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Staff Education Regarding Breastfeeding for Perinatal Nurses

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Walden University

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Walden University

College of Nursing

This is to certify that the doctoral study by

Shannon Nicole Long

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

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Walden University

2021

Abstract

Staff Education Regarding Breastfeeding for Perinatal Nurses

by

Shannon Nicole Long

MSN, University of Phoenix, 2010

MHA, University of Phoenix, 2010

BSN Eastern Kentucky University, 2001

Project Submitted in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Nursing Practice

Walden University

November 2021

Abstract

Exclusive breastfeeding in the U.S. is the optimal form of nutrition up to the age of 1 year; however, the current U.S. rate of 49% and Kentucky rate of 39% fall below the Healthy People 2020 goal of 60.6%. Researchers have shown that perinatal nurses often lack knowledge to ensure mothers begin and maintain this optimal form of human nourishment. Framed within the analysis, design, development, implementation, and evaluation model of instructional design, the purpose of this project was to present a continuing education program on breastfeeding for 10 staff nurses at the target hospital. The program presented was the Breastfeeding Counselor Prep Course by the Prepared Childbirth Educators, a national organization of nurses who educate perinatal nurses on current evidence-based breastfeeding practices. Two sources of evidence were produced by the project. The first was the evaluation of the educational program objectives by participants stating *yes* or *no* on whether the objectives were met. The 10 participants agreed that all 12 objectives were met. The second source of evidence showed the change in knowledge from pretest to posttest. Using descriptive statistics, the mean of the pretest was 56.9%, and the mean of the posttest was 90%. Increase in change of knowledge ranged from 31%-52% indicating a positive change in knowledge among the participants. The social change facilitated by this project was to improve the population's overall health by promoting breastfeeding initiation in the hospital setting and sustained breastfeeding upon discharge, thus improving the lives of infants, mothers, and families.

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Dedication

This project is dedicated to my supportive family and the good Lord above who called me into nursing as way of serving his children in need. To my parents who have loved me unconditionally and encouraged me to follow my goals, despite growing up in extreme poverty. To my son, Landon who gives me the inspiration to work harder each day to pave a better pathway in life than I had. Landon, has endured so much as a child of a nurse coupled with a mother furthering her education. To my Georgia friends Laura and Melissa who will be so glad that I never have to do homework again.

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My son, Landon has been the most impacted by my desire to finish this project, and I would like to thank him for his support and understanding. I want to acknowledge the nurses on the perinatal unit, nursing administrators, and my fellow nursing directors in the hospital for supporting this project and appreciating the importance of providing the perinatal staff evidence-based breastfeeding education.

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Section 1: Nature of the Project

Introduction

According to World Health Organization (WHO) and the American Academy of Pediatrics (AAP), breast milk is considered the best source of nutrition in children younger than six months of age (Wood & Woods, 2018). Both governing bodies stated breast milk should be the only source of nutrition for babies younger than six months of life (Wood & Woods 2018). Despite being the best practice for feeding infants, exclusive breastfeeding in the U.S. falls well below the Healthy People 2020 goal of 60.6% (Munn et al., 2018). Currently, the exclusive breastfeeding rate at six months of life in the United States is 49% (Munn et al., 2018). More specifically, the exclusive breastfeeding rate in Kentucky is 39.8% (Centers for Disease Control and Prevention [CDC], 2018), which is well below the national average and the Healthy People 2020 goal. Although researchers have found that breastfeeding improves the health of women and children, healthcare workers fail to ensure that mothers begin and maintain this optimal form of newborn nutrition (Keevash et al., 2018). As well as lack of support by healthcare professionals, there are many other reasons why mothers decide not to breastfeed, including social, economic, cultural, mother-infant-bonding, and lack of education and professional support (Keevash et al., 2018). Women of lower financial status, low education levels, and specific ethnic backgrounds are less likely to breastfeed (Keevash et al., 2018).

Many childbearing women have reported a lack of support and education from their health care providers as the reason they do not breastfeed (Folker-Maglaya et al., 2018). New mothers seeking breastfeeding support from nurses often report conflicting

information from their healthcare providers as a barrier to successful breastfeeding (Folker-Maglay et al., 2018). Researchers have presented breastfeeding is not part of nursing orientation in hospital settings, and there is not enough breastfeeding education integrated into the didactic classes for nursing students (Folker-Maglaya et al., 2018). Research results also show nurses are not prepared to provide breastfeeding education and support patients (Deloian et al., 2015). Providing nurses with formal breastfeeding education is important in improving breastfeeding rates and sustainability of breastfeeding, at least for the first year of life (Folker-Maglaya et al., 2018).

The nature of this project was to offer a formal breastfeeding education program to nursing staff working in a small rural critical access hospital in Kentucky. Nurses work with mothers and their families from admission until they are discharged home with their baby, which can significantly impact breastfeeding support and promotion (Deloian et al., 2014). Implementing breastfeeding education as part of the required continuing education for staff working in the labor, delivery, recovery, postpartum, and nursery (LDRPN) unit at this rural hospital is vital, because formal breastfeeding education has been positively linked to improved breastfeeding outcomes (Deloian et al., 2014). As director of LDRPN at this rural critical access hospital (CAH), I will provide an evidence-based breastfeeding education program to the LDRPN staff to help improve breastfeeding outcomes.

Breast milk has been proven the best form of nutrition for newborns up to six months of life, which is critical in improving children's health (Anggraeni et al., 2018). The nutritional components of breast milk have been proven to improve health outcomes in children by decreasing the incidence of ear infection, diabetes, acute lymphoblastic

leukemia (ALL), Crohn's Disease, ulcers, respiratory diseases, infections, obesity, and gastrointestinal infections (Bartick et al., 2016). Breastfeeding is also linked to improved maternal health. Women who breastfeed had a reduced risk of developing breast and ovarian cancer, diabetes, hypertension, and experiencing a myocardial infarction (MI) (Bartick et al., 2016). Educating and promoting breastfeeding can have a significant impact on maternal health. In a study conducted by Bartick et al., (2016), more than \$3.0 billion was spent in the U.S. due to suboptimal breastfeeding rates. Improving the U.S. breastfeeding rate would help decrease health care costs for women and their children, improve health outcomes, and significantly improve the United States' health and nation's welfare. Requiring breastfeeding education and lactation support for nurses working in women's health is crucial in improving breastfeeding rates and improving the community's overall health. The social change intended for this project was to improve the population's overall health by promoting breastfeeding initiation in the hospital setting and sustained breastfeeding upon discharge, thus improving the lives of infants, mothers, and families.

Problem Statement

The problem identified in this Doctor of Nursing Practice (DNP) project is the need for nursing staff education about breastfeeding on the women's health unit for which the project will be developed. Despite the recommendations from WHO and the AAP for all newborns to be breastfed, the exclusive breastfeeding rate at the women's health unit, of which I am the director, was 59% for the first two quarters of the fiscal year 2019. The issue in breastfeeding practice at this facility can be related to the nursing

staff's lack of formal breastfeeding education. Evidence-based literature shows that nurses are not well prepared to help patients be successful with breastfeeding (DeIoian et al., 2015). Evidence shows that new mothers quit breastfeeding due to the lack of support and staff knowledge about breastfeeding (Williams et al., 2013). This doctoral project brings significance to nursing by developing, implementing, and evaluating an evidence-based breastfeeding education program for nurses working in maternity. Increasing the staff knowledge about breastfeeding support can allow mothers to be successful in providing their babies the most optimal form of nutrition beginning at birth in order to improve the overall health of mothers and their children.

The gap in practice was the lack of nurses' knowledge to support the breastfeeding mother. Evidence-based literature supports a need for nurses to provide breastfeeding support to new mothers and sustain breastfeeding. A breastfeeding staff education program with continuing education hours will be presented to the nurses in the women's health unit to address this gap.

Purpose Statement

The gap in practice was the lack of nurses' knowledge to support the breastfeeding mother. In contrast, the evidence-based literature supports a need for nurses to be knowledgeable in providing that support and helping mothers sustain breastfeeding.

The practice-focused questions for this project were:

- What evidence in the literature shows that educating nurses on best breastfeeding practices can improve breastfeeding outcomes?

- Does providing a formal breastfeeding education course improve nursing knowledge about breastfeeding and breastfeeding support as evidenced by a pretest/post-test situation?

Formal breastfeeding education classes have been shown to close the gap in breastfeeding practices (Deloian et al., 2015). Therefore, the purpose of this DNP project was to plan, implement, and evaluate a continuing education program on breastfeeding and breastfeeding support (CEBS) for the staff nurses at the target hospital.

Nature of the Doctoral Project

Sources of Evidence

Sources of evidence used to support the CEBS include, but not be limited to, a literature review from Walden University Library, Medline, and Google search engines. Professional organization sites utilized consisted of but not limited to, the Association of Women's Health and Neonatal Nurses (AWHONN), American College of Obstetricians and Gynecologists (ACOG), Baby-Friendly USA, and the International Board of Lactation Consultant Examiners (IBCLE). Governmental organizations utilized for this project included the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO). The literature used for this project is dated from 2010-2020.

Approach

The CEBS project was guided by the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) Model (see Appendix A) incorporated into the planning, implementing, and evaluation steps of the project. The ADDIE model covers the critical phases in designing instructional education (Hsu et al., 2013).

Planning

After determining the project topic, an informal meeting occurred between myself and the Vice President/Administrator/Chief Nursing Officer of the hospital to discuss the need for a formal staff education program regarding breastfeeding. A commitment from that leadership was obtained to present the CEBS. The hospital administrator signed a site agreement. Learning objectives for the curriculum were identified by the Prepared Childbirth Education Breastfeeding Program staff education program.

A literature review (see Appendix B) was conducted to identify an evidence-based breastfeeding program available for nursing. This review indicated the best program available was developed by Prepared Childbirth Educators (PCE) (Prepared Childbirth Educators, 2019). The course prepares nurses with the knowledge, skills, and abilities to assist women with breastfeeding, strengthen the competencies of nurses assisting women with lactation and help develop professional education for nurses regarding breastfeeding (Prepared Childbirth Educators, 2019).

