

Virtual Lactation Support for Breastfeeding Mothers During the Early Postpartum Period

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Notes from the Author

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Abstract

Breastmilk is the clinical gold standard for infant feeding and nutrition. Although maternal and child health benefits are associated with breastfeeding, national, state, and local rates remain below target. In fact, 60% of mothers do not breastfeed for as long as intended. During the early postpartum period, mothers cease breastfeeding earlier than planned due to common barriers such as lack of suckling, nipple rejection, painful breast or nipples, latching or positioning difficulties, and nursing demands. Providers in the outpatient setting are significant resources to increase breastfeeding duration, eliminate common barriers, and improve breastfeeding practices. This paper discusses the implementation of virtual lactation support for breastfeeding mothers and families within an outpatient pediatric setting to reduce early cessation among breastfeeding mothers within the first four-week postpartum period.

Keywords: breastmilk, breastfeeding, lactation, four-week postpartum, virtual, support

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Section I. Introduction

Background

Breastfeeding is the optimal source of adequate nutrition for infants, with short-term and long-term benefits for infants and mothers (Anstey et al., 2016). Breastmilk provides infants with sufficient calories, nutrients, vitamins, and minerals needed for adequate growth and development of antibodies to fight diseases (Lin et al., 2020). According to United Nations Children's Fund [UNICEF] (2015), infants who receive breastmilk have a decreased risk of chronic childhood conditions such as obesity, high cholesterol, high blood pressure, diabetes, childhood asthma, and leukemia (UNICEF, 2015). In addition, breastmilk reduces the prevalence of childhood illness such as otitis media, gastrointestinal infections, respiratory infections, urinary tract infections, and late-onset sepsis in preterm infants (World Health Organization [WHO], 2020; UNICEF, 2015; American Academy of Pediatrics [AAP], 2020). Furthermore, maternal benefits of breastfeeding include reducing the risk of hypertension, diabetes mellitus, hyperlipidemia, coronary artery disease, myocardial infarction, obesity, decreased postpartum bleeding, and decreased risk for breast and ovarian cancer (AAP, 2020; Schwarz & Nothnagle, 2015). "If 90% of mothers in the United States were able to breastfeed for one year after every birth, an estimated 14,000 heart attacks, more than 4,000 premature maternal deaths, and close to 1,000 infant deaths could be prevented each year" (Schwarz & Nothnagle, 2015, p. 603).

The World Health Organization and United Nations Children's Fund recommend "breastfeeding initiation within the first hour of birth, exclusive breastfeeding for the first six months of life (with no other foods or liquids), and continued breastfeeding up to two years of age or beyond" (UNICEF, 2015; WHO, 2020). Barriers associated with a lower incidence of breastfeeding initiation and duration in rural areas are lack of education, support, access to

healthcare, and social and cultural norms (Goodman et al., 2016). In the United States, in 2017, the US National rate of infants ever breastfed was 84.1% (Centers for Disease Control and Prevention [CDC], 2020). Individuals who fell below the US national rate were non-Hispanic Black (73.7%), less than high school education (73.6%), younger than age 20 (74.0%), poverty income rate less than 100 (76.6%), and unmarried (75.1%) (CDC, 2020). In the United States, in 2017, 84.1% of women breastfed at birth, which decreases to 82.5% at 14 days, 80.1% at one month, and 71.2% at three months (CDC, 2020). During the postpartum period, outpatient pediatric providers can play a vital role in providing breastfeeding support and education (Farver, 2016). Common physical reasons for women discontinuing breastfeeding during the early postpartum period are lack of suckling or nipple rejection, and painful breast or nipples, which could be resolved with appropriate lactation support (Battersby, 2016). Providing breastfeeding support interventions within homes, communities, and healthcare facilities can reduce breastfeeding barriers and improve breastfeeding practices (Rollins et al., 2016).

Organizational Needs Statement

The project site, a rural pediatric clinic, has identified a need to improve lactation support and resources for breastfeeding mothers within the community (I. Bagley, personal communication, April 24, 2020). According to CDC (2020), 60% of mothers do not breastfeed for as long as they intended and cease breastfeeding earlier due to concerns with latching, infant nutrition, milk production, medication safety while breastfeeding, social and cultural norms, and lack of family support. Providers in outpatient settings are a significant resource to increase breastfeeding initiation and duration, eliminate barriers, and improve practices (Farver, 2016; Sriraman, 2017). Lactation consults and counselors offer breastfeeding families support, education, and assistance with managing breastfeeding concerns, which alleviates early cessation

of breastfeeding and helps families reach their breastfeeding goals (Patel & Patel, 2016). Offering virtual lactation sessions for breastfeeding mothers can provide community members' access to breastfeeding support and resources (I. Bagley, personal communication, April 24, 2020). Furthermore, utilizing telemedicine to provide lactation support to breastfeeding result in improved accessibility to lactation support, eliminates the need for transportation, and provides support for common postnatal breastfeeding barriers that lead to early cessation such as position, latch, frequency of nursing, and methods of expression (Friesen et al., 2015).

The project site provides services to community members in rural eastern, North Carolina. In 2019, the county's population was 180,742 people, 59.3% White, 35.7% Black or African American, and 6.3% Hispanic or Latino (United States Census Bureau, 2019). The number of residents age 25 years or older with a high school diploma or higher is 88.8%, which is higher than the state average (86.3%), the high school dropout rate of 2.1% in 2016-2017, was slightly lower than the state average (2.3%). As of March 2020, the unemployment rate in the project site county was 4.4%, which was higher than the state rate of (3.6%) (U.S. Bureau of Labor Statistics, 2020). In the project site county, 24.3% of adults, 18 years of age and older, live below the poverty line, and 28.2% of children, less than 18 years of age, live below the poverty line (Pitt County Government, 2019). Females and males ages 18-24 are the largest demographic groups, and Black or African Americans are the largest ethnic group living below the poverty line (Pitt County Government, 2019). Disparities in breastfeeding exist among various races, ethnicities, and socioeconomic groups (Anstey et al., 2016). Lower-feeding rates are prevalent among racial and ethnic minority women, low-income women, and participants in the Supplemental Nutrition Program for Women, Infants, and Children (WIC) (Jones et al., 2015). Among the WIC participants in the project site county, in 2018, 75.4% of infants were fully

formula-fed compared to 9.9% of infants fully breastfed (United States Department of Agriculture, 2019). In North Carolina, amongst WIC participants, in 2018, 69.4% of infants were fully formula fed compared to 12.7% of infants fully breastfed (United States Department of Agriculture, 2019).

In addition, *Healthy People 2020 Objectives MICH-21.1- MCH-21.5* addresses the need to increase the proportion of infants who are ever breastfed, breastfed at six months, exclusively breastfed through 3 months, and exclusively breastfed through 6 months (Office of Disease Prevention and Health Promotion [ODPHP], 2020). *Healthy People 2020 Objectives MICH-22- MICH-24* addresses the need to improve practices within hospitals and the workforce to enhance breastfeeding duration during the early postpartum period (CDC, 2020). From a national perspective, five of the eight objectives are met; however, opportunity remains with increasing the proportion and exclusivity of breastfeeding at 6 months and reducing the incidence of breastfeeding newborns receiving formula within the first two days of life (ODPHP, 2020). Additionally, from a state perspective North Carolina continues to fall below national breastfeeding targets, with the rate decreasing as the child ages (ODPHP, 2020). For example, at birth, the rates are 77.4, which decrease to 48.3 at 6 months and 24.5 at 12 months (ODPHP, 2020).

Healthy People 2030 Breastfeeding Objectives is to increase the proportion of infants breastfed exclusively through 6 months and who are breastfed at 1 year. From a national perspective, the United States fail to meet the target of 42.4% of infants breastfed through 6 months and 54.1% infants breastfed at 1 year. As of 2015, baseline rates of infants breastfed exclusively through 6 months was 24.9% and 35.9% at 1 year (ODPHP, 2020). Although

breastfeeding rates are improving within the nation, state and county, it is apparent continued opportunities for improvement remains.

Problem Statement

Mothers who choose to breastfeed are more likely to discontinue breastfeeding practices during the first four weeks postpartum period. Factors associated with mother's discontinuing breastfeeding during this time are concerns regarding infant latching and positioning, breastfeeding pain, and milk quantity or sufficient milk production (Farver, 2016). Adequate breastfeeding education and resources to support lactating mothers and families during the postpartum period could increase breastfeeding duration by enhancing breastfeeding self-efficacy and confidence (Ngo et al., 2019).

Purpose Statement

The purpose of the DNP project was to implement a virtual lactation session in rural, eastern North Carolina for breastfeeding mothers who are within the first four weeks postpartum. The goal was to provide an intervention that supports breastfeeding and increases breastfeeding adherence beyond the four weeks postpartum period.

Section II. Evidence

Literature Review

A literature review of using PubMed was conducted to search for evidence-based literature related to breastfeeding support in the primary care setting, solutions, and resources to address common barriers during the early postpartum period, and utilization of telemedicine to provide virtual education and support. MESH terms used for the search were breastfeeding difficulties, breastfeeding support, early breastfeeding cessation, and the postpartum period. The levels of evidence included in the search were meta-analysis, systematic reviews, and randomized controlled trials. The search was filtered to the English language, peer-reviewed, full text, and publications within the last five years. The initial search yielded 878 articles. Using the inclusion criteria of lactation consultants, breastfeeding barriers, breastfeeding practices, postpartum period, primary care setting, and full-term health infants reduced the search to fifty-three articles. The exclusion criteria were articles related to inpatient or community hospital setting and physiological aspect of milk production. Of the fifty-three articles, the titles and article summaries were reviewed for relatedness to the project topic with inclusion criteria of early postpartum period, breastfeeding support, self-efficacy, and early breastfeeding cessation. Exclusion criteria included studies related to prenatal and antepartum period, maternal chronic pain management, maternal obesity, and postpartum timeframe greater than two months. There were nineteen articles selected based on relevance and accessibility.

