic review concluded that educational interventions significantly increased the rates of breastfeeding by 43% after delivery; 30% in month one, and 90% between months one and five (Coco et al., 2018). The analysis portrayed an increase of sixty percent between mothers who received

individual support by comparing the type of intervention (Coco et al., 2018). Education is an essential and multifaceted tool used by the healthcare workers, leading to a closer association to the patient and the advancement of the quality of life (Coca et al., 2018). After the inclusion of five studies consisting of 582 mothers, an increase in breastfeeding after the change agent was noted (Coco et al., 2018). The informational exchange included daily group conversations in the lactation consultant's hospital environment, phone calls within 2 days after released home, in addition to a scheduled visit to the breastfeeding center a week after discharge from the hospital, or when the child turned one-year-old (Coco et al., 2018).

Alternative Methods of Assistance

Another highly significant systematic review update was conducted by Skouteris and colleagues (2017). Globally, mothers rarely meet the intended goal to solely breastfeed up to six months after birth (Skouteris et al., 2017). This study updated a review that portrayed a theoretical and systematic structure of facilitators created to promote exclusive breastfeeding within six months in financially adept regions (Skouteris et al., 2017). There were twelve articles were considered relevant; the publication language was English. These articles evaluated exclusive breastfeeding including a 4-month follow-up period afterwards. Quality of evidence was the focal point of analysis regarding complete breastfeeding timeframe, using the GRADE criteria. Four studies demonstrated tremendous increased rates of exclusive breastfeeding (Skouteris et al., 2017). Telephone calls, texting, or internet connectivity were factors that contributed to the success of the postpartum program longevity (Skouteris et al., 2017). Prenatal instruction and support during the birth experience alongside breastfeeding support during the hospital stay were notable key facilitators. Education and postpartum support were consistent

variables observed in this updated review which corresponded similarly to the prior evidence (Skouteris et al., 2017).

Breastfeeding Initiation and Continuation

A meta-analysis evaluating breastfeeding initiation and continuation factors was conducted by Cohen and colleagues (2018). A systematic review was performed to investigate breastfeeding promotion strategies that contain at least one of 6 quantitative, high impact factors surrounding breastfeeding (Cohen et al., 2018). Maternal breastfeeding education was one of the high impact factors identified and will be the only factor mentioned in this review (Cohen et al., 2018). Inclusion criteria were English language, original data, and setting of a developed nation. Other factors considered for inclusion involved breastfeeding outcomes, such as initiation and continuation with the first year of life. Interventions were explicitly directed at biological mothers or foster parents to increase education and confidence involving breastfeeding (Cohen et al., 2018). Prenatal breastfeeding class attendance, peer counseling support, and breastfeeding evaluation prenatally or postnatally (Cohen et al., 2018). Receiving small amounts of breastfeeding support also showed positive outcome for likelihood of initiation or continuation (Cohen et al., 2018). The analysis showed mothers that received breastfeeding education were nearly forty percent more likely to have successful outcomes of breastfeeding than women who didn’t (Cohen et al.,2018). The analysis's limitations are heterogeneity due to the diverse population of breastfeeding mothers surrounding maternal education and breastfeeding education (Cohen et al., 2018). Although there is systematic diversity across studies, results included initiation and continuation strategies leading to successful outcomes. (Cohen et al., 2018).

Breastfeeding Education

A randomized control trial (RCT) by Huang et al. (2019) was conducted to evaluate the efficacy of individually tailored interventions compared with typical care in improving exclusive breastfeeding rates. The authors believed that some studies showed unclear results regarding the impact of intervention improvement of exclusive breastfeeding (Huang et al., 2019). The breastfeeding attrition prediction scale is less likely to capture breastfeeding issues, compared to the usage of the breastfeeding knowledge scale (Huang et al., 2019). Mothers were separated into two groups. Individual prenatal information was provided and lactation support after birth for the intervention group. The control group had no additional support, but received care as usual. The primary results identified the amount of exclusive breastfeeding. The weighing factors included various timeframe assessments from discharge, up to four months after delivery (Huang et al., 2019). Exclusive breastfeeding is the administration of only milk from the breast, as well as medication and vitamins, without any water or commercial formula (Huang et al., 2019). In total, 352 women (176 control, 176 intervention) were selected. Two hundred ninety-three participants completed four months of follow-up support. Financial resources and availability of time may limit the combination of prenatal and postpartum assistance (Huang et al., 2019). Only four months were observed. Future study should involve strategies that compare the six month timeframe of exclusively breastfeeding and two years (Huang et al., 2019). In conclusion, the ongoing individualized prenatal and postpartum education strengthen exclusive breastfeeding practices (Huang et al., 2019).

Twins and Higher-Order Multiple Births

The participating site for the DNP quality improvement project serves mothers of singleton births and higher-order multiples. There are increasing accounts of numerous births across the world with correlated increased rates of adverse events and more hospital care,

commonly due to premature birth (Whitford et al., 2017). Although there is demonstrable proof of adverse outcomes with not breastfeeding; breastfeeding practices with multiples from the same birth are lower than with singleton births (Whitford et al., 2017). Once again, the authors of this study find breastfeeding assistance and education result in increased longevity of breastfeeding practices (Whitford et al., 2017). Yet, data is lacking to provide results from measures to support twin or higher number multiple births (Whitford et al., 2017).

Whitford et al. (2017) conducted a systematic review to assess information exchange on breastfeeding effectiveness and assistance for mothers of twins or higher order multiple births. These mothers need help as well and perhaps even more than mothers who birth singletons. The review by Whitford and colleagues is one of the Cochrane reviews exploring information exchange and support measures to promote exclusive breastfeeding as well as extended duration (Whitford et al., 2017).

There were ten trials noted involving instruction and assistance for breastfeeding that involved mothers with twins or higher order births. The value of information was various, and the chance of partiality was excessive or questionable (Whitford et al., 2017). There was an increased chance of performance partiality and inflated or questionable risk in all studies due to difficulty of blinding staff and mothers (Whitford et al., 2017). The studies recruited nearly six thousand women (512 included from the RCT cluster); this information came from two different studies that contained forty-two mothers with two or more higher order births (Whitford et al., 2017). No intervention was specifically tailored for mothers with multiples, and the results were found to have separate reporting measures. Due to scanty information and the outline in which details were gathered, an anecdotal narrative of the data is displayed, no investigations are presented in this study, and the GRADE method was unable to be used. Whitford et al., (2017)

analyzed statistics for women with multiple order births with home visits and typical care (15 women), and telephone peer counseling versus routine care (27 women). The results indicated the amount of women who initiated breastfeeding (15 women in one study, and 25 out of 27 women in another study). Cessation of breastfeeding was not specifically reported and there was insufficient data to form substantial conclusions (Whitford et al., 2017).

There was no evidence found from RCTs about the efficacy of breastfeeding instruction and assistance for women with twins or higher-order multiple births, or the most efficient way to provide information and assistance (Whitford et al., 2017). There was no evidence regarding the most efficient delivery of the intervention, the timing of care, or the best person to provide the care (Whitford et al., 2017). There is a necessity for better designed studies to examine interventions involving women with twins or higher-order multiples to determine what types of instruction and assistance are beneficial in helping these mothers breastfeed their babies (Whitford et al., 2017).