A pretest and post-test were given to determine if there was an increase in staff's knowledge related to breastfeeding and appropriate strategies for assisting mothers with breastfeeding. The PCE curriculum provided both the pre and post-test. The program will be presented to the staff in a classroom setting. Institutional Review Board (IRB) approval was obtained utilizing the blanket ethics pre-approval for Staff Education Doctoral Projects. No edits were made to the pre-approved Site Agreement.

Implementation

Implementation is the step in the ADDIE model that allows for the education course to be disseminated to participants (Constancio et al., 2018). The participants for this project were the staff nurses at the practicum site. Monies was allocated in the departmental budget to cover the cost related to the course and replacing staff to attend the class. A conference room was booked for those taking the course. The course was presented to all staff in the classroom setting as a PowerPoint presentation, interactive engagement, teach-back, role play, and simulation. The team was required to attend the evidence-based breastfeeding education course. As the Director of the Perinatal Unit, I ensured staff needing the course were replaced to attend the educational program. Support provided by the site for implementing the staff education program was accomplished by providing needed resources, organizing dates, booking classrooms, encouraging staff to attend the course, and ensuring several options were available to access the system for participants.

Evaluation

Evaluations during the project involved the nurses who participated in the education program. The perinatal nurses taking the course evaluated the course curriculum. The nurse participants completed an impact evaluation. At the beginning of the education program, the participants took a pretest. Upon completion of the program, a post-test was given to determine if a change in knowledge took place. The participants also evaluated the program relative to the objectives being met or not met. The intent was

that the gap in practice be addressed by increasing nurses' knowledge after the educational program to provide appropriate support to breastfeeding mothers.

Significance

The stakeholders for this educational project included nurses who work on the perinatal unit and the breastfeeding consultants on staff who work in the obstetrical unit at the critical access hospital this EBP project is taking place. In addition to the nursing staff, there are two family practice physicians and one certified nurse-midwife who provides obstetrical/neonatal care on the unit interested in the impact of the educational material presented to the nursing staff.

Patients were key stakeholders as well for this project. Patients have to buy into the practice of breastfeeding to improve the overall breastfeeding outcomes. Breastfeeding has been proven to provide all the nutrients needed for healthy growth and development, and despite the fact most mothers can breastfeed, many still do not breastfeed (Nayak, 2015). Patients report several reasons for not breastfeeding, including social support, cultural beliefs, lack of education, and lack of encouragement, support, and proper education by health care providers (Keevash et al., 2018). Mothers must be fully engaged in breastfeeding and be receptive to education and support regarding this evidence-based initiative. The Chief Nursing Officer was also identified as a critical stakeholder in promoting evidence-based practice for bedside nursing within the facility. Engagement of the operating staff was also crucial in improving breastfeeding outcomes as the operating staff is often providing breastfeeding education to new mothers in the recovery room.

Additional stakeholders outside of the hospital included the staff at the obstetrical and pediatric provider offices. Education and support of breastfeeding should occur within the hospital and occur in outpatient settings as well. The National Institute for Health and Care Excellence (NICE) guidelines state health workers spend a suitable amount of time with mothers and their babies in all settings to ensure successful breastfeeding outcomes (Keevash, 2018). Partnering with the local health department to ensure patients receive proper education and support regarding breastfeeding in the community setting will help promote breastfeeding. Lactation consultants working in the community were another critical stakeholder to this project. Licensed lactation consultants often offer breastfeeding support to lactating mothers individually and within community support groups (Grubestic, & Durham, 2019). Lactation consultants can be enormous advocates for helping educate patients and staff about breastfeeding because these professionals promote breastfeeding, provide appropriate education, and offer exceptional breastfeeding support (Grubestic & Durhin, 2019). Partnering with these community-based lactation consults was helpful in disseminating proper breastfeeding education to staff caring for breastfeeding mothers. The social change intended for this project was to improve the population's overall health by promoting breastfeeding initiation in the hospital setting and sustained breastfeeding upon discharge, thus improving the lives of infants, mothers, and families.

Summary

Section 1 introduced the lack of nurses' knowledge related to breastfeeding and supporting the breastfeeding mother. Simultaneously, the literature shows that such

knowledge can result in improved outcomes for the mother and baby. Guided by the practice focus question to fill this gap in practice, the CEBS project was to offer a continuing education program for the perinatal nurses in the hospital. The project was significant because outcomes for mothers and babies can be improved by having breastfeeding support by the nurse to promote positive social change by enhancing children, mothers, and the community. The problem identified in this DNP project was the need for nursing staff education about breastfeeding on the women's health unit for which the project was developed. This project aims to improve the staff's knowledge regarding proper breastfeeding and support of the breastfeeding mother to help improve breastfeeding success. The nature of this project was to create a breastfeeding education program for nursing staff using a curriculum, outcomes, pretest/post-test, and evaluation. The project's significance was to increase breastfeeding outcomes by providing nurses proper breastfeeding education so that, mothers can receive the education and support needed to be successful at breastfeeding. Breastfeeding will ultimately improve the health and wellbeing of children, mothers, and the community.

In Section 2, the ADDIE Model is described and content provided relevance of encouraging and supporting breastfeeding to nursing practice. Topics of discussion included a history of the importance of breastfeeding, literature available supporting breastfeeding, and a description of the current breastfeeding practices. Section 2 also has a precise summary of local evidence encouraging breastfeeding as the best form of nutrition for babies, definitions of terms, and state and local contexts regarding

breastfeeding. Section 2 also discusses professional relationships and interest in this project.

Section 2: Background and Context

Introduction

The problem identified in this DNP project was the need for nursing staff education about breastfeeding on the women's health unit for which the project was developed. Literature supports the premise that nurses cannot provide appropriate education and support to breastfeeding, and breastfeeding mothers believe lack of nursing knowledge related to breastfeeding negatively impacts breastfeeding outcomes (Folker-Maglaya et al., 2018). Offering a formal breastfeeding education class has been shown to close the gap in breastfeeding practices (Deloian et al., 2015). Therefore, the purpose of this DNP project was to plan, implement, and evaluate a continuing education program on breastfeeding and breastfeeding support (CEBS) for the staff nurses at the hospital for which the project was developed.

The practice-focused questions were:

- What evidence in the literature shows that educating nurses on best breastfeeding practices can improve breastfeeding outcomes?
- Does providing a formal breastfeeding education course improve nursing knowledge about breastfeeding and breastfeeding support as evidenced by a pretest/post-test situation?

Improving infant nutrition is a national and local relevant health care initiative. In 2011 the Surgeon General's call to action supported initiatives to increase the proportion of breastfed infants (Office of the Surgeon General, 2011). Healthy People 2020 goals for breastfeeding were identified in the call to action. The goals of the Healthy People 2020

initiative were to improve the proportion of infants that were at least breastfed once from 74% to 81.9%, improve those breastfed at six months of life from 43.5 to 60.6%, and those at one year of life from 22.7% to 34.1% (Office of the Surgeon General, 2011). The breastfeeding report card released in August of 2020 indicates the nation has met the at least breastfed once goal at 84.1%, has not made a goal on six months of life at 58.3%, and has met the one-year goal at 35.3% (CDC, 2020).

Analysis, Design, Development, Implementation, and Evaluation (ADDIE) Model

The ADDIE model utilized for this CEBS project (See Appendix A) was designed by Florida State University to develop an effective Instructional System Design (ISD) (Clark, 2015). The model was initially used to evaluate and improve performance within the U.S. Army in 1975 (Clark, 2015). Over the years, the program has migrated out to other business types and professionals (Clark, 2015). The model has helped design education and performance programs for businesses, professionals, educators, and the military (Clark, 2015). The ADDIE model helps determine outcomes and performance aspects of a program (Clark, 2015).

The ADDIE model is a comprehensive framework composed of the five essential components of designing and implementing a program (Hsu et al., 2014). The ADDIE model consists of five phases. The five phases are analysis, design, development, implementation, and evaluation. The first phase of the model is to analyze the need for continuing education by way of identifying a gap in practice (Hess & Greer, 2016). During this phase, a needs assessment is performed, data is collected, research is obtained, and key stakeholders are identified (Chu et al., 2019). The second phase is to

design learning objectives and identify best practices to address the gap in practice (Hess & Greer, 2016). The curriculum plan is developed during the design phase based on the identified objectives (Chu et al., 2019). Phase three of the model consists of developing resources (Hess & Greer, 2016). The developing phase recruits content experts to review the instructional material and provide constructive feedback to revise the fabric before implementation (Chu et al., 2016). The fourth phase of the framework is implementing learning resources (Hess & Greer, 2016). During the implementation phase, the educational material is presented to the identified students (Chu et al., 2016). The fifth phase evaluates how the learning resources address the gap in practice (Hess & Greer, 2016). During this final phase of the ADDIE model, an evaluation of the course material and the Degree of knowledge obtained from taking the educational course will occur (Chu et al., 2016). For this breastfeeding educational project, the participants evaluated the course objectives as met or not met, and the pretest/post-test was utilized to determine if knowledge was gained. The ADDIE model is used in healthcare to present new information to critical stakeholders responsible for implementing best practices. The ADDIE model has been used in hospital settings for several years to evaluate quality performance and staff educational programs (Hsu et al., 2014).

The ADDIE model was used to develop online education classes for nurses in Taiwan who are often too overworked to obtain the 150 hours of continuing education credits need every six years to renew their nursing license (Hsu et al., 2013). Evidence suggested the online staff education models designed using the ADDIE model were beneficial in improving staff knowledge and patient outcomes (Hsu et al., 2013). The

ADDIE model has been proven to be a successful framework in preparing nursing education courses by helping to determine what has been happening in nursing settings, identifies what needs to happen, and ensures goals of the education program are met (Hsu et al., 2013).