PubMed database was also used to search for articles that incorporated telemedicine or telehealth. Keywords used for the search were postpartum period, breastfeeding, feeding behavior, patient education, telemedicine, internet, mobile, and application. The search was filtered to English language, systemic reviews, and published within the last five years. This

search yielded 162 articles, and the titles and abstracts were reviewed. Studies were included that were related to telemedicine, telehealth, and breastfeeding education. Exclusion criteria included any articles that were not related to breastfeeding or the utilization of telemedicine specifically to provide breastfeeding education and support. Three articles were selected for application to this project.

Twenty-two articles were read in entirety to determine appropriateness and were included in the literature review. The levels of evidence were level I-IV. The articles selected provided evidence to support the implementation of virtual lactation educational and support sessions within a primary care setting (see-Appendix A).

Current State of Knowledge

The literature review suggested that providing breastfeeding support during the postpartum period correlates with increased breastfeeding duration (Chetwynd et al., 2019; Friesen et al., 2015; Hinic, 2016; Leea et al., 2019; Ngo et al., 2019; Patel & Patel, 2016). The postpartum period is a critical time when mothers experience breastfeeding difficulties, which leads to early breastfeeding cessation (Battersby, 2016; Brown et al., 2015; Farver, 2016). Common causes of early cessation identified during the postpartum period were improper positioning, breast pain, latching difficulty, frequency of nursing, and maternal perception of insufficiently milk supply (Battersby, 2016; Feenstra et al., 2018; Gianni et al., 2019; Jackson et al., 2019; Kent et al., 2016). Several studies suggested that the incorporation of adequate breastfeeding education and support related to the common causes identified could have prevented mothers from early cessation (Banbury et al., 2018; Battersby, 2016; Chetwyn et al., 2019; Leea et al., 2019).

Additionally, maternal self-efficacy, confidence, and postpartum anxiety regarding breastfeeding was identified as barriers throughout the literature (Brockway et al., 2017; Hinic, 2016; Fallon et al., 2016; Leea et al., 2019; Ngo et al., 2019; Ridgway et al., 2016; Wood et al., 2016). Postpartum anxiety and depression were also identified in the literature to correlate with early cessation (Brown et al., 2015; Henshaw et al., 2015). Lactation support from certified lactation consultants or knowledgeable health care professionals were identified as a sufficient method to provide mothers adequate support during the postpartum period (Banbury et al., 2018; Battersby, 2016; Chetwyn et al., 2019; Hasse & Brennan, 2019; Leea et al., 2019; Sayres & Vistenin, 2018).

Integrating information technology systems such as telemedicine and videoconferencing sessions were identified as viable methods to provide education and support to breastfeeding mothers and families to increase breastfeeding duration and prevent early weaning (Friesen et al., 2015; Tang et al., 2019). Additionally, DiFrisco et al. (2011) points out that utilizing a web-based platform and email have shown to increase participant response rate by 50% compared to telephone interviews.

The limitations identified in the literature were related to participants' demographics and limited availability of data related to lower income women, which was considered in this project. Furthermore, the limited data and research on lower income women limits data on the population that is at higher risk for early cessation within the project site's county. The study participants included in the literature review were characterized as higher-income, highly educated women who lived in wealthy areas, which is not a representation of the participants included in this project.

Current Approaches to Solving Population Problem(s)

Approaches found in the literature to reduce early breastfeeding cessation during the first-month postpartum period included ensuring adequate breastfeeding support and education for nursing mothers and families (Banbury et al., 2018; Battersby, 2016; Chetwyn et al., 2019; Leea et al., 2019). Various approaches to enhancing education and support suggested in the literature focused on shifting the paradigm of breastfeeding education and support into the outpatient setting. For example, gaps were identified between the knowledge, resources, and support available within the hospital settings compared to the community settings, which resulted in a lack of continuum of care and support for breastfeeding families after hospital discharge (Witt et al., 2019). Johnson et al. (2015) conducted a pilot study in eight rural and urban clinics that transitioned the breast-friendly hospital initiative into community health clinics to reduce disparities in breastfeeding rates, increase support within community clinics, and shift the breastfeeding culture within the community. This study concluded that there is feasibility for community clinics to transition to hospital breast-friendly initiatives and enhance breastfeeding support within the community (Johnson et al., 2015). A significant component of changing practices in primary care clinics is assessing the culture, changing behaviors, and transforming the environment (Meek & Hatcher, 2017). In comparison, Witt et al. (2019) found a positive correlation between lactation consultant and provider dyad with improved breastfeeding rates among pediatric clinics. A team-based approach to lactation support within the pediatric clinic can provide support to nursing families post-hospital discharge, which increases breastfeeding duration and can prevent early cessation (Witt et al., 2019).

Pediatric providers and obstetricians are two groups within the outpatient clinic setting that were highlighted in the literature as essential in shifting the accessibility of breastfeeding support within the community (Wallace et al., 2018). Rosen-Carole et al., (2016) conducted a

quality improvement project in a health center network without lactation consultants and found a correlation between the primary care provider and staffs' attitude and knowledge towards breastfeeding, and mothers' initiation and duration of breastfeeding practices. The quality improvement project focused on transitioning the culture to a breastfeeding-friendly. The providers and staff at the health center were trained, which resulted in improvement in breastfeeding practices improved, and an increase the intention and duration of breastfeeding practice's up to one year after birth (Rosen-Carole et al., 2016).

Chetwynd et al. (2019) conducted a systemic review and meta-analysis of the literature to identify sources that support the use of International Board-Certified Lactation Consultants (IBCLCs) and lactation counselors to provide lactation education, support, and breastfeeding programs during the postpartum period. Seventeen articles showed a positive correlation between increased breastfeeding duration with the utilization of IBCLCs and lactation counselors during the postpartum period. Similarly, Patel and Patel (2016) conducted a systemic literature review that found sixteen studies that yielded a positive correlation between the utilization of IBCLCs and lactation counselors during the postpartum period and improved breastfeeding outcomes.

Evidence to Support the Intervention

The intervention proposed was virtual lactation educational support sessions for mothers with the first four-week postpartum period. Leea et al. (2019) conducted a quasi-experimental study to examine the effectiveness of ICBCs performing breastfeeding support and education sessions the first and fifth-to-sixth week postpartum. A comparison was evaluated between the control group, participants that received standard care, and intervention group, participants that attended lactation education sessions and received support during the early postpartum period. This study concluded breastfeeding practices, exclusivity, and self-efficacy rates were

significantly higher among the intervention group (Leea et al., 2019). Furthermore, Friesen et al. (2015) conducted a qualitative study to evaluate the effectiveness of utilizing videoconferencing support and education sessions with an ICBCL for low-income women and families. The study found that the utilization of videoconferencing provided women and families in low-income areas access to breastfeeding experts and adequate education and support that would not have otherwise been available (Friesen et al., 2015).

Evidence-Based Practice Framework

Identification of the Framework

The frameworks used to execute this project were Rogers' Diffusion of Innovation Theory and Bandura's Self-Efficacy Theory. Diffusion of Innovation Theory provides a framework for refining new ideas or innovation using the following four change elements: innovation or new ideas, communication or diffusion of information, time, and social system (Rogers, 2003). The following five steps were considered: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003). The elements in Roger's theory were used during the implementation process to guide the adaptation of new ideas such as developing policies and recommendations for inclusion into practices and designing methods to ensure the sustainability of new practices.

Sustainability of new practices can occur if participants are adaptable to the new practice (Rogers, 2003). Bandura's Self-Efficacy Theory discusses that self-efficacy includes one's perception of the ability to perform and succeed in a new task (Bandura, 1977). There is an intense psychological relationship between an individual's perceived self-efficacy, behavior, and attitude towards change (Bandura, 1977). These two theoretical models work together to

effectively manage change and transform health care, which improves the overall delivery of quality care and impact health outcomes.

Ethical Consideration & Protection of Human Subjects

Institutional review board (IRB) approval at the University was required before implementation at the project site. Since the project was not conducted at a large institution, there was not an IRB process; therefore, the IRB process was only completed at the University. The project was deemed a quality improvement project and approval was obtained from the University (see-Appendix B). Next, the project site's administrator approval was obtained before implementation (see-Appendix C). Furthermore, the DNP student's completion of CITI modules was required by East Carolina University before implementation. Lastly, approval from the author of the original Breastfeeding Attrition Prediction Tool was obtained prior to implementation (see-Appendix D).

Participation in the virtual educational sessions was voluntary and anonymous. Privacy and confidentiality was maintained for all participants. Due to the group-focused sessions, confidentiality of participation was limited. Participants were assigned random numbers for data collection purposes. Data collected was non-identifiable and stored on a password-protected computer in a locked office that was only accessible by the project lead and site champion. There was no potential harm to participants, minimal risk to human subjects, and no conflict of interest for the student. A disclaimer statement was shared before each session regarding the intent of the educational support session was for informational purposes only, and medical advice will not be provided. This intervention was available to participants from various ethnic backgrounds, socioeconomic status, age, and educational levels. Since the project was implemented within a rural community access to the internet and access to a computer or electronic smart devices was

considered. Review of county data related to computer use and access to the internet was conducted before implementation, which yielded that 87.7% of households had a computer, defined as desktop or laptop, a smartphone, a tablet or other portable wireless computer, or some other type of computer, and 78.2% of households have a broadband internet subscription (United States Census Bureau, 2019).