Peer Support

The final meta-analysis discussed in this literature review is by Shakya and colleagues (2017). The authors examined peer support practices from the community with mothers involving breastfeeding measures in comparison to mothers without peer support in the community (Shakya et al., 2017). This study validated the success of community based peer support involving various breastfeeding rate duration timeframes. For this review, 47 articles were chosen for examination out of nearly two thousand retrieved articles. In comparison to routine care of low and mid income countries, breastfeeding practices increased with peer support in the community (Shakya et al., 2017). Low to middle class range countries with increased peer support, compared to routine care, demonstrated breastfeeding practices within

the first hour after birth (Shakya et al., 2017). This helps mitigate the chance of pre-lacteal feeding (Shakya et al., 2017). Healthcare professionals can enhance breastfeeding experiences; however, in areas with deficient reserves, this becomes a detriment to effective breastfeeding advancement (Shakya et al., 2017). Therefore, mothers are self-dependent and are the central caretakers. When mothers engage in settings for collective affairs or obtain personal instruction from another mother in the neighborhood, they can exchange knowledge and information with each other (Shakya et al., 2017). This interpersonal communication allows reciprocal support, help in making choices, and empowerment (Shakya et al., 2017). So, these measures open the potential to enhance breastfeeding practices and the child's health. These measures are considered continuous substitutes to instruction in health care environment. These measures are more cost effective than provider led instruction in primary care (Shakya et al., 2017).

Limitations and Evidence Gaps

Limitations of the multiple studies noted in this review include variations of study populations, types of measures, education methods, and outcome measurement methods, all of which could affect the interventions. In addition, this may illustrate the cause of substantial variety in several of the study outcomes. Researchers partially noted these interventions by performing subgroup investigations involving exclusive breastfeeding length and type of measures. Some of the subgroup evaluations relied on smaller trials during follow-up times due to insufficient strength to elucidate noteworthy results. Inclusion of quasi-experimental studies in the meta-analyses may have increased the risk of bias.

The WHO (2017) concluded in order to accurately protect, promote and support breastfeeding, studies are needed to explore various ethnic and cultural backgrounds across different regions and countries. They also note that the available evidence relating to health care

professional's education in the knowledge, skills and competence of breastfeeding is limited and lack quality. More research is needed to effectively evaluate the modes of training skills to meet the standard competency to address issues during breastfeeding (WHO, 2017).

Project Aims

Breastfeeding is a vital public health initiative. Mothers enrolled in the home visiting program have poor exclusive breastfeeding outcomes alongside high cessation rates after being discharged from the hospital. This quality improvement initiative aims to provide leadership to a team of community health nurses with the health outcome goal of increasing the amount of breastfeeding versus formula feeding in the population they serve. This project is designed to close the gap between mothers that desire to initiate breastfeeding and those who cease breastfeeding prior to the recommendations of the CDC. I will provide nursing staff, who have been formally trained in lactation consultation, education, coaching and support as they provide individualized assessment and corrective intervention. The nurses will support the families' breastfeeding goals as they overcome obstacles such as problems with latching the baby on, breast and nipple problems and actual and perceived inadequacy of the milk supply. The desired outcome will be measured as an improvement in the duration of breastfeeding and reported exclusive breastfeeding rates in mothers who have expressed a desire to breastfeed within five weeks after birth.

Project Objectives

In the timeframe of the DNP project, the host site will implement the following:

1. Train healthcare staff using Healthy Children's Project Lactation Assessment & Comprehensive Intervention Tool (LAT) by Cadwell and Maffei-Turner (Appendix B).

2. Conduct weekly case reviews of breastfeeding families visited by the community nursing team.

3. Improve rates of breastfeeding versus formula feeding by 15% within a 5-week implementation frame.

Theoretical Framework

Kurt Lewin was credited as a social psychology expert (Petiprin, 2019). Lewin went to school to study medicine, initially, but changed his mind and transferred to the University of Munich, in Berlin to study biology. Socialism and women's rights were among his endeavors (Petiprin, 2019). Lewin emigrated to the United States in 1933 and became a naturalized citizen seven years later. Petiprin (2019) recounts that some of Lewin's work was affiliated with schools including Stanford, Cornell, University of Iowa, Duke and Massachusetts Institute of Technology (MIT). While at MIT, he was solicited to create a solution to combat religious and racial prejudices.

Historical Development of the Theory

During his time in the United States, he created the underpinning theories of sensitivity training, which involved setting up a "change" workshop. His early contributions led to the development of the model known as The Change Theory (Appendix C). The model identified behavior as a balancing act of opposing forces that work together to produce a change (Petiprin, 2019). Toward the end of his life, in 1946, Kurt Lewin described change as having three parts: unfreezing-change-refreeze. After his death, the model became widely used in nursing theory, henceforth, accrediting him as "the father of change management" (Petiprin, 2019).

The unfreezing-change-refreeze model (Appendix C) requires prior learning to be deleted and replaced with new information (Petiprin, 2019). Unfreezing involves ways of reversing old

patterns of thinking and doing things. The second stage, known as change, involves doing something more productive and different than the original patterns of behavior and thinking (Petiprin, 2019). The refreezing stage normalizes the habit and causes it to become the new standard for the long term (Petiprin, 2019). If this stage is not frozen, the prior ways of behavior can reemerge.

Application to the DNP project

In relation to this project, *unfreezing* would translate into nursing staff unlearning breastfeeding myths as truths, and *changing* by teaching families current evidence based practice support measures with corrective interventions resulting in better breastfeeding outcomes in the long term. This project will be an attempt to work towards the *refreezing* stage which will be measured as increasing breastfeeding versus formula feeding for the duration of the project.

Unfreezing in Lewin's Model

During this DNP project, facilitating the unfreezing phase at the project site would involve staff education utilizing the Healthy Children's Project (HCP) Lactation Assessment & Comprehensive Intervention Tool. This tool has evidence based instruction to increase the outcome of breastfeeding. Equipping the nurses with these simple steps will assist in building confidence in order to better assist breastfeeding mothers. This intervention involving the staff will also aid in replacing myths, formerly known as truths. For example, it has been commonly suggested for mothers to drink more water to increase milk supply or get more rest. It is proven that increasing milk supply is directly correlated with frequency of feeding, which is noted in the HCP Breastfeeding LAT. The belief that organic supplements boost milk supply is also inconsistent with current evidence (Cadwell & Turner-Maffei, 2017). Educating staff is the initial process to begin the *unfreezing* process of Lewin's theory. In the past, mothers received

incorrect information regarding breastfeeding due to the healthcare workers learning inconsistent information (Philipp et al., 2007). Medical workers lacked confidence in their ability to help mothers with breastfeeding, which caused gaps in care (Garner et al., 2016).