The ADDIE model has also been used to develop an online breastfeeding training course for nursing students. The course was designed using the ADDIE model to meet the U.S. Surgeon General's call to action supporting breastfeeding education for nursing students (Cianelli et al., 2015). The ADDIE model helped the content experts build the course content based on the assessed needs of the students, which helped to identify learning objectives for the course (Cianelli et al., 2015). After taking the breastfeeding course, nursing students increased knowledge regarding breastfeeding and felt more confident in assisting women with breastfeeding (Cianelli et al., 2015). Using the ADDIE model for educational programs enhances the effects of the material taught in educational programs to improve staff knowledge, evaluate students' satisfaction with the program, and assess areas of improvement (Park et al., 2019).

ADDIE was used to develop a teaching program for new nurses regarding pain assessment. A multimedia-assisted teaching program was designed to help new nurses effectively assess patient pain (Chu et al., 2019). The pain education program effectively improved nursing pain assessments, improved pain competency, and help nurses identify essential components of pain (Chu et al., 2019). The ADDIE model will ensure clear, precise development of the CEBS (Park et al., 2019). The ADDIE model has been proven to improve the implementation of best practices by providing staff the most efficient and

effective education possible regarding the change process and how to perform the change (Park et al., 2019). This model helped to bridge the gap between current practice and best practice at the practicum site.

Relevance to Nursing Practice

Women have many reasons for choosing to breastfeed their babies. Most women who choose to breastfeed their children do so because breastmilk is concerned with the gold standard of nutrition for newborns (Radzyninski & Callister, 2016). Research suggested that married college-educated white women over 30 who chose breastfeeding are often the class of women who choose to breastfeed (Radzyninski & Callister, 2016). Women in this socioeconomic class identified as being better informed regarding the overall benefits of breastfeeding (Radzyninski & Callister, 2016). Women who were confident in their ability to succeed were more likely determined to breastfeed (Radzyninski & Callister, 2016). Research indicated many mothers choose to breastfeed based on the perception of their health care providers regarding breastfeeding, education, and support (Radzyninski & Callister, 2016). Family heritage and beliefs regarding breastfeeding also played a significant role in women choosing to breastfeed (Radzyninski & Callister, 2016). Research also suggested women often choose to breastfeed out of guilt because the idea that breast is best makes mothers feel guilty if they don't breastfeed (Radzyninski & Callister, 2016).

A study conducted by Neter & Begants (2020) suggested, a women's compensatory health belief (CHB) directly influenced her decision to breastfeed or not. Women who have been well educated have personal views regarding the health outcomes

of breastfeeding often choose to breastfeed (Neter & Begants, 2020). The results of this study indicated that women who believed breastfeeding to result in overall improvement of health were more likely to breastfeed (Neter & Begants, 2020). Women often listed unhealthy lifestyle habits such as smoking and drug use to not breastfeeding (Neter & Begants, 2020).

Cultural and religious beliefs are often associated with a women's choice to breastfeed. Women in developing countries such as the United States of America (USA) often choose not to breastfeed, because the American culture views the use of breast solely as it relates to sexual pleasure, believes breastfeeding is only for newborns, and views breastfeeding only be performed in a private setting (Daglas & Antonioum, 2012). Women in the United States often lack family support from their husbands, mother, and grandmother, which results in choosing not to breastfeed (Daglas & Antonioum, 2012). In underdeveloped countries, women choose to breastfeed because their breastmilk is the only source of nutrition available to their newborn (Daglas & Antonioum, 2012). Exclusive breastfeeding rates in underdeveloped countries are as high as 99%, which is excellent compared to the international rate of 39% (Daglas & Antonioum, 2012). As a result of only 39% of women choosing breastmilk as a form of nutrition, there is still significant work to educate women on the importance of breastfeeding.

The benefits of breastmilk are plentiful for mothers and their children. Breast milk has been proven the best form of nutrition for infants from birth up to a year of life (Nayak, 2015). The World Health Organization (WHO) and the American Academy of Pediatrics (AAP) recommend newborns begin to breastfeed immediately after birth,

breastfeed exclusively for the first six months of life, and continue to breastfeed for at least the first year (Nayak, 2015). Breastmilk is considered the best nutrition for children under six months old because its contents include water, proteins, fats, carbohydrates, saturated and unsaturated fatty acids, cholesterol, vitamins, and a host of minerals (Couto et al., 2020).

Breastfeeding can have a positive health impact on both the mother and her child. Breastfeeding has been proven to prevent childhood illness by busting the immune system, decreasing the incidence of diabetes, and preventing obesity (Mc Loughlin, 2018). Breastfeeding can improve the infant's overall health by helping to prevent asthma, obesity, type 1 diabetes, respiratory disease, ear infections, sudden infant death syndrome, and gastrointestinal infections (CDC, 2019). Breast milk provides an abundance of nutritional essentials for babies that cannot be replicated by manufacturers (Mc Loughlin, 2018). For preterm infants, immediate skin-to-skin on the mother's bare chest and breastfeeding help regulate neonatal temperature and glucose (Phillips, 2013). Recent studies indicate that breastmilk also plays a vital role in mental health and psychomotor skills (Couto et al., 2020). As a breastfed baby ages, breastmilk has been shown to decrease blood pressure and cholesterol (Couto et al., 2020).

Breastfeeding has also been shown to prevent health care issues such as ovarian cancer in women (Mc Loughlin, 2018). For mothers, breastfeeding can positively impact their overall health by lower their risk for ovarian and breast cancer, type 2 diabetes, weight loss, and high blood pressure (CDC, 2019). Breastfeeding also helps to promote maternal/infant bonding (Abdulghani et al., 2018).

Despite these recommendations and the health benefits of breastfeeding, a vast majority of infants are not breastfed. As the lack of breastfeeding exists, improving breastfeeding rates has become a Healthy People 2020 Goal. The Healthy People 2020 goals are to increase the number of infants that have ever been breastfed to 81.9% exclusively breastfed at six months of life to 25.5% and still breastfeeding at one year of life to 34.1% (CDC, 2019). The lack of breastfeeding results in more than \$3 billion a year in health issues that could have been prevented (CDC, 2019).

There are many challenges associated with breastfeeding. As mentioned above, cultural views and beliefs can pose a challenge for women who choose to breastfeed (Daglas & Antoniou, 2012). Poor socioeconomic status and diversity often propose a challenge for women to be successful at breastfeeding (Radzynski & Callister, 2016). Attitudes and education regarding breastfeeding from health care providers are also identified in research as reasons women are not successful with breastfeeding (Radzynski & Callister, 2016). Access to postpartum support is also recognized in research as a challenge with successful breastfeeding (Keevash et al., 2018). Working mothers also find returning to work as a challenge to breastfeeding (Couto et al., 2020). Working women who choose to breastfeed at birth usually stop breastfeeding at six weeks postpartum when they must return to work (Couto et al., 2020). Thankfully, significant efforts have been made to help dissolve this challenge due to breastfeeding activists (Couto et al., 2020). As a result of this advocacy, the Labor Laws now state that women are giving time to pump while at work (Couto et al., 2020). Keevash et al. (2018)

indicated a lack of support from nursing staff is the number one reason women choose to stop breastfeeding. This project addressed this challenge.

Nurses play a huge role in supporting breastfeeding mothers. Research indicated that breastfeeding education for staff lacks nursing schools and hospital orientations (Folker-Maglaya et al., 2018). When surveyed, women stated a lack of nursing support for breastfeeding because they stopped breastfeeding (Folker-Maglaya et al., 2018). Nurses often have a considerable impact on the healthcare choices patients make, which is why breastfeeding is relevant to nursing practice. Improving the overall breastfeeding rate of the nation will improve the health of the country.

Research indicated nurses are not formally educated in providing breastfeeding support to patients (DeIoian et al., 2014). Those seeking breastfeeding support from nurses often report conflicting information from their healthcare providers as a huge barrier to successful breastfeeding (Folker-Maglay et al., 2018). Providing nurses with formal breastfeeding education is extremely important in order to increase breastfeeding rates, sustainability of breastfeeding, and healthy lifestyle habits (Folker-Maglaya et al., 2018).

Offering a formal breastfeeding education course to nurses helps to improve breastfeeding outcomes. Research conducted by Watkins & Dodgson (2010) indicated professional education interventions regarding breastfeeding improved nurses' knowledge and comfort level when offering breastfeeding support and improved the outcome of breastfeeding.

Folker-Maglaya et al., (2018) indicated a compressive evidence-based education toolkit offered to nursing students empowered nurses to assist better patient's breastfed and encouraged advocacy for breastfeeding among nurses. The study found that a formal breastfeeding education course in nursing school helps nurses support breastfeeding mothers (Folker-Maglaya et al., 2018).

Deloian et al. (2014) suggested offering a breastfeeding education program improved the gap in knowledge regarding breastfeeding for nurses. Deloian's research indicated nurses lack the necessary educated needed to provide breastfeeding support to new mothers (Deloian, 2015). The study suggested nurses reported a better understanding of breastfeeding and breastfeeding support after taking the course (Deloian, 2015).

The CEBS is essential in improving the staff's knowledge regarding breastfeeding and improving breastfeeding outcomes for patients at the practicum site. IRB approval was sought and obtained to proceed with the project.

Local Background and Context

Locally, Kentucky is not meeting the target Healthy People 2020 goals for ever breastfed which is at 72.6% and at 6 months of life which is currently at 58.7% (CDC, 2020). As the director of the labor and delivery department I can attest to the fact that the practicum site wasn't meeting the target goals regarding those who have ever been breastfed with a rate of 62.5% for fiscal year 2020. The practice-focused questions for this project, (a) what evidence in the literature shows that educating nurses on best breastfeeding practices can improve breastfeeding outcomes and (b) does providing a

formal breastfeeding education course improve nursing knowledge about breastfeeding and breastfeeding support as evidenced by a pretest/post-test situation.