Section III. Project Design

Project Site and Population

The project site was a rural pediatric clinic in eastern North Carolina that provides services to parents and children ages three days old through their 18th or 22nd birthday, if they attend college (I. Bagley, personal communication, February 24, 2020). The pediatric clinic has eight providers: five pediatric physicians, two physician assistants, and one family nurse practitioner who is also a certified lactation consultant. (I. Bagley, personal communication, February 24, 2020). The patient population at the clinic includes various races, ethnicities, socioeconomic status, and education levels. The project site populations' insurance payees source were Medicaid, private insurance, and self-pay. Medicaid was the insurance payee for 20.05% of the patient population, and insurance or self-pay was the payee source for 79.50% of the patient population (I. Bagley, personal communication, July 16, 2020).

Facilitators

Facilitators for this project included support from providers at the project site, DNP project team, and program directors. The project site expressed interest in utilizing telemedicine technology and virtual learning to provide breastfeeding support and education. The project site is currently utilizing telemedicine technology and social media platforms to provide baby care education (I. Bagley, personal communication, February 24, 2020). Sustainability of this DNP project was feasible, especially since the project site had previous experience and familiarity with utilizing telemedicine technology to provide education and support to patients and families. The global pandemic has forced people to become competent with the utilization of technology, telehealth, and virtual platforms as a societal norm to provide education and support that limits the need for face-to-face interactions.

Barriers

Barriers identified prior to implementation of the project were lack of access to the internet, computer, or smart device, and email account, which was required to participate in the virtual lactation sessions. The population served was primarily low-income, which could influence accessibility to the internet or devices required for participation. Another barrier identified was funding for the Zoom application to host the educational sessions. The project site utilized a free version of Zoom; however, there were limitations such as a maximum of 40-minutes allotted for webinar sessions. The sessions were scheduled for 1 hour, which includes 45 minutes for breastfeeding support content and 15 minutes for questions and answers. With the time constraint limitation with the free Zoom application, purchasing the full subscription was required. Additionally, since the project included a follow-up survey at each participant's 6-week postpartum period to evaluate the participant's breastfeeding status, the 10-week or less time constraint for project implementation was identified as a barrier.

Description of the Setting

The setting for this DNP project was a private pediatric outpatient clinic located in eastern North Carolina. The project site provides outpatient and inpatient services to a diverse patient population. Although a private practice, providers at the project site have privileges to practice at the local hospital to provide inpatient services for all newborns post-delivery, children, and adolescents who are admitted to the healthcare facility (I. Bagley, personal communication, February 24, 2020). Post-delivery, neonates are seen in the clinic within 24-72 hours based on the discharge date (I. Bagley, personal communication, July 16, 2020). Since this project is conducted virtually, patients within the target population can participate; not limited to only patients who visit the clinic during the implementation timeframe.

Description of the Population

The target project population is breastfeeding mothers in the first four weeks of the postpartum period. The inclusion criteria included 18 years of age or older, and breastfeeding a healthy full-term infant with no apparent abnormalities, or chronic conditions. Exclusion criteria included mothers younger than 18 years of age and preterm infant or infant with chronic medical conditions. Preterm or infants with chronic medical conditions are excluded to ensure safety for their medical conditions and limit disruptions in medical care due to the possible variability and complexities of their health conditions. Birth mode, parity, or previous breastfeeding experience did not influence participation.

Project Team

The DNP project team consisted of a DNP student, DNP faculty member, and project champion. The DNP student served as the project leader, who conducted the literature review, developed the project plan, coordinated implementation, data collection and analysis, and disseminated findings to the project lead and clinic directors. The DNP faculty was a doctoral prepared neonatal nurse practitioner who serves as the DNP student's mentor. The project champion was a family nurse practitioner and International Board-Certified Lactation consultant who served as the DNP student's clinical practice mentor and project partner. Additionally, the project champions provided expertise and knowledge about breastfeeding, assist with financial support, recruitment of participants, and addressed site-specific concerns.

Project Goals and Outcome Measures

The goal of this DNP project was to provide an intervention that supported breastfeeding mothers during the first four weeks postpartum. The outcome measure was to increase breastfeeding mothers' adherence to breastfeeding beyond the first four weeks postpartum period.

Description of the Methods and Measurement

This project aimed to improve breastfeeding adherence, and the goal was to increase the prevalence of breastfeeding within a rural community. A convenience sampling was used since participants were established patients at the pediatric outpatient clinic. Participation in this project was voluntary. The Breastfeeding Attrition Prediction Tool (BAPT) is a validated and reliable tool developed by Jill Janke in 1994 based on the theory of planned behavior (see-Appendix E). This tool was distributed to participants during pre-registration and via email post-intervention. At each participant's 6-week post-partum period, the plan was to share a follow-up questionnaire with each participant via email to assess current breastfeeding status. The follow-up data collection tool was developed by the DNP student to evaluate participants' breastfeeding status specific to participants in this project (see-Appendix F). Participants' responses were anonymous and each patient received a randomly assigned patient identification number to maintain confidentiality.

Discussion of the Data Collection Process

The instruments used for this project were the Breastfeeding Attrition Prediction Tool (BAPT), which evaluates breastfeeding mothers' attitude, perception, and behavior towards breastfeeding to predict mothers who are likely to cease breastfeeding early (Janke, 1994). The BAPT has five sections to assess the following components (a) mothers' perception of breastfeeding compared to formula feeding, (b) factors that influence mothers' decision to breastfeed, (c) mothers' support system perception, (d) mothers' support system influence on breastfeeding behavior, and (e) mothers' attitude towards breastfeeding. The BAPT was used pre- and post-attendance to the virtual lactation session. The pre-intervention participant responses were compared to the participants' post-intervention responses to analyze participants'

sentiment towards breastfeeding and likelihood of early cessation. The modified BAPT was a 30-question 4-point Likert scale questionnaire that was completed within a 3-5 minute timeframe for each participant. The participants' responses were calculated to determine their positive or negative sentiment towards breastfeeding. The plan was at the six-week postpartum period, participants would be emailed a breastfeeding status survey composed of six questions to determine adherence to breastfeeding beyond the four weeks postpartum period. Data would not be included for participants who six-week postpartum period occurred after the end of the data collection timeframe.

The BAPT survey was transcribed into an electronic survey tool and emailed to each participant. A bar graph was used as a visual to compare participants' pre- and post-intervention responses to the modified BAPT questionnaire. Participant response data was stored electronic survey warehouse was transcribed into an excel spreadsheet for analysis and trending.

Implementation Plan

The project implementation tool was the Plan-Do-Study-Act (PDSA) cycle. The PDSA cycle was selected for this project because of the feasibility of implementing small, rapid changes over time until the desired goal is achieved. A series of virtual interactive webinar sessions for breastfeeding women during the first four weeks postpartum period were implemented to impact breastfeeding adherence beyond the first four-week postpartum period.

The webinar sessions were scheduled for 1-hour. Each 1-hour session consisted of a power-point presentation that included breastfeeding educational content, and an opportunity for participants to ask questions or share experiences. The DNP student facilitated the biweekly sessions with support from the project site champion. The minimum requirements for

participation in the webinars were an internet connection, an audio connection (i.e. phone, computer speaker, and headset), and a valid email.

A PowerPoint presentation was used as a visual aide to supplement the oral content presented during the webinar. The educational content encompassed (a) maternal and fetal benefits of breastfeeding, (b) common barriers to breastfeeding, (c) common causes of breastfeeding cessation during the first four weeks of the postpartum period, and (d) solutions to common barriers including local, state, and national resources.

Participants were recruited from the project site. A flyer was developed with dates for the virtual webinar sessions, registration instructions, and contact information, including the DNP student's telephone number and email for any questions or concerns. The flyers were posted throughout the clinic waiting rooms and on the project site's social media platforms. Since there were multiple sessions offered, a requested timeframe for participants to complete the pre-registration questionnaire was one week prior to each participants scheduled session.

In addition to the pre-registration questionnaire, participants were asked to complete the pre-intervention BAPT questionnaire one week prior to their scheduled sessions. Within 48 hours after each webinar session, participants were emailed the post-intervention evaluation BAPT questionnaire. Participants who were not within the first four weeks postpartum period who were interested in attending the training session were allowed to attend; however, the data was excluded from this project. Since participants were not within the target population, the follow-up survey to assess their breastfeeding status did not occur and data was not obtained.

Timeline

Project implementation occurred over an eight-week timeframe, and findings were shared with the project site champion. The plan was to schedule a follow-up interview at each

participant's sixth postpartum week, which means each participant's date may vary based on the postpartum week the participant attended the virtual sessions. Project presentation to the DNP committee occurred approximately six months after initial implementation.

Section IV. Results and Findings

Results

The aim of this project was to measure adherence to breastfeeding beyond the first four-week post-partum period in a rural community in eastern North Carolina. A modified version of the Breastfeeding Attrition Prediction Tool was used pre-and post-intervention to evaluate maternal breastfeeding satisfaction, knowledge, attitude, and breastfeeding self-efficacy. This project expected that breastfeeding mothers' maternal breastfeeding satisfaction, knowledge, attitude, and self-efficacy would improve post-intervention compared to pre-intervention, theoretically decreasing the likelihood of cessation during the early postpartum period.