Change in Lewin's Model

The DNP project will facilitate Lewin's phase of *change* by providing support to nursing staff as they implement the HCP Lactation Assessment & Comprehensive Intervention Tool (LAT). Healthcare staff will utilize up to date information to address the issues of breastfeeding (Folker-Maglaya et al., 2018). Supporting the staff will include answering questions and troubleshooting issues with breastfeeding via phone calls or face-time calls during nurse-mother visits. Specifically, this would also involve teaching the staff to perform individual assessments and corrective interventions, utilizing the HCP Breastfeeding Guide. Increasing staff confidence will enable their ability to provide more efficient and effective support to breastfeeding mothers, as they become more comfortable with repetitious implementation of the HCP guide. This new standard of practice exemplifies the aim of Lewin's *change* phase and has the proclivity to enhance the promotion of mothers making the choice to breastfeed or continue breastfeeding. Another example of facilitation of the *change* theory would be educating staff to give mothers that the supply and demand built-in mechanism of lactation adjusts milk formation according to the amount of breast stimulation (suckling or pumping), not by the amount of sleep or fluid intake that a mother receives (Cadwell & Turner-Maffei, 2017).

Refreezing in Lewin's Model

This DNP project's ultimate goal is to make the HCP breastfeeding LAT a permanent standard of practice for daily staff utilization with breastfeeding mothers. Prior to this indoctrination of practice, examination of desired outcomes of increased breastfeeding versus

formula feeding will be evaluated. Implementation of the HCP breastfeeding LAT will address sustainability principles of the organization and promote the chance of including this practice as a longstanding action. Adequate support of healthcare staff is imperative for the continuation of accurate breastfeeding education. The information that is taught in the *change* phase becomes the standard of practice, therefore, it must be consistent and accurate. It is the hope that this project will produce continuous *refreezing* and prevent the *unfreezing* phase from resurfacing.

Setting

The project setting is a community-based nurse home visiting program located in Fort Worth, Texas. It is a part of a large healthcare company with 2,000 employees. The nurse home visiting program has twelve employees, including the nurses, Program Director, outreach specialist, and navigator. Together, this site conducts between twenty-five to sixty maternal-infant visits per month, depending on infant deliveries at the hospital that month.

This home visiting program is funded by a HOPES grant. All mothers who have given birth at a contracted facility under this program automatically qualify to participate in this program for free. The program was funded by a 2019 appropriation by the 86th Texas Legislature. On National Suicide Prevention Day, state officials announced they awarded $45 million in grant funds to organizations that provide mental health services across the state. Texas Health and Human Services will award millions of dollars to a number of North Texas organizations over the next two years. The program aims to reduce child abuse and neglect by connecting nurses with mothers that have given birth within the first few weeks after delivery.

Due to the current pandemic, nurses are conducting home visits remotely. The nurse is available to address maternal issues of concern via phone and virtually to enhance the possibility of continued breastfeeding. Although visits take place via phone calls, video calls are also an

option. Nurse visitation is conducted in the home for circumstances and if requested by the mother. This program site uses an electronic record called salesforce. The salesforce database is sustainable for the size of the population served.

Population of Interest

The nurse home visitors of this program are the staff that will be educated on how to use the Healthy Children's Project Lactation Assessment & Comprehensive Intervention Tool (Appendix B). They are the direct population of interest for this DNP project. The staff consists of nine registered nurses (RN) with an educational background varying from an associate degree of nursing to a Bachelor of Science in Nursing. Their nursing experience includes the areas of labor and delivery and postpartum nursing. The years of nursing vary between one year and twenty plus years. They will directly interact with clients that are experiencing breastfeeding issues. This support is aimed to improve breastfeeding outcomes.

The breastfeeding mothers are the indirect population of interest. This indirect population includes mothers who have given birth at a hospital contracted with the nurse home visiting program. The mothers are not limited by type or quantity of birth experience. For example, multiparous or twin birth mothers are not excluded from participating in this program. Race, ethnicity, number of pregnancies, abortions, preterm deliveries, socioeconomic status, education, or adoption preference does not disqualify the woman from qualifying or participating in this program.

Stakeholders

Permission to conduct the DNP project was granted via electronic mail (Appendix D). A letter was received from the program director to confirm that no affiliation agreement was necessary to conduct the project with Touro University Nevada (Appendix E).

The registered nurses and clients/patients are critical stakeholders in this project. The nurses will be educated using a specific breastfeeding tool to assist postpartum mothers that express difficulty breastfeeding. This intervention is intended to affect breastfeeding outcomes positively. The program director, a key stakeholder, will assist with report production and mandating nursing staff participation in the protocol. The navigator is a stakeholder with the ability to generate statistical evidence from the data placed into the salesforce database. This position is comparable to that of a statistician to compile necessary information for this project.

Interventions

A training class will be offered. Nurses will utilize the technique from the class to assist mothers with breastfeeding management issues and latch issues. This support and education is provided to help moms increase breastfeeding duration for at least 1 month and intent to breastfeed for 6 months. Breastfeeding duration at 1 month and intent to breastfeed for 6 months will be measured to analyze the effect of the intervention. Nurses will be provided additional support as needed after the training class to provide the best support efforts to the moms. The project lead will also assess if nurses followed through with breastfeeding teaching after the implementation of the project.

Tools

The Healthy Children's Project Lactation Assessment & Comprehensive Intervention Tool (LAT) is the primary tool used for this breastfeeding promotion program (Appendix B)**.** The LAT will be used to teach the nursing staff how to assess and to assist mothers that are having issues with breastfeeding management problems related to sore nipples and milk transfer. K. Cadwell is a content expert for this DNP project and has granted permission to use this tool (see Appendix F). She has many years of published research involving breastfeeding and usage

of this LAT. This tool has been evaluated for validity and has been used in previous research studies. The LAT is a compilation of specific steps to ensure proper latch in nursing babies. Some of these steps include head tilt, bottom lip movement, nose location and angle of mouth opening. This tool will be used to train the nurses to assist all breastfeeding moms. The moms will perform proper latch with execution of the steps from the LAT.

The internal consistency of the LAT was examined using Cronbach's alpha. The structural validity was assessed using an exploratory factor analysis (EFA), and the proposed factors were confirmed by confirmatory factor analysis (CFA) using separate samples. Receiver operating characteristic analysis was used to evaluate the sensitivity and specificity of the LAT score thresholds for predicting non-exclusive breastfeeding. The Cronbach's alpha value of the LAT assessment was 0.74. Two CFA of the LAT demonstrated better fit indices of the model (Lau et al., 2016). Using cut-offs of 5.5 and 3.5 were recommended when predicting non-exclusive breastfeeding with satisfactory sensitivity (98%), and low specificity (9%), low positive predictive value (41%), and negative predictive value (75%). Therefore, the tool has good sensitivity but poor specificity, positive and negative predictive values (Lau et al., 2016). Health professionals can use the LAT as a clinical tool because it is a concise, easy-to-use and valid tool for assessing and correcting breastfeeding techniques (Lau et al., 2016).

Chart Review Tool

A chart review of the salesforce database will be performed to assess the following 3 questions: 1) Reported breastfeeding maintenance at 1 month and 2) reported intent to continue breastfeeding for at least 6 months. 3) Compliance with the protocol by assessing if teaching was done on follow up visit. Reports will be generated by creating an excel file to collect the results of the 3 questions noted above (Appendix G).