The practicum site was a critical access hospital located in a rural area of Kentucky and is part of a multisystem organization. The hospital offers maternity services to women in 5 counties and deliveries around 400 babies a year. The mission of the organization is to help the community live healthier lives by offering quality health care, trusting relationships, and providing value to those served. Becoming the first choice by patients for healthcare is the organization's vision. Values of the organization are based on the acronym F.I.R.S.T.

Friendliness: Providing an environment with compassion, care and concern.

Innovation: Promoting and seeking new knowledge dissemination.

Respect: Recognize each person as valued and unique.

Service: Commitment to excellence as the only standard.

Trust: Fostering honesty, integrity, confidence, and safety.

The organization is dedicated to providing excellent health care, which was encouraging for this evidence-based breastfeeding practice project.

The obstetrical unit at the practicum site is a labor, delivery, recovery, postpartum and nursery (LDRPN) unit. Patients delivering at the site stay in the small room they delivered in and the mother/baby couplet is cared for by the same nurse. Babies room in with their mothers and only leave the room for medical treatments. The labor and delivery unit at the practicum site employs 15 registered nurses (RN) and one licensed practical nurse (LPN). Of the nursing staff four have had an evidence-based breastfeeding

education course. There are four providers who deliver at the facility, which consist of the two-family practice providers and two certified nurse midwives. Improving the breastfeeding rate is a quality indicator for the unit. As a result of only six states meeting the breastfeeding benchmarks the CDC has called upon institutions to improve breastfeeding rates at the state and local level by requiring nurses demonstrate competency in breastfeeding, teaching hand expression (CDC, 2020). Hospitals must also provide a formal assessment of clinical competency for nurses in breastfeeding support and lactation management (CDC, 2020).

At the project site breastfeeding rates have actually fallen over the years, which can be linked to staff turnover and lack of formal education training for the new staff. The 2019-2020 ever feed breast milk rate for the fiscal year at the clinical site is 62%. Providing nursing staff with a formal breastfeeding education course has been shown to be instrumental in breastfeeding success among mother immediately postpartum and throughout the first year of life (Watkins & Dodgson, 2010). The CEBS project provided the opportunity for nursing staff the skill sets to help women to successfully breastfed.

My Role

Professionally, I am the director of obstetrics at the project site. I graduated from nursing school with a bachelor's Degree in May of 2001. Shortly after passing my boards in June of 2001, I became a staff nurse at the practicum site in LDRPN. I have worked in labor and delivery my entire career and become the director of the LDRPN unit in 2010. I am an International Board Certified Lactation Consultant (IBCLC) and have been

providing professional breastfeeding support for 12 years. The LDRPN unit has a culture that supports breastfeeding, which is where my passion for breastfeeding comes from.

My motivation for this project came 18 years ago after I was unsuccessful in breastfeeding my child. I wanted to breastfeed my baby so bad, however unsuccessful. Trying to breastfeed was by far the most challenging task I ever tried to accomplish as a mother. In the hospital, no one knew how to help me breastfeed, and at home, my baby just cried all the time because he was starving to death. This horrible breastfeeding experience fueled my professional passion for becoming a breastfeeding consultant to help others who had a desire (or not) to breastfeed. I took several breastfeeding courses, became a certified lactation consultant, and became an IBCLC in 2010. I love supporting women to breastfeed. I have created a culture in the department that promotes breastfeeding; however, with staff getting promoted to leadership roles in other units, the unit has lost all but four of our breastfeeding consultants, negatively affecting the department's breastfeeding rates.

My role in this DNP staff education project was to offer the staff a formal breastfeeding education program to enhance the knowledge and ability of the nursing staff to support women to breastfeed. I researched the literature regarding breastfeeding, the importance of providing breastfeeding education to nursing staff, and finding a formal breastfeeding course to offer the perinatal team. I am the leader of this CEBS and was responsible for its implementation and dissemination. I disseminated the PCE curriculum, pretest/post-test, prepare evaluation material, distribute the materials, moderated the program, facilitated pretest/post-test, and arrange to have the test returned to me. Once

the tests were returned to me, I analyzed and synthesized the results. I obtained the site agreement. IRB approval was sought and granted to proceed.

Summary

Section 2 of this project described the phases of the instructional design ADDIE model, which provides education to employees. Therefore, the model provided a framework for the analysis, development, design, implementation, and evaluation of the instructional breastfeeding course staff at my practicum site. The educational course helped to bridge the gap of mothers needing breastfeeding support and staff having the skills to provide support. My role and the role of the CEOs were clarified in the planning, implementation, and evaluation of the project.

Section 3 of this project will review the problem, purpose and practice-focused questions and will identify the evidence from the literature to support the importance of the project and present the procedures for the project to produce the evidence obtained from the project with human subject protection assured. The section will be completed with a presentation on analysis and synthesis of the evidence.

Section 3: Collection and Analysis of Evidence

Introduction

The problem identified in this Doctor of Nursing Practice (DNP) project was the need for nursing staff education about breastfeeding on the women's health unit for which the project was developed. The purpose of this CEBS project was to plan, implement, and evaluate a continuing education program on breastfeeding and breastfeeding support CEBS for the staff nurses at the hospital for which the project was developed. In the U.S., only six states are meeting the breastfeeding benchmarks (CDC, 2020). Nationally, low breastfeeding rates prompted the CDC to call upon institutions to improve breastfeeding rates at the state and local levels. To improve breastfeeding outcomes, the CDC is requesting health care organizations provide nurses with the education to demonstrate competency in breastfeeding, teaching hand expression (CDC, 2020). Hospitals must also provide a formal assessment of clinical competency for nurses in breastfeeding support and lactation management (CDC, 2020). Section 3 reviewed the sources of evidence utilized in this CEBS project and provided an analysis and synthesis of the evidence produced.

Practice-Focused Question(s)

The problem identified in this Doctor of Nursing Practice (DNP) project was the need for nursing staff education about breastfeeding on the women's health unit for which the project will be developed. Despite the recommendations from WHO and the AAP for all newborns to be breastfed, the exclusive breastfeeding rate at the women's health unit, of which I am the director, was 59% for the first two quarters of the fiscal

year 2019. The issue in breastfeeding practice at this facility can be related to the nursing staff's lack of formal breastfeeding education. Subsequently, the practice-focused questions were:

- What evidence in the literature shows that educating nurses on best breastfeeding practices can improve breastfeeding outcomes?
- Does providing a formal breastfeeding education course improve nursing knowledge about breastfeeding and breastfeeding support as evidenced by a pretest/post-test situation?

Significant evidence in the literature aligns with the purpose of this CEBS project to plan, implement, and evaluate a continuing education program on breastfeeding and breastfeeding support for the staff nurses at the target hospital. The literature showed that formal education in breastfeeding improves nurses' knowledge and skillsets to improve breastfeeding outcomes (Folker-Maglaya et al., 2018).

Sources of Evidence

Evidence Generated to Support the Project

The ADDIE Model (see Appendix A) was utilized to guide this education project during which a literature review was ongoing during the planning and development steps. A comprehensive summary of the evidence used to address the first practice-focused question was placed in the Literature Review Matrix (see Appendix B). Information provided includes a complete reference for each article utilized in this CEBS project, details of relevant frameworks, a summary of the research question(s) for each article, a

description of the information provided by each piece of literature, the finding of the literature, and a summary of the grading for each article (see Appendix B).

Evidence Generated by the DNP Project

The evidence generated by the CEBS came from the Curriculum Plan (see Appendix C), Pretest/Posttest (see Appendix D). A Pretest/Posttest Change in Knowledge by Participants figure (see Appendix E), Staff Education Program (see Appendix F), Evaluation of Staff Education Program by Participants (See Appendix G), and Summary of the Evaluation of the Staff Education Program by Participants (See Appendix H).

Curriculum Plan

The Prepared Childbirth Breastfeeding Organization developed the curriculum plan (see Appendix C). The curriculum plan included the course objective and content detail for each objective. The bibliography of the evidence-based staff education program is provided regarding the literature used for the course content (see Appendix G). The content of the literature review was placed on the Literature Review Matrix (see Appendix B) for the project. The literature was graded using the John Hopkins Nursing Evidence-Based Practice Research Appraisal (see Appendix I) and the John Hospitals Nursing Non-Research Evidence Appraisal Tool (see Appendix J). The content of the curriculum is presented (see Appendix C).

Participants

Participants for this project consisted of 10 perinatal nursing staff on the obstetrical unit who had not participated in a formal education program on breastfeeding. The perinatal nurses were chosen for this project because they have direct contact with

women who are breastfeeding. The 10 perinatal nurses selected had not had formal breastfeeding education training. The nurses selected for this project are relevant to the practice focused questions because their test results helped support the importance of providing a formal breastfeeding education course which can improve nursing knowledge regarding breastfeeding.

Procedures

The project chairperson developed several of the templates used in this CEBS project for students in this program for organizational purposes only, therefore no reliability and validity of the documents was needed.

Evaluation of the Staff Education Program by Participants (See Appendix G)

Participants of the breastfeeding class evaluated the course using the Evaluation of the Staff Education Program by Participants form, asking if the course objectives were met. The participants answered "yes" or "no" for each course objective. The course evaluation was developed by me and was based on the course objectives. I asked the surgery director to disseminate the evaluations to the students once the course and tests were completed. The surgery director also collected the evaluations. The evaluation tool didn't require a name or any other identifiable source.

Pretest/Posttest Change in Knowledge by Participants (see Appendix E)

The PCE course supplied review questions at the end of each section, which I utilized to develop the pretest/post-test. The pretest was given in person before dissemination of the PCE curriculum. Once I finished the program, the surgery director handed out the post-test once I left the room. She delivered the post-tests in an envelope

to me with no identifiable information. The pre and post-tests were numbered 1 to 10.

The participants were asked to take the same numbered post-test as they did for the pre-test. The pretest/post-test change in knowledge results by participants (see Appendix E) was completed by the participants.