Two participants volunteered to participate in the quality improvement project and attended one virtual lactation session. One participant was sixteen weeks post-partum, and the second participant was in the fourth trimester of pregnancy. Although participants did not meet criteria for this quality improvement project, each participant was emailed the pre-and post-intervention questionnaire. The participants completed the pre-and post-questionnaire, and results were shared with the project site champion. Since the participants did not meet the target population, the data was not included for this project. Additionally, since there were no mothers to contact for evaluation of breastfeeding status during the 6-week post-partum period, adherence beyond the first four-weeks was not evaluated.

Outcomes Data

An outcome measure to consider was that the modified Breastfeeding Attrition Prediction Tool could be utilized to assess a mother's likelihood of early cessation during the prenatal, early postpartum, and late postpartum periods. Although participants within the target population did not participate, data was collected for participants who participated that were not

within the target population. The data revealed each participant's positive breastfeeding sentiment score remained higher than the negative breastfeeding sentiment score pre-and post-intervention, which means the risk of early cessation is less likely for each participant.

Despite the lack of outcome data for this project, there were process measures identified. The initial project plan was to recruit breastfeeding mothers during the initial newborn visit, which is 24-72 hours after discharge from the hospital. However, during project implementation, the project site did not have any newborns join the clinic, which was not considered during project planning. Next, a process measure opportunity was identified with the number of patients who received a lactation consultation referral. The project identified that although the Family Nurse Practitioner functions in a dual role at the project site, lactation consultant referrals were low and providers at the project site were not utilizing the lactation services. Lastly, the initial plan was for the DNP student to conduct weekly chart reviews to identify potential patients at the site within the target population.

In addition, given the global pandemic, the project's original dissemination plan was amended. The initial plan was for the DNP student to meet and recruit potential participants at the clinic to provide details about the project. The plan was for participants would register and complete the pre-questionnaire during the visit. Instead, an online registration option was developed and posted on social media that provided automatic email notification to the DNP student and project site champion of potential participants who signed up to volunteer. Also, given the global pandemic, face-to-face meetings with potential participants at the project site during scheduled patient visits did not occur.

Additionally, due to the global pandemic, the DNP project site limited face-to-face meetings; therefore, pre-recorded videos about the project and facts about breastfeeding were

shared biweekly via the project site's social media to provide vast dissemination of information and gain possible participants. Unfortunately, the number of views for each video could not be retrieved from the project site's social media page.

Discussion of Major Findings

Lactation sessions were available biweekly during the project implementation timeframe, and two virtual lactation sessions were conducted. Two volunteers attended one session, and in the second session, the volunteer was a no show. The educational video on social media was attributed to each participant's knowledge of the virtual sessions.

Although the project did not yield results as expected, and the target population of mothers who were within the first four-week post-partum period did not participate, areas of opportunity were identified. First, the lifestyle changes that occur during the early post-partum should be considered. During this sensitive time, competing priorities are more prevalent such as transitioning into the mother role and roles and responsibilities within families are changing, which could influence participation rates among the target population. Secondly, since views of the breastfeeding video were not obtained, the impact the views had on participation were not evaluated, which limited the ability to measure the intervention's impact and outcome. Thirdly, low utilization of lactation consult at the project site indicates a need to evaluate other providers' lactation education process, the rationale for low utilization of the lactation consultant, and the providers preferred educational and support methods. Although a lactation consultant is not required to support breastfeeding families, the provider-lactation consultant dyad can be a beneficial resource for mothers and families. Lastly, since the patient portal database needed to determine potential participants was not being utilized as expected, the portal was not available to conduct chart reviews. As a result, there was no list of patients available for review.

Section V. Interpretation and Implications

Cost-Benefit Analysis

The project would have cost the organization about \$263, which includes the cost of equipment, supplies, and educational material (Table 1). This cost can fluctuate for the organization depending on the cost for internet services and quantity of educational supplies needed. Since the lactation consultant functions in a dual role at this organization, a lactation consultant's cost was not included. If a lactation consultant was not available at the site, a consultant could be hired for an hourly rate. If the fee for lactation consultation was included, the project's cost would increase to \$415.00, which includes \$15.00/hr for approximately 10 hours for the lactation consultant to host virtual six 1- hours virtual along with time to review material and develop the presentations (Table 2). Additionally, for this project, an online database was used to create and distribute surveys, which cost \$26.00/month; however, an alternate online platform or excel spreadsheet could be utilized. Since the project site has access to a print shop to print flyers and clerical staff to manage documents, this saved additional organizational expenses.

Item	Quantity	Cost	Total
Educational Seminar Speakers			
Lactation Consultant			
Service Fee	10	\$15.00	\$0.00
DNP Student			
Service Fee	0	\$0.00	\$0.00
Educational Webinar Equipment			
Zoom Video Conference Pro	1	\$149.90	\$149.90
Internet Connection	1	\$49.99	\$49.99
Laptop or Smart Device	1	\$50.00	\$50.00
Educational Seminar Supplies			
Breastfeeding Educational Flyer	30	\$0.20	\$6.00
Breastfeeding Informational Packet	30	\$0.10	\$3.00
Folders	15	\$0.25	\$3.75
Total			\$262.64

Item	Quantity	Cost	Total
Educational Seminar Speakers			
Lactation Consultant			
Service Fee	10	\$15.00	\$150.00
DNP Student			
Service Fee	0	\$0.00	\$0.00
Educational Webinar Equipment			
Zoom Video Conference Pro	1	\$149.90	\$149.90
Internet Connection	1	\$49.99	\$49.99
Laptop or Smart Device	1	\$50.00	\$50.00
Educational Seminar Supplies			
Breastfeeding Educational Flyer	30	\$0.20	\$6.00
Breastfeeding Informational Packet	30	\$0.10	\$3.00
Folders	15	\$0.25	\$3.75
Total			\$412.64

According to the CDC (2020), increasing breastfeeding rates can save more than \$3 billion annually in medical costs for mothers and children in the United States. The financial gain for the organization and overall healthcare expenditure is apparent. In addition, the maternal and fetal benefits associated with breastfeeding have a long-term impact on quality of life for mothers and children. Unfortunately, due to lack of participation during the implementation timeframe, there was insufficient data to generalize if the organization had a good return on investment.

Resource Management

The project site has an International Board Certified Lactation Consultant who functions in a dual role as a Family Nurse Practitioner and International Board Certified Lactation Consultant (ICLBC), which eliminated the need to hire a lactation consultant and provided a credible resource to assist with project material, education, and support. The project site had an established breastfeeding group on social media that included access to mothers who were breastfeeding, have breastfed, or were planning to breastfeed. The established social media

breastfeeding group was utilized to recruit participants and disseminate information about the project. The organization had previously offered baby care classes via a virtual platform to patients at the clinic; therefore, participants were familiar with utilizing virtual platforms to receive education and support and had experience navigating through the process. The practice provided access to the full version of Zoom, which allowed the capability to host larger conferences and provide an extended timeframe.

On the other hand, there were resource barriers identified that impacted project implementation. One barrier that significantly influenced the project was the providers buy-in. Although the providers were agreeable before implementation, providers did not offer patients the resources during patient encounters. In addition, there was a decline in new patients joining the clinic, which limited access to breastfeeding mothers within the first four-week postpartum period. Furthermore, due to the global pandemic, there was an increase in cancellations for annual well-child exams and lactation consultation, which decreased the number of patients presenting who could have volunteered after viewing the flyers posted throughout the clinic.

Next, there was a shift in priorities and resources at the clinic due to the pandemic, which limited the DNP student's feasibility to present the project plan or host informational sessions with the providers at the project site. Additionally, the organization did not have a way for the DNP student to identify patients at the clinic that could potentially participate; therefore, the student relied on patient visualization of the flyers posted throughout the clinic and social media views. Moreover, the new patient portal could have been a resource to identify patients within the target population; therefore, hardwiring the process before implementation could have provided a resource to identify potential patients.

Implications of the Findings

The expected implication of findings was to identify mothers who are likely to cease breastfeeding during the early post-partum period and provide education and support to decrease the risk of early cessation. Participants at risk of early cessation were evaluated, and two participants were identified as less likely to cease breastfeeding. Due to the lack of participants within the target population, this project could not assess if there was an increase in adherence beyond the first four-week post-partum period.

However, this project did identify systemic-level opportunities for improvement that can affect the organization's ability to improve the quality of care and breastfeeding duration within the outpatient setting. For example, increasing providers' utilization of lactation consultation referrals could enhance breastfeeding initiation and duration at the project site. Next, establishing a reputable lactation consultant and provider dyad, and obstetrical and pediatric provider partnership could build a supportive environment for breastfeeding at the project site and within the community. Incorporating each component could positively affect the project site's ability to improve breastfeeding practices.

In addition, this project has identified areas of opportunity for future implementation. For example, establish an understanding of the provider's knowledge, awareness, and support for the project before implementation, which could positively influence recruitment, quantity of participants, and provider participation during implementation. Additionally, consider identifying the current breastfeeding population at the project site during project planning, selecting the project's target population based on the clinic's breastfeeding population, and tailoring project interventions to that specific population increases the likelihood of successful implementation. Since virtual platforms provide access to mass dissemination of information that can be beneficial for networking and recruiting participants, include an information technologist

as a project team member. The information technologist would provide technical support, graphical design of project material, assistance with virtual registration process, assist with data management, and assist with digital dissemination the project within the community to enhance participation and develop partnership community resources.