Staff Education Tool

The project lead will create an agenda for the staff nurse training (Appendix H). A brief overview of the LAT will be provided to note the basic items listed on the tool and that permission was granted to use the tool. The next step of the agenda will involve showing a video that is available for purchase from Amazon, titled "Latch 1,2,3" which covers all sections of the LAT. This 17 minute video provides a step-by-step problem-solving strategy to help with breastfeeding success. The video aids health care teams in sharing an understanding of baby states, feeding cues and latch as well as reinforcing essential teaching points to breastfeeding families. After watching the Latch 1,2,3 video, the nursing staff will explore breastfeeding issues and discuss corrective interventions from the LAT. The next session will involve the nursing staff viewing breastfeeding videos with no sound from Global Health Media Project via YouTube to provide an opportunity to discuss the items demonstrated from the LAT. After the viewing and discussion of the videos, the nursing staff will be taught how to document their compliance in the salesforce database. They will also be shown where to document the client's breastfeeding maintenance at 1 month and intention to breastfeed for 6 months. Further support will be offered as needed to increase the likelihood of charting accuracy.

Data Collection

The community nursing program uses the salesforce database which is a documentation system to chart client encounters. This database houses all interactions between the nurse and client, including teaching, assessments and various types of screeners. Each client that is entered into the salesforce database is assigned a case number. This case number protects the clients' identity and helps to maintain confidentiality. No identifying information is collected. The use of password protected files and documents are used to assist in maintaining confidentiality. The

nurses will document yes/no responses in the appropriate section of the database. This section was specifically created for data collection purposes to meet the objectives of the DNP project. Each nurse will respond to 3 yes or no questions relating to their use of the LAT with a client, breastfeeding maintenance at 1 month and intention to breastfeed for 6 months. These responses can generate a report to measure the amount of yes or no responses put into the database. Each nurse has a caseload of clients, therefore, every client will have responses to the questions noted above. This will determine if the intervention involving the nurse usage of the LAT increased breastfeeding outcomes.

Ethics/Human Subjects Protection

This study was approved by the IRB of MHMR of Tarrant County, Texas. An application was approved for expedited review. The project site does not require Quality Improvement committee oversight. Women that delivered babies at the hospital that is contracted with the community nursing program are assigned to a nurse. Each postnatal client is eligible to participate in this study if they are breastfeeding or desire to breastfeed. Each breastfeeding client is assured anonymity. All necessary approvals and permissions were granted prior to implementation of the study to assure human subject protection. There are no risks to clients for this study. Optimal breastfeeding practices have health and economic benefits. Child survival is greatly enhanced for early growth and development with breastfeeding. Staff education with the LAT increases the probability for successful breastfeeding outcomes. This, in turn, reduces risk for obesity, diabetes, asthma and dermatological diseases in children (Benova et al., 2020). Increased breastfeeding outcomes also promote protection against breast and ovarian cancers (Benova et al., 2020). The research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. There is no compensation for the staff nurses.

There is no additional recruitment methods necessary for this study. The clients that are enrolled in the community nursing program will suffice for the study.

Measures/Plan for Analysis

The salesforce database is the measure in place to acquire data for analysis. Nurse compliance of the LAT use, intent to breastfeed for six months, and breastfeeding maintenance at one month will be extracted into an Excel spreadsheet from the site case questions area. Descriptive statistics using means and standard deviations will be used to evaluate the outcomes. Statistical analysis of the data involves using simple math to compare breastfeeding rates prior to receiving support from the nurses and breastfeeding outcomes after receiving the support.

Analysis

The program director of the home visiting program supervises the nursing staff and tailors the program to produce positive outcomes in maternal-infant health. She assisted in the data collection from the salesforce database. The data analysis stage began with extraction of the data from the salesforce database and compiling it into an Excel spreadsheet.

Breastfeeding duration and LAT usage was measured by 3 yes or no choice questions (Table 1). Item content included nurse usage of the LAT with the client, breastfeeding at 1 month, and intent to maintain breastfeeding to 6 months. If the client needed support with latch during a visit, the nurse used the LAT to identify and correct latch problems. All the breastfeeding clients may not have needed assistance utilizing the LAT. Yet the nurses could use this tool to spot check for any difficulties breastfeeding. The assessment techniques and corrective interventions of the LAT adapted by Healthy Children's Project are provided in table format (Table 2).

This project was designed to examine statistical outcomes that are similar to other studies

that have explored questions around the question of whether or not the education of staff nurses enhances breastfeeding outcomes. The Excel tool includes processes for creating charts, tables, and graphs and was used to generate the explanatory charts and graphs for the analysis. The data generated from the spreadsheet was easily interpreted using simple math due to the simplicity of the project design. Percentages were calculated by dividing the number of clients that answered "yes" by the total number of clients. The pre and post data was created by running retrospective and post intervention reports using date filters. The percentages represent the number of breastfeeding and formula feeding mothers participating in the home visiting program. The pre data chart was created based on the number of mothers who were breastfeeding and formula feeding one month prior to the intervention (Table 3). The post data chart was created utilizing the same information as the pre data, except that the data was collected one month post intervention (Table 4). The breastfeeding rate increased 5% from pre to post intervention.

Discussion of Findings

This quality improvement project evaluated breastfeeding outcomes involving educating nurse home visitors about the use of an assessment tool (LAT) in order to assist mothers who desire to breastfeed and who were having problems. This intervention met the first objective stated earlier in this project: Train healthcare staff using Healthy Children's Project Lactation Assessment & Comprehensive Intervention Tool (LAT). Breastfeeding has been found to be associated with reducing or eliminating a variety of undesirable health outcomes in the infant and childhood period, including otitis media, asthma, atopic dermatitis, obesity, diabetes and high blood pressure (USPSTF, 2016). The USPSTF concluded that interventions to support breastfeeding have a moderate benefit and longer duration confers greater benefits. Positive maternal health outcomes, such as reduction of breast and ovarian cancer and type 2 diabetes are

also associated with breastfeeding (USPSTF, 2016).

The project participants consisted of 43 postpartum clients enrolled in the nurse home visiting program (N=43). Weekly case reviews and nursing support sessions of staff nurses (N=8) were conducted to satisfy the 2nd objective for this project: Conduct weekly case reviews of breastfeeding families visited by the community nursing team. Weekly sessions took place prior to and during the intervention period in order to support the nurses and build their confidence with use of the LAT and to answer questions that the nurses had as they were assisting clients.

The breastfeeding duration findings of this project confirmed that breastfeeding duration and exclusivity are increased with training nurses and client support from the nurses. The duration of breastfeeding was determined by using three factors denoted on table 1. Clients were delineated by their choice of breastfeeding or formula feeding. Each client was connected with one of the 8 Registered Nurses who then provided support with breastfeeding if needed. The nurses had been educated about using the latch assessment tool (LAT) to assist clients needing support with breastfeeding. For example, mothers having difficulty latching were assessed and provided corrective technique according to the elements of the LAT noted on table 2. A successful latch is found when all of these parameters are met. This tool was the roadmap to successful latch processes with nurse assistance. Twenty-four clients were assisted by the nurse with the LAT, 56%. Nineteen clients did not receive assistance from the nurse with the LAT. The remaining 44% of clients represents these that were formula feeding and also breastfeeding, but did not need assistance with the LAT. In fulfillment of the third objective: Improve rates of breastfeeding versus formula feeding by 15% within a 5-week implementation frame, this interpretation will be used in the pre and post breastfeeding rates discussion to determine if there

was an increase of 15% in breastfeeding outcomes within the implementation timeframe. Forty-one clients were breastfeeding at 1 month, and two clients were formula feeding, indicating that 95% of the mothers had established breastfeeding at 1 month and 5% did not. There were forty-one clients that reported intent to breastfeed at 6 months; 95% intended to continue their breastfeeding intentions to 6 months. The remaining 2 clients (5%) were reported as having the intention to continue formula feeding as their method of infant feeding.