Protection

Names of all participants of the breastfeeding course and the organization were masked. The pre-test, post-test, and participant evaluations was number-coded. The surgery director distributed and collected all documents for this CEBS project for me. Ethical approval was through the Walden University's Institutional Review Board (IRB) for Doctoral Staff Education Projects. Once the chair and co-chair approved this DNP proposal, I submitted the IRB form. The IRB approval number for this project is 05-20-21-0993457.

Analysis and Synthesis

I analyzed all evidence generated by the project and incorporated this information into Section 4. Findings and recommendations for the analysis and synthesis are discussed in Section 4.

Summary Evaluation of the Staff Education Program by Participants (See Appendix H)

Each participant of the CEBS was asked to evaluate if the course objectives were adequately met using a “yes” or “no” format. The mean average of the evaluation returned by the students was analyzed using descriptive statistics.

Pretest/Posttest Change in Knowledge Results by Participants (see Appendix E)

Knowledge change from pre-test to post-test was determined using descriptive statistics indicating the percent improvement on the knowledge for surveys for each participant.

Summary

Section 3 provided a review of the problem and purpose of the project along with the practice-focused questions, identified the sources of evidence to support the project and described the evidence that was produced by the project along with the methods for analyzing the results. Protection of the participants and institution were also discussed. Section 4 of this project includes an introduction to the gap-in-practice, the practice-focused questions, the local problem, and the purpose of this doctoral project. The findings, implications, recommendations, strengths, and limitations of the project will also be presented.

Section 4: Findings and Recommendations

Introduction

The problem identified in this DNP project was the need for nursing staff education about breastfeeding on the women's health unit for which the project was developed. The gap in practice was the lack of nurses' knowledge to support the breastfeeding mother. The evidence-based literature showed that nurses are not well prepared to help patients be successful with breastfeeding (DeIoian et al., 2015), and new mothers quit breastfeeding due to the lack of support and lack of staff knowledge about breastfeeding (Williams et al., 2013). The practice-focused questions were: What evidence in the literature shows that educating nurses on best breastfeeding practices can improve breastfeeding outcomes? Does providing a formal breastfeeding education course improve nursing knowledge about breastfeeding and breastfeeding support as evidenced by a pretest/posttest situation? The purpose of this DNP project was to plan, implement, and evaluate a continuing education program on breastfeeding and breastfeeding support for the perinatal staff nurses at the target hospital.

The model used to guide this education project was the ADDIE Model (see Appendix A). The literature review (See Appendix B) containing the evidence used to support the practice-focused questions addressed in the project contains research and evidence used for this project. Information provided in the Literature Review Matrix includes a complete reference for each article utilized, details of relevant frameworks, a summary of the research question(s) for each article, a description of the information provided by each piece of literature, the finding of the literature, and a summary of the

grading each article. Johns Hopkins Nursing Evidence Appraisal Tool Research (see Appendix I) and Johns Hopkins Nursing Non-Evidence Appraisal Tool Research (see Appendix J) were used with permission as a guide for reviewing and grading the literature. The evaluation of the Curriculum Plan (see Appendix C), the Staff Education), and the Pretest/Posttest (see Appendix D) are also sources of evidence utilized in this project.

The evidence generated by CEBS came from the Summary of the Evaluation of the Staff Education Program by Participants (See Appendix H) and the Pretest/Posttest Change in Knowledge by Participants Summary (see Appendix E). The evaluation of the staff education program was analyzed using descriptive analysis by myself using percentages and averages of the staff evaluation of the program and data generated by the change in knowledge comparing the pretest and posttest. Section 4 of this project summarizes the local problem, gap in practice, purpose of the project, how the evidence was obtained, findings and implications of the project, recommendations, strengths, and limitations of the CEBS project.

Findings and Implications

Evidence from the literature supports providing formal breastfeeding education to perinatal staff to improve staff knowledge, assisting with, and support women who breastfeed. A formal breastfeeding course designed by Prepared Child Birth Educators (PCE) was purchased for each staff member of the LDRPN unit at the project site. Ten members of the perinatal team took the breastfeeding education course. For the purpose of this project, content experts were not indicated, as the course has been deemed

evidence-based and approved by The International Board of Lactation (PCE, 2021). The perinatal nurses who took the course will receive 19 continuing education credits from the PCE granted by the California Board of Registered Nurses (PCE, 2021). In addition to taking this breastfeeding course, each participant is eligible to set for the Breastfeeding Counselor Certification (CBC), recognized as a national certification by the American Nurses Credentialing Center (ANCC). I developed the pretest/posttest using the study questions at the end of each section of the curriculum.

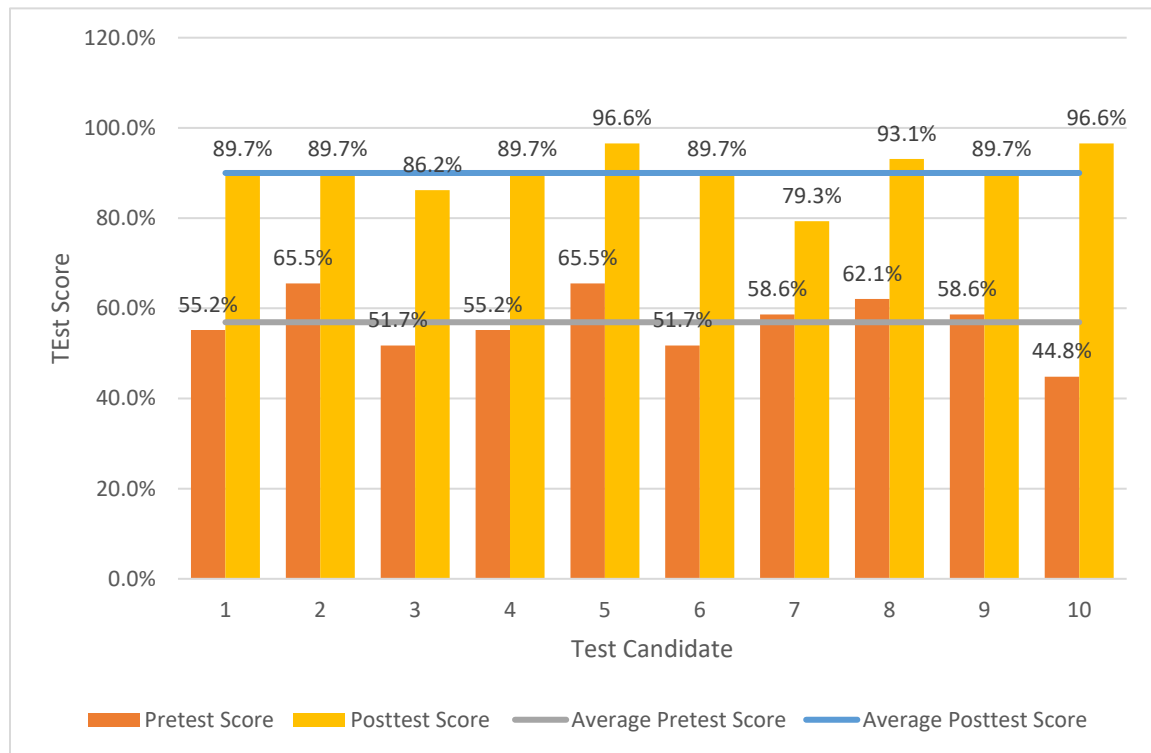
Each participant was given a pretest immediately before the breastfeeding course. Each pretest was marked with a number ranging from one to 10, which indicated the participant number. Each participant was asked to remember their test number to ensure the same participation had the identical posttest for comparison of grades. After the course, the posttest was distributed to the participants. Each participant was asked to ensure they took the same test number as the pretest.

I conducted the analysis of the change in knowledge from the pretest to posttest using descriptive statistics. Pretest scores ranged from 44.8%-65.5%, with the overall pretest average score of 56.9%. Posttest scores ranged from 79.3% to 96.6%, with an average posttest score of 90%. Results indicate a positive change in knowledge from pretest to posttest among the participants, as evidenced by improved individual scores and an improved overall average on the posttest. Each participant scored higher on the posttest than on the pretest (see Figure 1). For example, participant number 10 scored a 44.8% on the pretest and a 96.6% on the posttest. Increase in change of knowledge

ranged from 31%-52% indicate a positive change in knowledge from pretest to posttest among the participants.

Figure 1

Pretest/Posttest Scores



Analysis of the test indicated test question 11 didn't have the correct answer listed; therefore, this question was thrown out, bringing the total number of test questions to 29. Only one participant indicated, on the posttest, that number 11 didn't have the correct response. Everyone else picked from one of the answers listed. Every participant missed test question 24, which read:

Which pumping strategy is most likely to maximize the amount of milk collected?

- a. Pump at the lowest comfortable pressure.
- b. Cycle the pump slowly first, then faster as milk flows.

- c. Choose a flange diameter that fits the nipple snugly.
- d. Hands-on pumping

Choice C was the most commonly selected noted. On the posttest, eight participants missed this same question. As I reviewed everything, I noticed selection d, which was the correct answer read, "Hands of pumping." Assumptions could be made everyone didn't understand the wording of the answer, which is why it was the most frequently answered question. No one indicated there was a typo for this question. Two participants responded correctly on the posttest.

Question number 27 was missed by four participants on the pretest, which was related to drug abuse and breastmilk. The question asks, what drug decreases rapidly in breastmilk after the mother stops taking the drug. The answers listed were, a) marijuana, b) cocaine, c) amphetamines, or d) alcohol. As an IBCLC, I was shocked anyone missed this question. The correct answer is d. The old slogan "pump and dump" has always helped guide my practice when providing women education regarding drug use and breastfeeding. The CDC indicates that not drinking alcohol is the safest option for breastfeeding women, but moderate alcohol intake, which is defined by, one standard drink per day, is not known to be harmful to the baby (CDC, 2021). Only one participant missed this question on the posttest.