Implications for Patients

Since breastfeeding self-efficacy and confidence is critical to increasing breastfeeding adherence, a modified Breastfeeding Attrition Predication Tool was used to identify mothers who are at risk for early cessation and evaluate maternal breastfeeding satisfaction, knowledge, attitude, and breastfeeding self-efficacy. Furthermore, the modified Breastfeeding Attrition Prediction Tool could be used as a resource for mothers to self-identify, evaluate, and become situationally aware of their sentiment towards breastfeeding. If mothers recognize a negative sentiment, this provides an opportunity to seek consultation, support, and resources to amend the behavior before it becomes insurmountable.

Additionally, providing virtual lactation education and support offers a continuum of support for mothers and breastfeeding families. After hospital discharge, lactation resources are critical to exclusivity and duration of breastfeeding for nursing mothers; therefore, providing a resource within the pediatric outpatient clinic offers a continuum of support post-discharge for breastfeeding mothers and their families (Witt et al., 2019). Providing virtual lactation support during the critical first four-week postpartum period offers convenient, accessible resources to nursing mothers during a crucial, life-changing period. In addition, providing virtual lactation sessions during the pandemic decreases the risk of spreading COVID-19 to a high-risk population while providing a vital resource that can lead to long-term health benefits. Increasing breastfeeding adherence beyond the first four-week postpartum period improves health outcomes

for mothers and babies, resulting in decreased healthcare expenditure, childhood and maternal illnesses, and an increase in healthier mothers and children (CDC, 2020). Furthermore, offering various modalities of teaching such as visual, audio, video, and written content provides a multifactorial approach to adult learners, which positively influences various participants' reception of information and learning styles.

Implications for Nursing Practice

Virtual lactation sessions offer a convenient platform for breastfeeding mothers and healthcare providers to communicate, with patients from various locations. This virtual access provides patients access to care, remote monitoring and learning, and ability for healthcare providers provide care to patients in their natural environment. As part of the hospital baby-friendly initiatives, an abundance of breastfeeding education occurs in the hospital; therefore, it is essential to continue the same support and education after discharge. Virtual lactation support and knowledge within the outpatient pediatric clinics provides a continuum of support during that transition from inpatient hospitalization to the outpatient setting. The use of telehealth to provide lactation support increases patient participation, provider support, and breastfeeding adherence (Banbury et al., 2018). Breastfeeding education and support are essential for breastfeeding exclusivity and duration, positively influencing healthcare outcomes for patients and communities (Banbury et al., 2018; Battersby, 2016; Chetwyn et al., 2019; Leea et al., 2019).

Impact for Healthcare System(s)

Breastfeeding can decrease childhood and adult illnesses, which reduces neonatal and maternal mortality rates, and reduces the prevalence of obesity, cardiovascular disease, metabolic disorders, and cancer (AAP, 2020; Schwarz & Nothnagle, 2015). Offering virtual lactation

sessions expands access to lactation support and resources to the population from any smart devices. If internet access was not available, participants were provided access to a conference telephone number for audio conferencing. Utilizing the virtual platform eliminated the need for transportation to receive education and support within a rural community with limited public transportation access. Increasing breastfeeding duration leads to improved maternal and fetal health outcomes, which affects the population's health and well-being.

In addition, providing a continuum of breastfeeding support and education from the inpatient hospital to outpatient setting can positively influence hospitals meeting and sustaining breastfeeding-friendly initiatives. The continuum of support can serve to meet the needs of the people, community, and overall healthcare system.

Sustainability

Sustainability of the project is feasible at the project site, and the project site plans to continue to use this project. The power-point presentation used during the virtual lactation sessions and recruitment materials, such as recruitment videos, online registration, and participant packets, were shared with the project site champion. The project site has access to the extended Zoom licensure, which provides features that are not available with the free version. The social media platform used to recruit participants and offer free online registration was already established at site the project site. In addition, since the project site champion functions in dual roles as a Family Nurse Practitioner and Lactation Consultant, there is no need for additional staff. If the project site did not have a lactation consultant, a nurse practitioner or lactation trained provider could serve in this role. Although an online platform was used to manage the -questionnaire, the project site could use an alternative method that is cost-friendly and convenient. In addition, although the DNP student provided printed flyers to the project site,

the project site has an established budget for printing materials. The handouts could be included in the budget, and durable posters can be purchased to prevent the need to print additional flyers due to wear and tear over time.

Dissemination Plan

Dissemination of this project includes collaborating with the public health department and outpatient obstetrical/gynecological clinics. One dissemination plan is to collaborate with the County Public Health Department Breastfeeding Program to present this project virtually to community members and share project material, including the original and modified Breastfeeding Prediction Attrition Tool with the breastfeeding peer counselor and coordinator for future use within the health department. The target audience for the presentation will be breastfeeding women and families who are currently breastfeeding or planning to breastfeed. The anticipated date of the presentation will be during breastfeeding awareness month. The goal is for the health department to incorporate early cessation screening into their practice.

Next, the plan is to collaborate with a local outpatient obstetrical clinic to share the virtual lactation resources in the county the project was implemented. The anticipated date of completion is June 2020. The collaboration with the obstetrical outpatient clinics provides a resource that can be shared with expecting mothers who are planning to breastfeed. This project can initiate the discussion regarding barriers and solutions to early cessation and provide recommendations regarding building a supportive breastfeeding network among families.

Lastly, the project was uploaded into East Carolina University "The ScholarShip" database. This database provides ECU faculty, staff, and students' access to digital archive of scholarly papers. This provides faculty, other healthcare providers, and future students' access to

this information, which allows expansion to other regions or scaffolding with future DNP projects, and recommendations for current practices or future studies.

Section VI. Conclusion

Limitations

There were limitations identified during project planning and implementation. During project planning, a limitation was identified with the lack of communication with the project site champion due to the global pandemic and shift in priorities, which created a delay with project planning. In addition, the global pandemic posed as a barrier to project implementation and participant recruitment. The original plan included the DNP student presenting the project to the project site employees, explaining to the project site to recruit and register participants, and discussing the project with potential participants face-to-face during their visits. Due to institution restrictions, the DNP student was not allowed to present to the project site, and the project site employees were unavailable virtually or face-to-face for informational sessions about the project due to a shift in priorities at the site.

Secondly, a limitation was identified related to the availability of patients within the target population. The original plan was to recruit participants during the initial newborn visit, which occurs 24-72 hours after discharge from the hospital. Since there were no neonatal patients that joined the clinic during the implementation phase, this impacted the ability to recruit patients who were within the target population for this project.

Thirdly, during project implementation, the project site champion continued to conduct lactation visits with patients, which led to decreased interest in the project. Although the resource was offered during the lactation visit, patients declined because their questions and concerns were addressed during the lactation visit.

Lastly, providers at the clinic were not offering the virtual lactation sessions during each patient encounter or posting the flyer in their patient rooms. The lack of provider buy-in at the clinic could have contributed to the lack of participants.

Recommendations for Others

The possibilities with this project are endless. Breastfeeding initiation, duration, and exclusivity can affect individuals who are within the pre-conception planning phase to breastfeeding mothers and families who have established an individualized breastfeeding goal, which can extend to children two years of age and beyond. Recommendations for others is to ensure discussions with project champion and project site employees about recruitment strategies and formulate a definitive plan during the project planning phase. Ensure the recruitment plan encompasses various methods to acquire participants, including volunteers within the prenatal period, post-delivery, including before hospital discharge, home births, and birthing centers. During the planning phase, including an information technologist as part of the project team to help with technological issues that the presenter or participants may encounter, disseminate information, or track and analyze data.

In addition, during the planning phase, discuss the project with all team members and gather information on their personal views about breastfeeding and current management and strategies utilized with breastfeeding mothers and families. Gain knowledge about all providers' current practices, practice standards, and baseline knowledge about breastfeeding. Obtaining provider buy-in at the project site is essential to successful project implementation; therefore, ensure to assess provider buy-in before starting the project to ensure providers are onboard. Additionally, designate time during the project-planning phase to allow providers a platform to address questions and concerns, and provide recommendations regarding the process. Also, offer

educational sessions with project site providers and staff before project implementation to share project details, raise awareness, and gain feedback.

Recommendations Further Study

Future study recommendations include implementing virtual lactation education and support to patients during the family planning phase, prenatal period, and late postpartum period. Utilize the Breastfeeding Attrition Prediction Tool as a resource to screen mother's sentiment towards breastfeeding. Identify areas of concern sooner, which could lead to implementing interventions earlier and preventing early cessation. Consider collaborating with outpatient obstetrical providers, the local community health department, and community pediatric clinics. Tailor the education to the specific population and identify areas of concerns for that population, provide solutions to common barriers, and provide local, state, and national resources. Additionally, assess the population's baseline knowledge about breastfeeding, technological experience levels, and preferred education methods to tailor education and support to the needs of the population served.

Lastly, provide multiple modes of registration that are convenient and easily accessible to the population. For example, quick response (QR) codes or alternative methods for patients to auto-populate registration forms from the flyer through utilization of a smart device. If educational videos are utilized, track the views, and evaluate the impact the views of the educational videos have on participants. Consider multiple virtual methods and use of technology fully for patient recruitment and project material dissemination.

Conclusion

Breastfeeding is the optimal nutrition source that provides maternal and child benefits that can positively influence health outcomes for mothers and children. Although an optimal

source of nutrition, breastfeeding rates continue to remain below national targets with a known decline in rates as the neonate ages, which leads to a lowered breastfeeding duration rates.