Significance

These findings are in line with systematic reviews that show improved breastfeeding outcomes when mothers are given support, whether it is by nurses, lay persons, or family and friends. Breastfeeding support is highly relevant, given the long-term health consequences of breastfeeding (Van Dellen et al., 2019). Skouteris and colleagues (2017) conducted a systematic review in which 4 of 12 studies had a significant increase in breastfeeding outcomes with education and support. The results of this review closely correspond with the DNP project review, in that all of the successful interventions had an education or support component. The SILC (Supporting breastfeeding In Local Communities) trial conducted by Ridgway and colleagues (2016) aimed to increase breastfeeding rates by implementing two community-based interventions designed to provide support to breastfeeding mothers. The study examined the breastfeeding outcomes of families served by Maternal and Child Health Nurses (MCHNs)(registered nurses) who had received education and then provided consultation and support to women after discharge from maternity care. This study is closely aligned with the study described in the Ridgway report. Innovative nursing education strategies have also been reported. For example, Sadovnikova and colleagues (2020) developed a high fidelity lactation simulation model in order to increase health professional confidence in clinical lactation skills

with the goal of improving breastfeeding outcomes. They concluded that development of these skills would transfer to better outcomes in breastfeeding.

The breastfeeding improvement program conducted for this DNP project is comprehensive and the strengths of the intervention include that it combines both education and ongoing support for the nurses, that it was led by professional provider, and an available protocol was utilized. This evidence based program integrated supportive methods which have been previously shown to enhance breastfeeding intervention effectiveness (Kim et al., 2019). An additional benefit of this project is that it is not adapted to a specific group, but appropriate to a more generalizable population.

Table 1

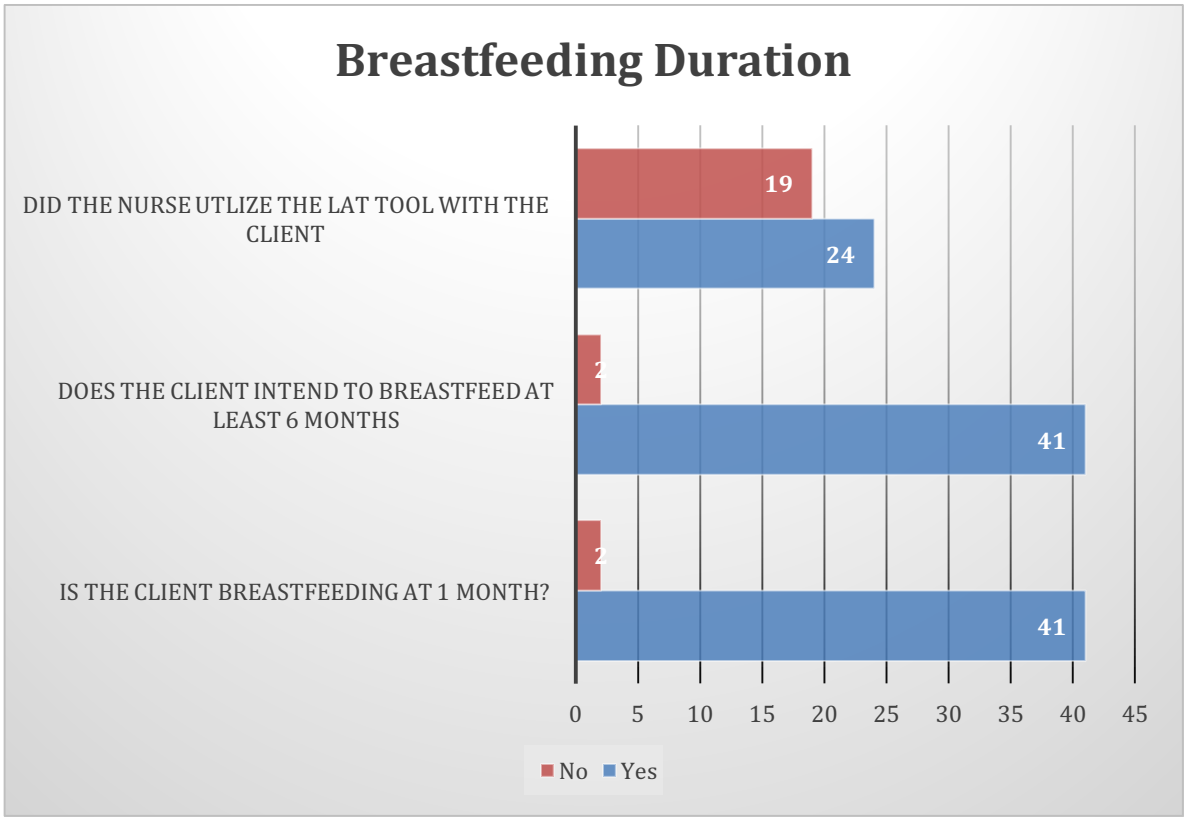


Table 2 Latch Parameters with Corrective Interventions adapted by HCP

ASSESSMENT PARAMETERS	**CORRECTIVE INTERVENTION**
Latch process (root, gape, seal, suck)	Baby roots, then gapes, seals, and sucks
Angle of mouth opening at breast	160 minimum mouth angle
Lip flange	Top and bottom lip not turned in
Baby's head position	Nose and chin close to breast
Baby's cheek line	Smooth cheek line
Baby's height at breast	Nose opposite nipple to start
Baby's body rotation	Baby's chest to mother's breast
Baby's body relationship	Baby horizontal across mother's chest
Nursing dynamic	Bursts of suck (swallow 2:1 or 1:1)

The pre and post data represent the number (%) of clients that were breastfeeding a month prior and a month after the implementation. The pre-intervention shows 88% of clients were breastfeeding, while 12% formula fed their infants (Table 3). The post-intervention results show 93% of clients were breastfeeding and 7% were formula feeding. This is an increase of 5% from the pre intervention to the post intervention results. Therefore, the 3rd objective to meet 15% increase in breastfeeding outcomes was not met. While the set goal of 15% was not attained, the increase in breastfeeding outcomes are notable, given the positive effects of the infant's and mother's health. The mere fact that there was not a decrease in breastfeeding outcomes is applauded. The WHO and UNICEF (2017) guidelines have implemented practices to protect, promote and support breastfeeding. Plans to update the guideline involves the WHO

steering committee continually following research developments in the breastfeeding arena where the quality of evidence was found to be very low.