The evaluation of the course by the participants was excellent as evidenced by all 10 participants answering "yes" to each of the 12 learning objectives being met for the course. All 10 participants took the survey and marked "yes" for each learning objective. Comments on the survey supported the program and thanked me for providing the course.

There were unanticipated limitations for this project regarding item number 24 reading incorrectly. The error was not detected until the test was scored and entered. The question can be raised about whether the participants missed the question because of the misspelling or didn't know the answer. This limitation has no significant impact on the project regarding the outcome of this project. However, the participants were re-educated on the correct answer to ensure the evidence-based practice is disseminated regarding maximizing breastmilk.

The implication of the improved change in knowledge regarding breastfeeding will be beneficial to the perinatal staff, the OB unit, hospital, patients, and the community. The perinatal team will now be providing evidence-based breastfeeding education to patients and their families. The entire OB department has now been formally educated on breastfeeding, which will hopefully promote a culture in the unit that supports breastfeeding. As stated above, the project site is a CAH in rural Kentucky and the only CAH to offer obstetrical care. Marketing the department as having 24/7 breastfeeding educators on-site will be beneficial in attracting more patients. Now that every staff member has been formally educated regarding breastfeeding; hopefully, the unit will improve the breastfeeding rate for the organization. As mentioned above, the breastfeeding rate at the project site is currently lower than it has been in 11 years. Improving the breastfeeding rate will enhance the community's overall health, as evidence supports breastfeeding to improve the community's overall health (CDC, 2021). Overall, this project will have a positive impact on all key stakeholders.

Positive social change will be the result of educating and promoting breastfeeding will obtain healthier lifestyles. Social images regarding breasts and breastfeeding will be a considerable barrier in sustaining this project. Many patients (families) believe the purpose of the breast to be sexual, not a form of nutrition. Providing staff with this evidence-based course will hopefully remove some barriers to the staff's thought process regarding breastfeeding to deliver better support and encouragement to patients.

Recommendations

As a result of this CEBS project, a recommendation to implement requiring perinatal staff at the project site to complete an evidence-based breastfeeding course within six months of being hired will be made. This recommendation will be made because of all 10 participants in the class having a significant increase in knowledge regarding breastfeeding knowledge after taking the PCE breastfeeding course. From my experience, breastfeeding education and support efforts from frontline perinatal staff are often passed down from nurse to nurse and not based on evidence.

The gap in practice identified for this project was the lack of knowledge by nurses in supporting the breastfeeding mother. Evidence-based literature supports a need for nurses to be knowledgeable in providing breastfeeding support and helping mothers sustain breastfeeding. Literature supports the premise that nurses lack the knowledge to provide appropriate education and support to breastfeeding mothers. Breastfeeding mothers believe a lack of nursing knowledge related to breastfeeding harms breastfeeding outcomes (Folker-Maglaya et al., 2018). Offering a formal breastfeeding education class has been shown to close the gap in breastfeeding practices (Deloian et al., 2015). This

project supports nurses with an evidence-based breastfeeding course that can bridge the gap practice associated with breastfeeding.

The project site recently added patient care technicians (PCTs) to the staffing plan. As a result of this project, a recommendation to offer the breastfeeding course to the PCT's will be made. PCT's are often the first people patients encounter when asking for help. Recommendations that the obstetrical and pediatric providers take an evidence-based breastfeeding education course, as well, will be made. To ensure the gap in practice is closed, all staff of the perinatal department should take the class, not just the nursing staff. On an organization level, it would benefit the hospital to reimburse the staff for completing the course. Improving breastfeeding outcomes is a JC requirement, and frontline staff is the key to improving outcomes.

Strengths and Limitations of the Project

The major strength of this project was the breastfeeding educational material, which was filled with evidence-based information. Results in the change of breastfeeding knowledge indicated the course may have been instrumental in improving breastfeeding knowledge. Another strength is with completion of the breastfeeding course, the perinatal staff is eligible to sit for a national breastfeeding certification. The nursing staff will also receive 19 CEU hours, which is enough for state licensure. The nursing staff had very positive comments regarding the course. Statements were made such as, I realized I didn't know anything about breastfeeding before taking the course. The staff was very thankful and appreciative of being offered the course free of charge. As a result of presenting this course to the team, breastfeeding outcomes will hopefully strengthen.

A limitation of the study was some misspelled words on the test, resulting in answering questions wrong. Another limitation was having to throw out a question making the total questions 29 instead of 30. Pretest scores could have been higher if 30 questions were eligible for grading. The staff education course was only offered to the perinatal nursing staff, which was a delimitation of this project. The cost of this course is nearly \$500 a participant, which is huge limitation when attempting to expand the course requirement outside of the perinatal discipline.

In the future, expanding the course to all perinatal staff, providers, and any auxiliary staff who may be working in the department should be considered. As the project site is a small hospital, it would also be beneficial to offer all frontline staff the course. Frequently, the OR staff help the mother breastfeed in recovery, postpartum patients present in the emergency department with issues related to breastfeeding, and infants that require post neonatal discharge are admitted to the acute care department. The social change intended for this project is to improve the population's overall health by promoting breast-feeding initiation in the hospital setting and sustain breastfeeding upon discharge, thus improving the lives of infants, mothers, and families. Expanding this breastfeeding course to all staff would improve the overall health and wellbeing of the patient served and the community as a whole.

Summary

The purpose of this CEBS project was to plan, implement, and evaluate a CEBS for the staff nurses at the target hospital. The program was successfully presented to the perinatal staff and an increase in breastfeeding knowledge was indicated by improved

posttest scores compared to pretest scores. The participants' evaluation of the course indicated all the course objectives were met. Verbal comments by the CEBS students indicated the course was appreciated by the staff and they were thankful for the opportunity to take the course.

Section 5: Dissemination Plan

Locally, disseminating the evidence-based staff education related to breastfeeding to the other nursing departments of the hospital will help improve breastfeeding outcomes across the facility. The nursing staff is required to float to their respective perinatal units when breastfeeding support for postpartum mothers and their babies is needed the most. Likewise, recommendations have been made to provide education to new hires and annual competencies regarding breastfeeding will be part of the mandatory staff skills day for the nursing staff. I will present the material used for the annual competencies. The hospital is part of a multisystem organization with three hospitals, seven walk-in clinics, and a multitude of doctor offices; therefore, offering this CEBS to the perinatal staff at the other birthing hospital, could be also helpful in improving staff knowledge and breastfeeding outcomes as well as the multiple provider's offices in the healthcare system.

I will recommend that the Kentucky Board of Nursing require breastfeeding CEUs every five years as a requirement for renewal of nursing license. I serve as a chairperson on the Kentucky AWHONN Chapter and will ask to present my project findings at the annual fall state conference. I also serve as the scholarship and information officer for the Kentucky Organization of Nurse Leaders and will present a poster presentation regarding this project in the fall at the state conference by invitation. As a faculty member at a local college, I will be requesting that breastfeeding education be added to the obstetrical/pediatric curriculum.

Analysis of Self

As I look back over the last three years as a DNP student, I have grown as a professional. My passion for the staff education program derived from listening to others attempt to provide breastfeeding education and support to patients on the LDRPN. As the unit leader, I had to address the steady decline in breastfeeding outcomes, as the breastfeeding rates on the unit were below the benchmark. As an IBCLC, I often found patients would tell me no one else on the team knows anything about breastfeeding and cannot provide support to them. As a nurse, I believe education is key to providing care based on evidence. As a leader, education, nursing advocate, and supporter of breastfeeding, I believe offering a formal breastfeeding education course to the staff is essential.

The time, research, planning, implementation, and dedication I put into this project improved breastfeeding knowledge for the perinatal staff and improved my practice as an IBCLC. As a scholar, I spent a significant amount of time researching best practices to ensure presentation of the appropriate material. I have been in leadership for the last 19 years and have been the project manager on many projects, which I found beneficial when working on this project. Key stakeholders trusted that the project was necessary, the staff bought into my idea for the project and committed to making the experience successful. In the future, my experience with this project will help me grow as a project manager. As a DNP-prepared nurse, my long-term goal is to ensure knowledge and practice gaps are closed in the nursing profession. Education, implementation,

dissemination, and evaluation of evidence-based knowledge are crucial to advancing nursing as a profession.

The completion of this project has come with many challenges, most associated with the worldwide COVID pandemic. Allocation of budgetary funding to offer the course to all 10 perinatal associates took much persuasion to prove how the project would be beneficial to the organization.

To my advantage, improving breastfeeding outcomes is part of the quality improvement standards for a hospital providing perinatal care. Finishing the project was met with staffing challenges which were solved by utilizing the four CBC nurses for staffing and pulling trained obstetrical nurses from other units to provide coverage so that the perinatal team could participate in the project. The work put into this project during this scholarly journey has provided me with great insight and appreciation for the DNP prepared nurse. I can honestly say I believe DNP educated nurses should be considered experts in nursing practice. As a nurse, leader, and person, I want to be the best at everything I do. This project has helped me improve my knowledge, skill sets, and appreciation for the nursing profession.