Implementing virtual lactation sessions within pediatric clinics can increase maternal breastfeeding adherence and breastfeeding duration rates. This project demonstrated that incorporating virtual lactation education and support in pediatric outpatient settings provides breastfeeding mothers with access to resources during the early postpartum period to address early cessation barriers and improve breastfeeding adherence. Although data was not obtained to support an increased breastfeeding adherence among mothers during the early postpartum period, the project did demonstrate that the risk of early cessation could be evaluated and identified before cessation. The early recognition of mothers at risk for cessation could lead to the early implantation of interventions and support that could halt the rate of early cessation, increase breastfeeding adherence, and improve overall health outcomes.

References

- American Academy of Pediatrics. (2020, April 10). Benefits of breastfeeding. <https://www.aap.org/en-us/advocacy-and-policy/aap-health-initiatives/Breastfeeding/Pages/Benefits-of-Breastfeeding.aspx>
- Anstey, E. H., MacGowan, C. A., & Allen, J. A. (2016). Five-year progress update on the surgeon general's call to action to support breastfeeding, 2011. *Journal of Women's Health, 25*(8), 768-776. doi: 10.1089/jwh.2016.5900.
- Banbury, A., Nancarrow, S., Dart, J., Gray, L., & Parkinson, L. (2018). Telehealth interventions delivering home-based support group videoconferencing: Systematic review. *Journal of Medical Internet Research, 20*(2), e25. doi: 10.2196/jmir.8090.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.
- Battersby, S. (2016). Guide to supporting mothers to sustain breastfeeding. *British Journal of Midwifery, 24*(1), 1-7. <https://assets.markallengroup.com//article-images/142949/Supporting%20mothers%20to%20sustain%20breastfeeding.pdf>
- Brockway, M., Benzies, K., & Hayden, K. A. (2017). Interventions to improve breastfeeding self-efficacy and resultant breastfeeding rates: A systematic review and meta-analysis. *Journal of Human Lactation, 33*(3), 486-499. doi: 10.1177/0890334417707957
- Brown, A., Rance, J., & Bennett, P. (2015). Understanding the relationship between breastfeeding and postnatal depression: the role of pain and physical difficulties. *Journal of Advanced Nursing 72*(2), 273–282. doi: 10.1111/jan.12832.
- Centers for Disease Control and Prevention. (2020, June 21). Breastfeeding report card. <https://www.cdc.gov/breastfeeding/data/reportcard.htm>

Centers for Disease Control and Prevention. (2020, June 21). Facts.

<https://www.cdc.gov/breastfeeding/data/facts.html>

Centers for Disease Control and Prevention. (2020, August 10). Results: Breastfeeding rates.

https://www.cdc.gov/breastfeeding/data/nis_data/results.html

Chetwynd, E. M., Wasser, M., & Poole, C. (2019). Breastfeeding support interventions by International Board Certified Lactation Consultants: A systemic review and meta-analysis. *Journal of Human Lactation*, 35(3), 424-440. doi: 10.1177/0890334419851482.

DiFrisco, E., Goodman, K. K., Budin, W. C., Lilienthal, M. W., & Holmes, B. (2011). Factors associated with exclusive breastfeeding 2 to 4 weeks following discharge from a large, urban, academic medical center striving for baby-friendly designation. *The Journal of Perinatal Education*, 20(1), 28–35, doi: 10.1891/1058-1243.20.1.28.

Fallon, V., Groves, R., Halford, J. C. G., Bennett, K. M., Harrold, J. A., (2016). Postpartum anxiety and infant feeding outcomes. *Journal of Human Lactation*, 32(4), 740-758. doi: 10.1177/0890334416662241.

Farver, M. C. (2016). A model of outpatient lactation care. *Journal of Women's Health*, 2(2), 1-7. doi: 10.15406/mojwh.2016.02.00025.

Feenstra, M. M., Kirkeby, M. J., Thygesen, M., Danbjorg, D. B., & Kronborg, H. (2018). Early breastfeeding problems: A mixed method study of mothers' experiences. *Sexual & Reproductive Healthcare*, 16, 167-174. doi: 10.1016/j.srhc.2018.04.003.

Friesen, C. A., Hormuth, L. J., Petersen, D., & Babbitt, T. (2015). Using videoconferencing technology to provide breastfeeding support to low-income women. *Journal of Human Lactation*, 31(4), 595-599. doi: 10.1177/0890334415601088.

- Goodman, L., Majee, W., Olsberg, J. & Jefferson, U. (2016). Breastfeeding barriers and support in rural setting. *The American Journal of Maternal/Child Nursing*, 41(2), 98-103. doi: 10.1097/NMC.0000000000000212.
- Gianni, M. L., Bettinelli, M. E., Manfra, P., Sorrentino, G., Bezze, E., Plevani, L., Cavallaro, G., Raffaelli, G., Crippa, B. L., Colombo, L., Morniroli, D., Liotto, N., Roggero, P., Villamor, E., Paola Marchisio, P., & Mosca, F. (2019). Breastfeeding difficulties and risk for early breastfeeding cessation. *Nutrients*, 11(10), 2266. <https://doi.org/10.3390/nu11102266>
- Hasse, B., Brennan, E. (2019). Effectiveness of the IBCLC: Have we made an impact on the care of breastfeeding families over the past decade? *Journal of Human Lactation*, 35(3), 441-452. doi: 10.1177/0890334419851805.
- Henshaw, E. J., Fried, R., Siskind, E., Newhouse, L., & Cooper, M. (2015). Breastfeeding self-efficacy, mood, and breastfeeding outcomes among primiparous women. *Journal of Human Lactation*, 31(3), 511-518. <https://doi.org/10.1177/0890334415579654>.
- Hinic, K. (2016). Predictors of breastfeeding confidence in the early postpartum period. *Journal of Obstetric, Gynecologic, and Neonatal Nursing* 5(5), 649-660. doi: 10.1016/j.jogn.2016.04.010.
- Jackson, K. T., Mantler, T., & O'Keefe-McCarthy, S. (2019). Women's experiences of breastfeeding-related pain. *The American Journal of Maternal Child Nursing*, 44(2), 66-72. doi: 10.1097/NMC.0000000000000508.
- Janke, J. R. (1994). Development of the breast-feeding attrition prediction tool. *Nursing Research*, 43(2), 100-104.

- Johnson, D. B., Lamson, E., Schwarts, R., Goldhammer, C., & Ellings, A. (2015). A community health clinic breastfeeding-friendly pilot: What can we learn about the policy process? *Journal of Human Lactation*, *31*(4), 660-670. doi: 10.1177/0890334415579656.
- Jones, K. M., Power, M. L., Queenan, J. T., & Schulkin, J. (2015). Racial and ethnic disparities in breastfeeding. (2015). *Breastfeeding Medicine*, *10*(4), 186-196. doi:10.1089/bfm.2014.0152.
- Kent, J. C., Gardner, H., & Geddes, D. T. (2016). Breastmilk production in the first 4 weeks after birth of term infants. *Nutrients*, *8*(12), 756. doi: 10.3390/nu8120756.
- Leea, Y., Chang, G., & Changa, H. (2019). Effects of education and support groups organized by IBCLCs in early postpartum on breastfeeding. *Midwifery*, *75*, 5-11. doi: <https://doi.org/10.1016/j.midw.2019.03.023>
- Lin Y. H., Hsu Y. C., Lin M. C., Chen C. H., Wang T. M. (2020) The association of macronutrients in human milk with the growth of preterm infants. *PLoS ONE* *15*(3): e0230800. <https://doi.org/10.1371/journal.pone.0230800>
- Meek, J. Y. & Hatcher, A. J. (2017). The breastfeeding-friendly pediatric office practice. *American Academy of Pediatrics*, *139*(5), e1-39. doi: 10.1542/peds.2017-0647.
- Ngo, L. T. H., Chou, H., Gau, M., & Liu, C. (2019). Breastfeeding self-efficacy and related factors in postpartum Vietnamese women. *Midwifery*, *70*, 84-91. doi: 10.1016/j.midw.2018.12.014.
- Office of Disease Prevent and Health Promotion. (2020, March 29). State-level data. Healthy People 2020. <https://www.healthypeople.gov/2020/data/map/4859?year=2015>

- Patel, S., & Patel, S. (2016). The Effectiveness of Lactation Consultants and Lactation Counselors on Breastfeeding Outcomes. *Journal of Human Lactation*, 32(3), 530–541. doi: 10.1177/0890334415618668.
- Pitt County Government. (2020, March 11). *Pitt County Community Needs Assessment*. <https://www.pittcountync.gov/DocumentCenter/View/9719/Pitt-County-2019-CHNA-FINAL-August-2019>
- Ridgway, L., Cramer, R., McLachlan, H. L., Forster, D. A., Cullinane, M., Shafiei, T., & Amir, L. H. (2016). Breastfeeding support in the early postpartum: Content of home visits in the SILC trial. *Birth* 43(4), 303-312. doi: 10.1111/birt.12241.
- Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed.). Simon & Schuster, Inc.
- Rollins, N. C., Bhandari, N., Hajeebhoy, N., Horton, S., Lutter, C. K., Martines, J. C., Piwoz, E. G., Richter, L. M., & Victora, C.G. (2016). Why invest, and what it will take to improve breastfeeding practices? *The Lancet*, 387(10017), 491-504. doi: [https://doi.org/10.1016/S0140-6736\(15\)01044-2](https://doi.org/10.1016/S0140-6736(15)01044-2)
- Rosen-Carole, C., Waltermaurer, E., Goudreault, M., Larimer, A., Pokharel-wood, M., Rajupet, S., & Kouba, N. (2016). Assessing the efficacy of breastfeeding-friendly quality improvement project in a large federally qualified health center network. *Journal of Human Lactation*, 42(3), 489-497. doi: 10.1177/0890334415610326.
- Sayres, S., & Vistenin, L. (2018). Breastfeeding: Uncovering barriers and offering solutions. *Current Opinion in Pediatrics*, 30(4), 591-596. doi: 10.1097/MOP.0000000000000647.
- Tang, K., Gerling, K., Chen, W., & Geurts, L. (2019). Information and communication systems to tackle barriers to breastfeeding: Systematic search and review. *Journal of Medical Internet Research*, 21(9), e13947. doi: 10.2196/13947.