Table 3-Pre data 1 month before intervention

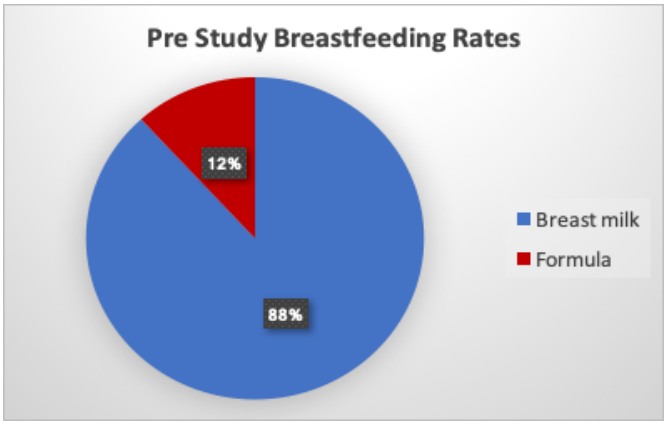
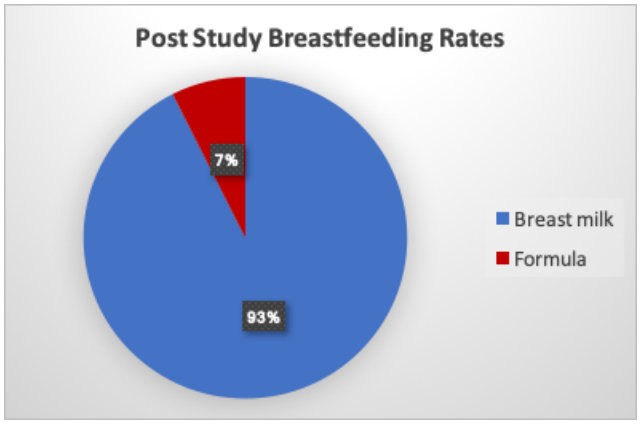


Table 4-Post data 1 month after intervention



Limitations

This project had several limitations related to the time constraints of an academic project. If the intervention had lasted over a longer period of time, the number of participants would have been larger and there may have been a different outcome. Also, if it were not time limited, additional intervention sites could have been included. Because of the need to include the largest population of participants from a single site, the sample of women did not include parity as a selection criteria and women who have previously breastfed have been shown to have significantly different breastfeeding outcomes compared to women who are breastfeeding for the first time (Hackman et al., 2015). To strengthen the evidence for the effectiveness of the intervention, creating a more uniform group at baseline is more predictable of a univariate analysis. Pre-existing differences can pose a threat to internal validity, mainly if they are related to the outcome variable of interest, and can thus provide an alternative explanation for the effect of the intervention (Van Dellen et al., 2019). With more time, the number of sessions with the

nurse could have an even more positive impact on the evidence, leading to a substantial increase in breastfeeding outcome.

Because the study design limited the intervention to one site, the number of nurses was also limited. Analyzing which nurses contributed input for the data collection would add another dimension and assist in determining the effectiveness of the intervention. The data collection method did not include information to know which nurse contributed their information for the patients. Hence, a specific nurse identifier would add another layer of data to aid in the analysis of the argument for more nurse involvement producing favorable breastfeeding outcomes. Insufficient participant numbers are likely to cause a detrimental effect on the proposed outcome and would explain in part the lack of evidence of effective intervention.

The data collection also did not delineate which mothers had babies in the NICU that were using a pump instead of breastfeeding. With a larger population and more time, this subgroup analysis would be an added benefit to show this intervention was not tailored to a specific group, but applicable to the general population. Also, there was no evaluation of the effectiveness of possibly using the LAT without the nurse.

Dissemination

The plan for dissemination of this project will include an oral, and zoom presentation with Touro University Nevada faculty. Project team members, students and faculty will be invited. Upon approval, a submission to the DNP repository will be made. In addition, a final report of the project will be submitted to the Family Connects Program of North Texas, Nurse Family Partnership and Early Childhood Intervention of Tarrant County. A poster presentation will also be submitted to the Healthy Children's Project conference in January 2022.

Project Sustainability

This project can be used as a valuable resource in home visiting programs regarding breastfeeding assistance in all populations. Larger and more studies should be performed to measure the impact of nurse education on breastfeeding outcomes. This includes ways to better understand and promote the efficacy of education and interventions delivered by nurses with an indirect response of improving breastfeeding outcomes. It is important to have a robust intervention with nurse enthusiasm and participation to sustain long term benefits that enhance breastfeeding outcomes. The host site has continued to monitor breastfeeding rates and use the LAT tool with the education provided from the project.

Conclusion

This project evaluated breastfeeding outcomes in relation to nurse education using a lactation assessment tool (LAT). Specifically, nurses were provided education to assist breastfeeding mothers with trouble latching their infants. New mothers require support and reassurance for successful breastfeeding outcomes. The analysis of nurse education on breastfeeding outcomes was proven to have a positive effect on the duration of breastfeeding. As mothers are in the stage of initiating breastfeeding, it is critical to provide a strong foundation of support to promote continued breastfeeding efforts. Using the LAT as an education tool with nursing staff is an effective way to provide assessment and corrective interventions to assure that mothers breastfeed longer and more efficiently.

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Appendix A

The *Ten Steps to Successful Breastfeeding*

1a. Comply fully with the International Code of Marketing of Breast-milk Substitutes and relevant World Health Assembly resolutions.

1b. Have a written infant feeding policy that is routinely communicated to staff and parents.

1c. Establish ongoing monitoring and data-management systems.