Summary

The intended goal of the CEBS project was to improve breastfeeding outcomes by improving breastfeeding knowledge to the perinatal nurses. The need for the education was justified by research suggesting nurses lack breastfeeding education and the low breastfeeding rates at the project site. An evidence-based breastfeeding education course was offered to help close the gap in practice of the lack of breastfeeding knowledge by

staff which was shown to have been accomplished as evidenced by the pretest/posttest scores. The ability of the perinatal nursing staff to provide evidence-based breastfeeding support to new mothers will help improve the breastfeeding rate for the project site

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<http://dx.doi.org/10.1177%2F0890334417750143>

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<http://dx.doi.org/10.1055/s-0040-1703904>

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Appendix A: Assessment, Design, Development, Implementation, and Evaluation

(ADDIE) Model



Appendix B: Literature Review Matrix

John Hopkins Research Appraisal Tools Used with Permission

Reference	Theoretical Conceptual Framework	Research Questions(s) Hypothesis	Research Methodology	Purpose	Conclusions	Grading the Evidence
Abdulghani, N., Edvardsson, K, & Amir, L. (2018). Worldwide prevalence of mother-infant skin-to-skin contact after vaginal birth: A systematic review. <i>PLoS One</i> , 13(10), 1-19. https://doi.org/10.1371/journal.pone.0205696	Conceptual	Is the prevalence of Skin-to-Skin (SSC) is lower than the current recommendations?	Systemic Literature Review.	To determine the prevalence of Skin-to-Skin Contact (SSC) after a vaginal delivery for infants greater than or equal to 37 weeks.	National SSC rates are lacking.	III

<p>Anggraeni, M. D., Aji, B., Setiyani, R., Kartikasari, A., & Rahmawati, E. (2018). How do modern parents deal with cultural beliefs about breastfeeding? A qualitative study. <i>British Journal of Midwifery</i>, 26(9), 603-613. http://dx.doi.org/10.12969/bjom.2018.26.9.605</p>	<p>Conceptual</p>	<p>What cultural beliefs are associated with breastfeeding in Indonesian parents?</p>	<p>Qualitative Study</p>	<p>To explore cultural beliefs related to breastfeeding and modern Indonesian parents.</p>	<p>Healthcare providers can use the results of this study to develop a culturally sensitive education program that are congruent with modern parents' needs</p>	<p>III</p>
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<p>Batrack, M. C., Schwarz, E. B., Green, B. D., Jegier, B. J., Reinhold, A. G., Colaizy, T. J., ... Stuebe, A. M. (2016). Suboptimal breastfeeding in the United States: Maternal and pediatric health outcomes and costs. <i>Maternal Child Nutrition</i>, 13, 1-13. http://dx.doi.org/10.1111/mcn.12366</p>	Conceptual	What is the over impact on health and the cost of health care as it relates to the current breastfeeding rate in the United States?	Comprehensive Analysis	To quantify the excess cases of pediatric and maternal disease, death and cost attributable to suboptimal breastfeeding rates in the United States.	Breastfeeding is associated with considerable health impact	II
<p>Centers for Disease Control and Prevention (2019). <i>About breastfeeding.</i> https://www.cdc.gov/breastfeeding/about-breastfeeding/index.html</p>	Summative Report	How is the U.S. doing in regards to breastfeeding outcomes	Retrospective Review and Analysis	To report the U.S. breastfeeding report card.	57.6% of infants born in the U.S. were exclusively breast fed for the first 6 months of life.	IV

<p>Centers for Disease Control and Prevention (2020). <i>Breastfeeding report card U.S., 2020</i>. https://www.cdc.gov/breastfeeding/pdf/2020-Breastfeeding-Report-Card-</p>	<p>Summary Report</p>	<p>What are the current breastfeeding rates in the U.S.?</p>	<p>Retrospective Review and Analysis</p>	<p>To provide breastfeeding statistics regarding breastfeeding in the U.S.</p>	<p>Breastfeeding outcomes in the U.S. remain below the national goal.</p>	<p>IV</p>
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<p>Chu, T. L., Wang, J., Lin, H. L., Lee, H. G., Lin, C. T., Chieh, L. Y., ... Lin, Y. E. (2019). Multimedia-assisted instruction on pain assessment learning of new nurses: a quasi-experimental study. <i>BMC Medical Education</i>, 19(68). http://dx.doi.org/10.1186/s12909-019-1496-z</p>	Conceptual	What can be done to improve pain knowledge for new nurses?	Quasi-Experimental	To evaluate a multimedia instructional program to boost new nurses' ability to conduct pain assessment and treatment through simulated scenario instruction.	Pain assessment education can improve nurses' knowledge and competence.	II
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<p>Cianelli, R., Villegas, N., Azaiza, K., Henderson, S., Hooshmand, M., & Peragallo, N. (2016). Developing and testing an online breastfeeding training among undergraduate nursing students. <i>Clinical Nursing Student</i>, 3(1), 82-88. http://dx.doi.org/10.5430</p>	<p>Conceptual</p>	<p>Can an online platform be used to improve breastfeeding education for nursing staff?</p>	<p>Quantitative</p>	<p>To analyze the development of an online computer based breastfeeding training (B.T.) and the preliminary outcomes of this training.</p>	<p>Increased student knowledge related to breastfeeding, and most students believed they were fully able to support breastfeeding mothers.</p>	<p>I</p>
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<p>Clark, D. (2015). <i>Why instructional system design and ADDIE?</i> http://www.nwlink.com/~donclark/hrd/sat1.html</p>	<p>Conceptual</p>	<p>Can the ADDIE Model be a successful handbook for learning designers?</p>	<p>Systematic Review</p>	<p>To present the ADDIE Model as an adequate model to developing an instructional system design.</p>	<p>The ADDIE Model is an appropriate model for learning designers.</p>	<p>III</p>
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<p>Constancio, F.G., Couras, M.F., Nogueira, D., L.da Costa, J.P., da R Zantta, M., T de Sousa, R., Gomes, F.S., & T. da Mota, N. (2018). <i>Extended ADDIE model for improved distance learning courses</i>. IEEE Frontiers in Education Conference (FIE), San Jose, CA, USA https://dx.doi.org/10.1109/FIE.2018.8658925</p>	<p>Conceptual</p>	<p>Can the extended ADDIE Model (X-ADDIE) benefits when planning for a distance learning course?</p>	<p>Qualitative Approach.</p>	<p>Propose an Extended ADDIE (X-ADDIE) model in the elaboration of a self-instructional course to evaluate the possibility of pedagogical mediation in teaching-learning processes.</p>	<p>Acceptance of the extended ADDIE X-ADDIE for the elaboration of distance learning courses.</p>	<p>III</p>
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<p>Couto, G.R., Dias, V., Oliveira, I. (2020). Benefits of exclusive breastfeeding: An integrative review. <i>Nursing Practice Today</i>, 7(4), 245-254. https://doi.org/10.18502/nptv7i4.4034</p>	<p>Methodological</p>	<p>To determine the most current best practice regarding breastfeeding.</p>	<p>Integrative Review.</p>	<p>Identify the benefits of exclusive breastfeeding for child.</p>	<p>There are benefits for exclusive breastfeeding that should be explained to parents. Nurses need to incorporate the most recent evidence into practice to help parents realize the impact of exclusive breastfeeding.</p>	<p>V</p>
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<p>Deloian, B. J., Lewin, L. O., & O'Conner, M. E. (2015). Use of web-based education program improves nurses' knowledge of breastfeeding. <i>JOGNN</i>, <i>44</i>, 77-86. http://dx.doi.org/10.1111/1552-6909.12534</p>	<p>Conceptual</p>	<p>Does an evidence-based breastfeeding course improve breastfeeding knowledge for nurses?</p>	<p>Quantitative</p>	<p>Evaluate knowledge gained by nursing professionals from an online breastfeeding course</p>	<p>Breastfeeding knowledge improved in all content area from the pretest to the post-test.</p>	<p>II</p>
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<p>Folker-Maglaya, C., Pylman, M. E., Couch, K. A., Spatz, D. L., & Marzalik, P. R. (2018). Implementing a breastfeeding tool. Nursing education. <i>The Journal of Perinatal and Neonatal Nursing</i>, 32(2), 153-163. Retrieved from HTTP://www.jpnnjournal.com</p>	<p>Conceptual</p>	<p>Is the use of a breastfeeding education toolkit helpful to increase breastfeeding knowledge for students in an associate degree nursing program?</p>	<p>Pretest /Posttest Survey . Pilot Study.</p>	<p>To determine the effectiveness of the toolkit education as determine by a pre- and post-test scores .</p>	<p>An evidenced-based breastfeeding education program can be useful in improving nursing student's knowledge about breastfeeding and increase the students comfort level with helping new mom's breast feed.</p>	<p>III</p>
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<p>Grubestic, T., Durbin, K.M. (2019). A spatial analysis of breastfeeding and breastfeeding support in the United States: The leaders and laggards landscape. <i>Journal of Human Lactation</i>, 35(4). doi:10.1177/0890334419856615</p>	<p>Descriptive</p>	<p>To determine if particular geographical areas play a role in variation of breastfeeding rates and if availability of allied health resources impacts geography.</p>	<p>Quantitative</p>	<p>Identify important geographic trends in both breastfeeding practice and support structures in the United States</p>	<p>Significant geographic variation in breastfeeding practices and allied support is evident in the United States.</p>	<p>III</p>
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<p>Hess, A.N., & Greer, K. (2016). Designing for engagement: Using the ADDIE model to integrate high-impact practices into an online information literacy course. <i>Communications in Information Literacy</i>, 10(2). http://pdzscholar.library.pdx.edu/comminfolit/vol10/iss2/6</p>	<p>Conceptual</p>	<p>Can the ADDIE Model be helpful in designing an online information literacy course?</p>	<p>Qualitative</p>	<p>To integrate high-impact practices into an online information literacy course.</p>	<p>The ADDIE Framework can be useful to achieve several different outcomes in information literacy instructions.</p>	<p>III</p>
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<p>Hsu, T. C., Lee-Hsieh, J., Turton, M. A., & Cheng, S. F. (2014). Using the ADDIE model to develop online continuing education courses on caring for nurses in Taiwan. <i>Journal of Continuing Education in Nurses</i>, 45(3), 124-131. http://dx.doi.org/doi:10.3928/00220124-20140219-04</p>	<p>Descriptive</p>	<p>Can the ADDIE Model be useful in developing an online curriculum for a hospital in Taiwan that will promote quality of the nursing care?</p>	<p>Quantitative</p>	<p>To use the ADDIE Model to create and disseminate an online curriculum for all associates at large hospital in Taiwan.</p>	<p>ADDIE is useful in providing a model for how research data and results to inform staff of mandated organizational change. ADDIE also provides evidence on the effects of caring education</p>	<p>III</p>
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<p>Keevash, J., Norman, A., Forrest, H., & Mortimer, S. (2018). What influences women to stop or continue breastfeeding: A thematic analysis. <i>British Journal of Midwifery</i>, 26(10), 651-658.</p>	<p>Descriptive</p>	<p>What factors contribute to the breastfeeding goals as 6 months of life not being met?</p>	<p>Qualitative</p>	<p>Analyze the conditions that might influence a woman's choice to breast feed.</p>	<p>Lack of practical appropriate support key factor in early cessation of breastfeeding.</p>	<p>III</p>
<p>Mc Loughlin, G. (2018). Rooming-in for new mothers and infants versus separation Increasing the duration of breastfeeding. <i>International Journal of Nursing Practice</i>, 24. HTTPS://doi.org/10.1111/ijn.12633</p>	<p>Conceptual</p>	<p>Rooming-in can improve breastfeeding outcomes.</p>	<p>Literature Review</p>	<p>To assess the effect of mother-infant rooming-in versus separation on the duration of breastfeeding.</p>	<p>There was little evidence to support or disprove rooming-in.</p>	<p>III</p>