Schwarz, E. B., & Nothnagle, M. (2015). The maternal health benefits of breastfeeding. *American Family Physician, 91*(9), 602-604.

Sriraman, N. K. (2017). Promote breastfeeding in the outpatient setting: It's easy! *Current Problems in Pediatric and Adolescent Health Care, 47*(12), 311-317.

United Nations Children's Fund. (2020, April 10). Breastfeeding.

https://www.unicef.org/nutrition/index_24824.html

U.S. Bureau of Labor Statistics. (2020, May 30). Economy at a glance: Greenville, NC.

https://www.bls.gov/eag/eag.nc_greenville_msa.htm#eag_nc_greenville_msa.f.3

United States Census Bureau. (2020, April 18). QuickFacts Pitt County, North Carolina.

<https://www.census.gov/quickfacts/fact/table/pittcountynorthcarolina/PST045219>

United States Department of Agriculture Food and Nutrition Services. (2020, March 29). *Fiscal Year 2018 WIC Breastfeeding Data Local Agency Report*. [https://fns-](https://fns-prod.azureedge.net/sites/default/files/resource-files/FY2018-BFDLA-Report.pdf)

[prod.azureedge.net/sites/default/files/resource-files/FY2018-BFDLA-Report.pdf](https://fns-prod.azureedge.net/sites/default/files/resource-files/FY2018-BFDLA-Report.pdf)

Wallace, L. M., Ma, Y., Qui, L. Q., & Dunn, O. M. (2018). Educational videos for practitioners attending baby-friendly hospital initiative workshops supports breastfeeding positioning, attachment, and hand expression skills: Effects on knowledge and confidence. *Nurse Education in Practice, 31*, 7-13. <http://doi.org/10.1016/j.nepr.2018.04.005>

Wood, N. K., Woods, N. F., Blackburn, S. T., & Sanders, E. A. (2016). Interventions that enhance breastfeeding initiation, duration, and exclusivity: A systematic review. *The American Journal of Maternal Child Nursing, 41*(5), 299-307. doi:

10.1097/NMC.0000000000000264.

Witt, A. M., Witt, R., Lasko, L., & Flocker, S. (2019). Translating team-based breastfeeding support into primary practice. *Journal of American Board of Family Medicine*, 32(6), 818-820. doi: 10.3122/jabfm.2019.06.190118.

World Health Organization. (2020, April 10). Infant and young child feeding.
<https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding>

Appendix B

Doctorate of Nursing Practice Quality Improvement Project Approval

Quality Improvement/Program Evaluation Self-Certification Tool

Purpose:

Projects that do not meet the federal definition of human research pursuant to 45 CFR 46 do not require IRB review. This tool was developed to assist in the determination of when a project falls outside of the IRB's purview.

Instructions:

Please complete the requested project information, as this document may be used for documentation that IRB review is not required. Select the appropriate answers to each question in the order they appear below. Additional questions may appear based on your answers. If you do not receive a STOP HERE message, the form may be printed as certification that the project is "not research", and does not require IRB review. The IRB will not review your responses as part of the self-certification process.

Name of Project Leader:

Shakeema Jordan, MSN, RN

Project Title:

Virtual Lactation Support for Breastfeeding Mothers during the Early Postpartum Period

Brief description of Project/Goals:

The goal of the project is to provide a virtual lactation educational session that supports breastfeeding mothers during the first four weeks postpartum and increases breastfeeding adherence beyond the four weeks postpartum period.

Will the project involve testing an experimental drug, device (including medical software or assays), or biologic?

- Yes
 No

Has the project received funding (e.g. federal, industry) to be conducted as a human subject research study?

- Yes
 No

Is this a multi-site project (e.g. there is a coordinating or lead center, more than one site participating, and/or a study-wide protocol)?

- Yes
 No

Is this a systematic investigation designed with the intent to contribute to generalizable knowledge (e.g. testing a hypothesis; randomization of subjects; comparison of case vs. control; observational research; comparative effectiveness research; or comparable criteria in alternative research paradigms)?

- Yes
 No

Will the results of the project be published, presented or disseminated outside of the institution or program conducting it?

- Yes
 No

Would the project occur regardless of whether individuals conducting it may benefit professionally from it?

- Yes
 No
-

Does the project involve "no more than minimal risk" procedures (meaning the probability and magnitude of harm or discomfort anticipated are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests)?

- Yes
 No
-

Is the project intended to improve or evaluate the practice or process within a particular institution or a specific program, and falls under well-accepted care practices/guidelines?

- Yes
 No
-

Based on your responses, the project appears to constitute QI and/or Program Evaluation and IRB review is not required because, in accordance with federal regulations, your project does not constitute research as defined under 45 CFR 46.102(d). If the project results are disseminated, they should be characterized as QI and/or Program Evaluation findings. Finally, if the project changes in any way that might affect the intent or design, please complete this self-certification again to ensure that IRB review is still not required. Click the button below to view a printable version of this form to save with your files, as it serves as documentation that IRB review is not required for this project. 7/28/2020

Appendix C

Project Site Approval Letter

July 19, 2020

To East Carolina University College of Nursing:

We at [redacted] have reviewed Shakeema Jordan's DNP Project Proposal. Ms. Jordan has organizational support and approval to conduct their Doctor of Nursing Practice student project within our institution. Our organization's liaison, or project champion, for the project is [redacted]

We understand that the timeframe for this project is from the date of this letter through November 30, 2020. Implementation at the project site will be August 2020 through November 2020, unless otherwise negotiated. We understand that for Ms. Jordan to achieve completion of the DNP program, dissemination of the project is required by the University and will include a public presentation related to the project and submission to the ECU digital repository, The ScholarShip. In addition, we understand that ECU College of Nursing encourages students completing exemplary scholarship to develop a manuscript for publication, but that is not a requirement. Our organization understands and agrees that the student will not use our organization's name in the formal project paper or any subsequent posters, presentations, or publications.

Our organization has deemed this project as a program or process development project. Our organization is aware that this project will be processed first through our organizational approval process and then through the ECU College of Nursing process, which may include a formal review through University and Medical Center Institutional Review Board of East Carolina University (UMCIRB), if needed. Our organization does not have an Institutional Review Board (IRB). We are aware that in the absence of an organizational IRB, the project will be submitted through the ECU College of Nursing review process which may include UMCIRB review if needed.

Thank you,

Appendix D

Breastfeeding Attrition Prediction Tool Author Approval Letter

This email originated from outside ECU.

Hello Shakeema,

Your project sounds very interesting. You have my permission to use the BAPT and modify it as needed for your own population. My only requirement is that you send me a copy of your final paper and any publications that arise from the project. I have attached the instrument and the scoring instructions. While this shows a six-point Likert scale, many researchers have used the 5-point scale with no loss of the psychometric properties. I used the 6-point scale in the initial research in an attempt to make people commit pro or con to breastfeeding. The participants who wanted the mid-point managed to get it by circling the 3 & 4 ... so I ended up coding those as 3.5.

Good luck with your project. I look forward to hearing about the results.

...

On Tue, Jul 14, 2020 at 4:25 AM Jordan, Shakeema Sessoms <sessomss04@students.ecu.edu> wrote:

[REDACTED]

My name is Shakeema Jordan, and I am an East Carolina University Graduate Student in the Doctorate of Nursing program (DNP). I am currently completing my second semester of the doctorate program and partnering with an outpatient pediatric clinic on my DNP quality improvement project. I plan to implement virtual breastfeeding education and support webinars for clinic patients, and the target population is breastfeeding mothers within the first four-week postpartum period. The purpose of the project is to provide virtual education and support to breastfeeding mothers during the early postpartum period to decrease the prevalence of breastfeeding cessation during the early postpartum period. During a literature search for validated tools, I found your tool in two published articles (Employing the Theory of Planned Behavior to Predict Breastfeeding Intention and Intensity in Oman by Saada Al-Barwani and Prediction of Early Breastfeeding Attrition for First-time Breastfeeding Mothers by Cynthia Furlow Jeffrey). I continued searching and was able to find your original article, Development of the Breastfeeding Attrition Tool.

I am seeking your approval to use the Breastfeeding Attrition tool within my project and requesting a copy of the survey and scoring instructions. Additionally, are modifications to the tool allowed? In the published article by Saada Al-Barwani, a modified version of the tool was used.

Thank you in advance for your attention to this email. Please feel free to request additional details about the project. I am looking forward to your feedback.

Sincerely,

Shakeema Jordan, MSN, RN

Appendix E

Modified Breastfeeding Attrition Prediction Tool

PLEASE CIRCLE THE NUMBER THAT MOST CLOSELY DESCRIBES HOW YOU FEEL ABOUT EACH STATEMENT.