2. Ensure that staff has 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.

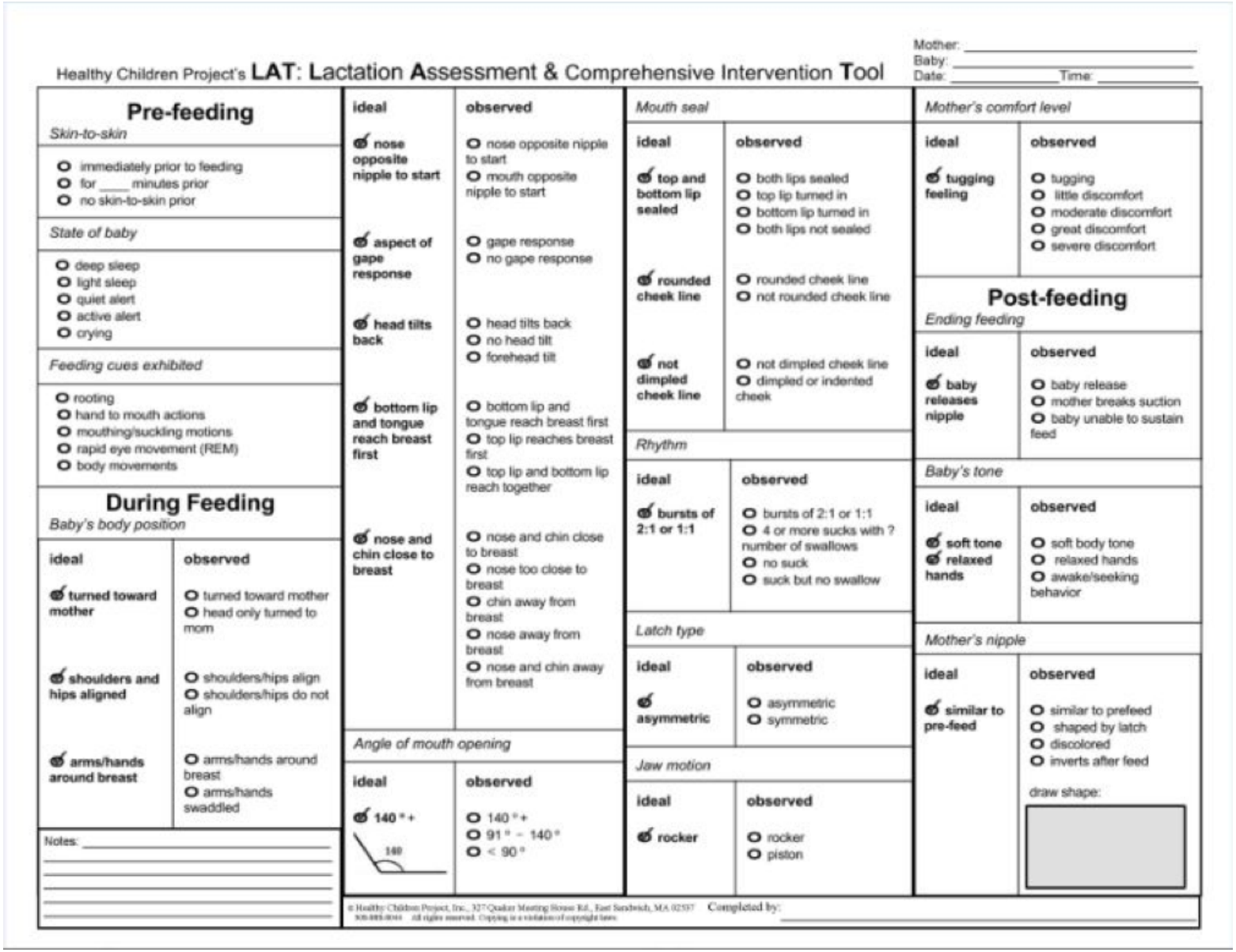
7. Enable mothers and their infants to remain together and to practice rooming-in 24 hours a day.

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.

Appendix B



Healthy Children Project's **LAT: Lactation Assessment & Comprehensive Intervention Tool**

Mother: _____
Baby: _____
Date: _____ Time: _____

Pre-feeding

Skin-to-skin

- O immediately prior to feeding
- O for ____ minutes prior
- O no skin-to-skin prior

State of baby

- O deep sleep
- O light sleep
- O quiet alert
- O active alert
- O crying

Feeding cues exhibited

- O rooting
- O hand to mouth actions
- O mouthing/suckling motions
- O rapid eye movement (REM)
- O body movements

During Feeding

Baby's body position

ideal	observed
☑ **turned toward mother**	O turned toward mother O head only turned to mom
☑ **shoulders and hips aligned**	O shoulders/hips align O shoulders/hips do not align
☑ **arms/hands around breast**	O arms/hands around breast O arms/hands swaddled

Notes: _____

ideal	observed
☑ **nose opposite nipple to start**	O nose opposite nipple to start O mouth opposite nipple to start
☑ **aspect of gape response**	O gape response O no gape response
☑ **head tilts back**	O head tilts back O no head tilt O forehead tilt
☑ **bottom lip and tongue reach breast first**	O bottom lip and tongue reach breast first O top lip reaches breast first O top lip and bottom lip reach together
☑ **nose and chin close to breast**	O nose and chin close to breast O nose too close to breast O chin away from breast O nose away from breast O nose and chin away from breast

Angle of mouth opening

ideal	observed
☑ **140 °+**	O 140 °+ O 91 ° – 140 ° O < 90 °

Mouth seal

ideal	observed
☑ **top and bottom lip sealed**	O both lips sealed O top lip turned in O bottom lip turned in O both lips not sealed
☑ **rounded cheek line**	O rounded cheek line O not rounded cheek line
☑ **not dimpled cheek line**	O not dimpled cheek line O dimpled or indented cheek

Rhythm

ideal	observed
☑ **bursts of 2:1 or 1:1**	O bursts of 2:1 or 1:1 O 4 or more sucks with ? number of swallows O no suck O suck but no swallow

Latch type

ideal	observed
☑ **asymmetric**	O asymmetric O symmetric

Jaw motion

ideal	observed
☑ **rocker**	O rocker O piston

Mother's comfort level

ideal	observed
☑ **tugging feeling**	O tugging O little discomfort O moderate discomfort O great discomfort O severe discomfort

Post-feeding

Ending feeding

ideal	observed
☑ **baby releases nipple**	O baby release O mother breaks suction O baby unable to sustain feed

Baby's tone

ideal	observed
☑ **soft tone** ☑ **relaxed hands**	O soft body tone O relaxed hands O awake/seeking behavior

Mother's nipple

ideal	observed
☑ **similar to pre-feed**	O similar to prefeed O shaped by latch O discolored O inverts after feed draw shape:

Completed by: _____

Appendix C
By Kurt Lewin

Unfreezing

- Recognizing the need for change.
- Encouraging the replacement of old behaviors and attitudes with new behaviors.

Changing

- Implement change by taking specific actions.
- Helping employees to learn new concept or points of view.
- Role Models, mentors, experts, benchmarking results and training are useful mechanisms to facilitate change.

Refreezing

- Changes are reinforced and stabilized.
- Leaders integrate the changed behavior or attitude into the normal way of doing things.
- Coaching and modeling help reinforce the stability of change.

Appendix D

Request for Expedited Review

Please complete this form and return it to the following address for processing: **Institutional Review Board** **MHMR of Tarrant County** **Attn: Camille Patterson** **3840 Hulen Street, Ste. 208** **Fort Worth, TX 76107** **Tel: (817) 569-4486** **Fax: (817) 569-4479** **E-mail:** **Camille.Patterson@mhmrtc.org**		***FOR IRB-c USE ONLY***

Investigator: Tamekia Scaggs	Date: 8/10/2020
Title of Project: Breastfeeding Promotion Program: A Quality Improvement Initiative in a Community Based Setting	

Research activities that (1) present no more than minimal risk to human subjects and (2) involve only procedures listed in one or more of the categories below in Section One may be reviewed by the IRB through the expedited review procedure. Minimal risk means that the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude,

than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.

If you believe that your research falls into one of the following categories, please indicate which category or categories you believe is or are appropriate. The IRB Chairperson or his or her designees will review your research to determine if expedited review is warranted. If warranted, your research will be reviewed to determine if approval can be granted. If granted, the form will be returned to you with an approval stamp in Section Three along with the signature of an IRB Chairperson, and you may begin your research. You must notify the IRB if your proposed research changes in any way. The IRB will request periodic updates. If expedited procedures cannot be used, the reason will be explained in Section Three, and your research must be reviewed during a convened IRB meeting.

Direct questions to the IRB Office at the address shown above.

Section One: Categories Eligible for Expedited Review *(Please indicate one or more category, as appropriate, in the space next to the category numbers below.)*

1.* Research involving materials (data, documents, records, or specimens) that :
_X__ (a) have already been collected for some other purpose,
OR
_X__ (b) will be collected for non-research purposes (such as medical treatment or diagnosis).

2. ___ Collection of data from voice, video, digital, or image recordings made for research purposes.

3.* Research on:
___ (a) individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior),
OR
___ (b) research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

4. Continuing review of research previously approved by the convened IRB as follows:
___ (a) Where:
(i) The research is permanently closed to the enrollment of new subjects, and
(ii) All subjects have completed all research-related interventions, and
(iii) The research remains active only for long-term follow-up of subjects,
OR
(b) Where no subjects have been enrolled and no additional risks have been identified;
___ **OR**
(c) Where the remaining research activities are limited to data analysis.
___

5. ___ Continuing review of research, not conducted under an investigational new drug application or investigational device exemption, where categories 2 through 8 do not apply, but the IRB has determined and documented at a convened meeting that the research involves no greater than minimal risk and no additional risks have been identified.

6. Clinical studies of drugs and medical devices only when condition (a) or (b) is met:

___ (a) Research on drugs for which an investigational new drug application is not required. (Note: Research on marketed drugs that significantly increases the risks or decreases the acceptability of the risks associated with the use of the product is not eligible for expedited review.) **OR**

___ (b) Research on medical devices for which (i) an investigational device exemption application is not required or (ii) the medical device is cleared/approved for marketing and the medical device is being used in accordance with its cleared/approved labeling.

7. Collection of blood samples by finger stick, heel stick, ear stick, or venipuncture from:

___ (a) Healthy, nonpregnant adults who weigh at least 110 pounds. For these subjects, the amounts drawn may not exceed 550 ml in an 8 week period and collection may not occur more frequently than 2 times per week;
OR

___ (b) Other adults and children, considering the age, weight, and health of the subjects, the collection procedure, the amount of blood to be collected, and the frequency with which it will be collected. For these subjects, the amount drawn may not exceed the lesser of 50 ml or 3 ml per kg in an 8 week period and collection may not occur more frequently than 2 times per week.

Note: 'Children' in (b) above is defined in the HHS regulations as "persons who have not attained the legal age for consent for treatments or procedures involved in the research, under the applicable law of the jurisdiction in which the research will be conducted" [45 CFR 46.402(a)].

8. ___ Prospective collection of biological specimens for research purposes by noninvasive means. Examples:

(a) Hair and nail clippings in a non-disfiguring manner
(b) Deciduous teeth at time of exfoliation or if routine patient care indicates a need for extraction
(c) Permanent teeth if routine patient care indicates a need for extraction
(d) Excreta and external secretions (including sweat)
(e) Uncannulated saliva collected either in an unstimulated fashion or stimulated by chewing gum, base or wax or by applying a dilute citric solution to the tongue
(f) Placenta removed at delivery
(g) Amniotic fluid obtained at the time of rupture of the membrane prior to or during labor
(h) Supra- and subgingival dental plaque and calculus, provided the collection procedure is not more invasive than routine prophylactic scaling of the teeth and the process is accomplished in accordance with accepted prophylactic techniques
(i) Mucosal and skin cells collected by buccal scraping or swab, skin swab, or mouth washings
(j) Sputum collected after saline mist nebulization

9. ___ Collection of data through noninvasive procedures (not involving general anesthesia or sedation) routinely employed in clinical practice, excluding procedures involving X-rays or microwaves. Where medical devices are employed, they must be cleared/approved for marketing. (Studies intended to evaluate the safety and effectiveness of the medical device are

not generally eligible for expedited review, including studies of cleared medical devices for new indications.) Examples:

(a) Physical sensors that are applied either to the surface of the body or at a distance and do not involve input of significant amounts of energy into the subject or an invasion of the subject's privacy
(b) Weighing or testing sensory acuity
(c) Magnetic resonance imaging
(d) Electrocardiography, electroencephalography, thermography, detection of naturally occurring radioactivity, electroretinography, ultrasound, diagnostic infrared imaging, doppler blood flow, and echocardiography
(e) Moderate exercise, muscular strength testing, body composition assessment, and flexibility testing where appropriate given the age, weight, and health of the individual

10. ___ Minor changes in previously approved research. (45 CFR46.110 (b) (2)).

* Note regarding categories 1 and 2: Some research in this category may be exempt from the HHS regulations for the protection of human subjects.

Tamekia Scaggs	8/10/2020
Signature of Investigator	Date

Section Two: Additional Materials

Please attach the following materials to this application:

1. IRB Application
2. Informed consent form (if applicable)
3. Any survey tools or questionnaires

Section Three: Committee Approval

FOR IRB-c USE ONLY

XResearch Approved by Expedited Review (Category 1a./1b) ❑ Expedited Review Not Allowed Paul Duncan 8/18/20 Signature of IRB Chair or Designee Date	Comments: Expedited review approved with the understanding that the investigator will access only records permitted as an employee and no identifying information will be used in the study.

Appendix E

August 18, 2020

Dear Touro University Nevada DNP Program:

Tamekia Scaggs is permitted to engage in practice activities at MHMR of Tarrant County. No affiliation agreement is required for her to be present as a student. Furthermore, she has received IRB approval from MHMR Tarrant County for her proposed DNP project.

Sincerely,

Celestina Grannum Program Director - Family Connects
3840 Hulen St. Fort Worth, TX 76107
cell: 817-614-7848
Celestina.Grannum@mhmrtc.org

Celestina Grannum

early childhood services
MHMR TARRANT | WE CHANGE LIVES

FAMILY CONNECTS
NORTH TEXAS

APPENDIX F

HEALTH EDUCATION ASSOCIATES INC.

December 21, 2020

Health Education Associates Inc., holds the copyright for the two publications "Comprehensive Risk Assessment Tool for Breastfed Babies: Slow Weight Gain .... Failure to Thrive" and "Lactation Assessment & Comprehensive Intervention Tool (The LAT)" which have been created by Healthy Children Project faculty.

Please allow this letter to serve a permission to use these materials in the DNP project described by Tamekia Scaggs. Health Education Associates, Inc. will be shipping these materials to be used in the project without charge.

HEALTH EDUCATION ASSOCIATES INC.
327 Quaker Meeting House Road, East Sandwich, MA 02537
Toll Free (888) 888-8077 from 9 to 4, Monday - Friday; FAX (508) 888-8050

Appendix G
Chart Review Tool

ITEM	RESPONSE
BF1M	1=YES 2=NO
BF6M	1=YES 2=NO
RNCOMP	1=YES 2=NO

Appendix H

Staff Education Tool

Agenda for Nursing Staff Training-LAT

I. Brief overview of the LAT with permission granted.

II. Latch 1,2,3 video (from Amazon)

III. Discussion of breastfeeding issues (ie. incorrect latch techniques)

IV. Discussion of corrective interventions from the LAT

V. Global Health Media Project Breastfeeding videos MUTED without sound (attaching, positions, pain) from YouTube

VI. Assessment and discussion of LAT factors presented on the videos

VII. How to document nurse usage of LAT (with client) in the database.

VIII. How to document client breastfeeding maintenance at 1 month

IX. How to document client intent to breastfeed for 6 months.