	Strongly Disagree	Disagree	Agree	Strongly agree
1. Breastfeeding is more convenient than formula feeding.	1	2	3	4
2. Breastfeeding is painful.	1	2	3	4
3. Formula feeding allows the mother more freedom.	1	2	3	4
4. Breastmilk is healthy for the baby.	1	2	3	4
5. It is difficult to breastfeed in public	1	2	3	4
6. Breastmilk is more nutritious than infant formula.	1	2	3	4
7. Formula feeding is easier than breastfeeding.	1	2	3	4
8. Breastfeeding makes you closer to your baby.	1	2	3	4
9. Breastfeeding makes returning to work difficult.	1	2	3	4
10. Formula fed babies are easier to satisfy than breastfed babies.	1	2	3	4
11. Breastfeeding is more economical than formula feeding.	1	2	3	4
12. When you breastfeed you never know if the baby is getting enough milk.	1	2	3	4
13. Mothers who formula feed get more rest than breastfeeding mothers.	1	2	3	4
14. Breastfeeding is natural.	1	2	3	4
15. Breastfeeding is more time consuming than formula feeding.	1	2	3	4
16. Breastfeeding is best for the baby.	1	2	3	4
17. Breastfeeding is personally satisfying.	1	2	3	4
18. Breastfeeding ties you down.	1	2	3	4
19. Breastfeeding helps you bond with your baby.	1	2	3	4
20. Mothers who formula feed get back into shape sooner.	1	2	3	4

PLEASE INDICATE THE DEGREE TO WHICH YOU AGREE OR DISAGREE WITH THE FOLLOWING STATEMENTS.

	Strongly Disagree	Disagree	Agree	Strongly agree
21. I have the necessary skills to breastfeed	1	2	3	4
22. I am physically able to breastfeed	1	2	3	4
23. I know how to breastfeed	1	2	3	4
24. I am emotionally ready to breastfeed	1	2	3	4
25. I am determined to breastfeed	1	2	3	4
26. I won't need help to breastfeed	1	2	3	4
27. I have total control over my breastfeeding	1	2	3	4
28. Breastfeeding is easy	1	2	3	4
29. I am confident I can breastfeed	1	2	3	4
30. I know I will have enough milk for the baby	1	2	3	4

Appendix F

Follow-up Data Collection Tool

1. Are you currently breastfeeding? (Yes/No)
2. Are you exclusively breastfeeding (Yes/No)
3. Do you plan to continue breastfeeding? (Yes/No)
4. Do you plan to stop breastfeeding? (Yes/No)
5. Have you already stopped breastfeeding? (Yes/No)
6. If you have already stopped breastfeeding, how many weeks old was your child when you stopped breastfeeding? (5 weeks/6 weeks)

Appendix G
Dissemination Plan

Product	Target Date	Audience	Lead Contributors	Status	Notes
Written Products					
Publish article "Virtual Lactation Support for Breastfeeding Mothers during the Early Postpartum Period" submitted to ECU "The ScholarShip"	May 7, 2021	ECU faculty, staff, or students	ECU "The ScholarShip" program site	Planning	https://thescholarship.ecu.edu/
ECU Women's Physicians: Project & Project Material	June 30, 2021	Obstetrical/gynecological medical providers, advance practice nurses,	East Carolina University Department of Obstetrics & Gynecology	Planning	Provide project educational and recruitment material, including visuals, and original and modified Breastfeeding Prediction Attrition Tools
Presentations					
County Health Department	August 1, 2021	Breastfeeding women & families who are currently breastfeeding or planning to breastfeed	County Health Department Breastfeeding Peer Counselor Supervisor	Planning	

Appendix H

Doctor of Nursing Practice Essentials

	Description	Demonstration of Knowledge
Essential I <i>Scientific Underpinning for Practice</i>	<p>Competency – Analyzes and uses information to develop practice</p> <p>Competency -Integrates knowledge from humanities and science into context of nursing</p> <p>Competency -Translates research to improve practice</p> <p>Competency -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes</p>	Used evidence based literature to develop a quality improvement project related to improving breastfeeding adherence in the first four-week postpartum population. Used evidence based nursing theories and change theories to guide approach to DNP project, and guide project development and implementation strategies.
Essential II <i>Organizational & Systems Leadership for Quality Improvement & Systems Thinking</i>	<p>Competency –Develops and evaluates practice based on science and integrates policy and humanities</p> <p>Competency –Assumes and ensures accountability for quality care and patient safety</p> <p>Competency -Demonstrates critical and reflective thinking</p> <p>Competency -Advocates for improved quality, access, and cost of health care; monitors costs and budgets</p> <p>Competency -Develops and implements innovations incorporating principles of change</p> <p>Competency - Effectively communicates practice knowledge in writing and orally to improve quality</p> <p>Competency - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems</p>	Developed and evaluated care delivery approaches to meet the needs of breastfeeding women who are within the first four-week postpartum period. Evaluated current literature to develop a quality improvement project to improve breastfeeding practices. Translated evidence based literature and nursing theories into a quality improvement project that utilized principals of change, and focused on improving health outcomes. Employed principles of business, finance, and economics by developing and monitoring budgets and analyze cost effectiveness to ensure consideration of population in rural, eastern North Carolina setting. Created DNP project to influence breastfeeding practices and adherence to continue to improve quality and health outcomes for women and children.
Essential III <i>Clinical Scholarship & Analytical Methods for Evidence-Based Practice</i>	<p>Competency - Critically analyzes literature to determine best practices</p> <p>Competency - Implements evaluation processes to measure process and patient outcomes</p> <p>Competency - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients</p> <p>Competency - Applies knowledge to develop practice guidelines</p> <p>Competency - Uses informatics to identify, analyze, and predict best practice and patient outcomes</p> <p>Competency - Collaborate in research and disseminate findings</p>	Designed and implemented a quality improvement project to improve breastfeeding adherence at an outpatient pediatric clinic. Used evidence based literature to design the project tool, which is a modified breastfeeding attrition prediction tool, and power-point presentation to disseminate common causes and solutions for early breastfeeding cessation. Used information technology to gather data and conduct virtual education sessions. Used findings to improve breastfeeding practices and practice environment.
Essential IV <i>Information Systems – Technology &</i>	<p>Competency - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care</p>	Utilized information technology systems to create and disseminate online surveys to gather data and utilize social media and online videos

<i>Patient Care Technology for the Improvement & Transformation of Health Care</i>	<p>Competency - Analyze and operationalize patient care technologies</p> <p>Competency - Evaluate technology regarding ethics, efficiency and accuracy</p> <p>Competency - Evaluates systems of care using health information technologies</p>	<p>to disseminate information. Demonstrated leadership related to gathering data, communicating with project site champion and participants ensure confidentiality of participants, and managing databases.</p>
	Description	Demonstration of Knowledge
<i>Essential V Health Care Policy of Advocacy in Health Care</i>	<p>Competency- Analyzes health policy from the perspective of patients, nursing and other stakeholders</p> <p>Competency – Provides leadership in developing and implementing health policy</p> <p>Competency –Influences policymakers, formally and informally, in local and global settings</p> <p>Competency – Educates stakeholders regarding policy</p> <p>Competency – Advocates for nursing within the policy arena</p> <p>Competency- Participates in policy agendas that assist with finance, regulation and health care delivery</p> <p>Competency – Advocates for equitable and ethical health care</p>	<p>Analyzed breastfeeding targets from national, state, and local levels and incorporated findings in the development of the quality improvement project. Integrated practice, policy, and evidence based literature to develop and implement quality improvement project. Shared findings with stakeholders to provide education regarding breastfeeding policies, targets, and current state to improve breastfeeding duration and adherence within the early postpartum population.</p>
<i>Essential VI Interprofessional Collaboration for Improving Patient & Population Health Outcomes</i>	<p>Competency- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship</p> <p>Competency – Provide leadership to interprofessional care teams</p> <p>Competency – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings</p>	<p>Collaborated with DNP faculty, project site champion, Jill Janke, who is the developer of the breastfeeding self-efficacy tool, to develop DNP project, implement practices, and develop a system of care to improve breastfeeding adherence.</p>
<i>Essential VII Clinical Prevention & Population Health for Improving the Nation's Health</i>	<p>Competency- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery</p> <p>Competency – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care</p> <p>Competency – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity</p>	<p>Incorporated breastfeeding health promotion, evidence-based recommendations into quality improvement project planning. Used evidence based recommendations to guide development of breastfeeding educational material. Created and posted educational videos on social media about the benefits of breastfeeding on disease prevention and health promotion. Incorporated determinants of health, and cultural diversity into project planning and implementation by considered the populations access to information technology, literacy levels, and access to lactation consultation.</p>
<i>Essential VIII Advanced Nursing Practice</i>	<p>Competency- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings</p> <p>Competency – Design, implement & evaluate nursing interventions to promote quality</p> <p>Competency – Develop & maintain patient relationships</p>	<p>Designed and implemented interventions for breastfeeding mothers to prevent the likelihood of early cessation. Provided lactation educational videos via social media about health benefits of breastfeeding and standards of practice. Conducted virtual education sessions to provide</p>

	<p>Competency –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes</p> <p>Competency – Mentor and support fellow nurses</p> <p>Competency- Provide support for individuals and systems experiencing change and transitions</p> <p>Competency –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures</p>	<p>education and support for breastfeeding mothers and their families.</p>
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