<p>Munn, A. C., Newman, S. D., Phillips, S. M., Mueller, M., & Taylor, S. N. (2018). Factors influencing southeastern U.S. mothers' participation in baby-friendly practices: A mixed-methods study. <i>Journal of Human Lactation</i>, 34(4), 821-834. DOI: 10.1177/0890334417750143.</p>	<p>Conceptual</p>	<p>What are the determining factors that contribute to the low rate of breastfeeding among southeastern U.S. mothers to breastfeed and participate in Baby-Friendly initiatives?</p>	<p>Mixed method cross sectional design.</p>	<p>Examine factors that influencing southeastern U.S. mothers participation in Baby-Friendly practices and breastfeeding decisions.</p>	<p>Rural U.S. African America mothers less likely to be knowledgeable about breastfeeding and Baby-Friendly practice. Consistent and culturally sensitive education and support will help improve breastfeeding among this population.</p>	<p>II</p>
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<p>Nayak, S. (2015). An observational study on breastfeeding success among postnatal mothers. <i>Nitte University Journal of Health Science</i>, 5(3). Retrieved from:pdfs semanticsolar.org</p>	<p>Descriptive</p>	<p>Breastfeeding success among postnatal mothers in a hospital setting.</p>	<p>Qualitative</p>	<p>To determine the breastfeeding success among postnatal mothers. To find an association on breastfeeding success with particular demographic variable.</p>	<p>Breastfeeding lasted 53 days longer for patient discharged from the identified hospital compared to those who didn't deliver in this setting which had an adopted breastfeeding program.</p>	<p>IV</p>
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<p>Neter, E., & Begants, L. (2020). Compensatory health beliefs on breastfeeding varying by breastfeeding status: A scale development. <i>International Journal of Environmental Research and Public Health</i>, 17(5759), 1-10. HTTPS: doi.org/10.3390/ijerph17165759.</p>	<p>Conceptual</p>	<p>There are variations in women's compensatory health beliefs (CHB) among women who breastfeed.</p>	<p>Cross-Sectional Quantitative study.</p>	<p>To examine whether CHB on breastfeeding vary as a function of breastfeeding among mothers and infants.</p>	<p>The study attests that there is ambivalence and complexity of women's view to breastfeeding.</p>	<p>II</p>
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<p>Office of the Surgeon General (2011). <i>The Surgeon General's call to action to support breastfeeding.</i> https://www.ncbi.nlm.nih.gov/books/NBK52684/table/breastfeeding</p>	Theoretical	Breastmilk is the best nutrient for newborns.	Literature Review	To educate the public health care system that actions have to take place that supports breastfeeding outcomes.	Breastfeeding can improve the overall health of the nation and health care organization must implement processes to improve breastfeeding outcomes.	V
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<p>Park, E.W., Lee, H., Yun, E. (2019). Development and evaluation of a quick response code-based nursing education program for operating and recovery room nurses. <i>Computers, Informatics, Nursing</i>, 37(11). DOI: 10.1097/CIN.0000000000000550</p>	<p>Conceptual</p>	<p>Does a Quick Response Code-Based Nursing education program prove to be effective in improving patient outcomes?</p>	<p>Literature Review</p>	<p>To develop and evaluate the effectiveness of a quick response (Q.R.) code-based nursing education program to improve competence of operating room and recovery room nurses</p>	<p>Q.R. codes help improve nurse's knowledge and competence in providing care.</p>	<p>V</p>
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<p>Phillips, R. (2013). The sacred hour: Uninterrupted skin-to-skin contact immediately after birth. <i>Newborn and Infant Nursing Reviews</i>, 13, 67-72. https://doi.org/10.1053/j.nainr.2013.04.001</p>	Theoretical	What are the benefits of skin-to-skin (STS)	Literature Review	To identify all the benefits of STS.	Being STS with the mother is the best way for healthy babies to adjust outside of the womb. STS also provides short- and long-term health benefits for both the mom and baby.	IV
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<p>Radzynski, S., & Callister, L.C. (2016). Mother's beliefs, attitudes, and decision making related to infant feeding choices. <i>The Journal of Perinatal education</i>, 25(1), 18-28. http://dx.doi.org/10.1891/1051243.25.1.18</p>	<p>Descriptive</p>	<p>The decision of mothers regarding infant feeding choice varied with each mother.</p>	<p>Qualitative</p>	<p>To review and analyze mother's beliefs, attitudes and decision making regarding infant feeding choices.</p>	<p>Maternal decision making is multifactorial regarding infant feeding methods.</p>	<p>III</p>
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<p>Watkins, A. L., & Dodgson, J. E. (2010). Breastfeeding educational interventions for health professionals: A synthesis of intervention studies. <i>Journal for Specialist in Pediatric Nursing, 15</i>(3), 223-232. http://dx.doi.org/doi:10.1111/j.1744-6155.2010.00240.</p>	<p>Conceptual</p>	<p>What critical issues are missing from current literature available to health care professions as it relates to breastfeeding?</p>	<p>Synthesis Review of Studies</p>	<p>To review intervention studies focused on increasing breastfeeding knowledge, self-confidence, and supportive behaviors of health care professionals.</p>	<p>Breastfeeding education increased the knowledge and confidence of nursing staff. As a result of the education, exclusive breastfeeding and duration of breastfeeding improved as well.</p>	<p>III</p>
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<p>Williams, A., Young, J., Kearney, L., & Keogh, S. (2013). Improving knowledge of breastfeeding management: a practice development intervention of pediatric nurses. <i>Neonatal, Pediatrics and Child Health Nursing</i>. 15(2), 8-14. Retrieved from https://search-ebcsohost-com.ezp.waldenulibrary.org</p>	<p>Conceptual</p>	<p>1. Given breastfeeding knowledge deficits of pediatric nurses identified in earlier studies 11, and busy acute care clinical units in which they work, which method of breastfeeding education for clinicians would be most appropriate, feasible and acceptable? 2. What are the priority knowledge and</p>	<p>Mixed-method design</p>	<p>To develop and pilot a specific education intervention with the aim of improving knowledge of pediatric nurses in providing evidence-based breastfeeding management in an acute care hospital Environment.</p>	<p>It is important for health care organizations to effectively support and care for breastfeeding families.</p>	<p>II</p>
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		practice need of pediatric nurses caring for breastfed infants in the acute care setting? 3. What impact does a targeted educational intervention have on pediatric nurses' knowledge of evidence-based breastfeeding management?				
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<p>Wood, N. K., & Woods, N. F. (2018). Outcomes measures in interventions that enhance breastfeeding initiation, duration, and exclusivity; A systematic review. <i>Maternal Child Nursing</i>, 43(6), 341-347. http://dx.doi.org/10.1097/NMC.0000000000000472</p>	Conceptual	Systemic Review	What interventions enhance breastfeeding initiation, duration, and exclusivity	To examine outcome measures used in interventions focusing on enhancement of breastfeeding initiation, duration, and exclusivity.	Methods of infant feeding or breastfeeding methods of infant feeding were rarely assessed, ignoring significant mediators or moderators of breastfeeding	III
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Appendix C: Curriculum Plan

Title of Project: Staff Education Regarding Breastfeeding for Perinatal Nurses

Student: Shannon Long

Problem: Lack of Perinatal Staff Knowledge About Breastfeeding.

Purpose: To Plan, Implement, and Evaluate a Continuing Education Course Regarding Breastfeeding and Breastfeeding Support for the Staff at the Target Hospital.

Practice-Focused Questions:

What evidence in the literature shows that educating nurses on best breastfeeding practices can improve breastfeeding?

Does providing a formal breastfeeding education course improve nursing knowledge about breastfeeding and breastfeeding support?

Objective Number and Statement	Detailed Content Outline	Method of Presenting	Method of Evaluation Test Number
1. Discuss the role of the healthcare professional in the promotion of breastfeeding	Role of the Healthcare Professional section of the course, pg.5	In person course material.	1
2. Apply the nursing process to the practice	Role of the Healthcare Professional section of the course, pg.5	In person course material.	2
3. Discuss the history of women and infant feeding.	History and Politics Section, pg. 13	In person course material.	3, 13
4. State the normal development of the breast from birth to lactation.	Anatomy and Physiology Section, pg. 29	In person course material.	4, 5, 6,7
5. Identify normal breastfeeding patterns in the first 24 and 48 hours of life and week one thru month 1.	Getting Started Section, pg. 49	In person course material.	8,9,16,20
6. Review the nutritional needs of the nursing dyad.	Nutrition, Section pg. 69	In person course material.	12,14
7. Identify common breastfeeding problems.	Common Problems Section, pg. 75	In person course material.	10,11,15,17,18,19

8. List measures to promote breastfeeding infants with special needs.	Special Needs Section, pg. 97	In person course material.	21
9. Describe different types of breast pumps and their uses.	Lactation Gadgets Section, pg. 125	In person course material.	24,25
10. List alternate feeding methods and their advantages.	Lactation Gadgets Section, pg. 125	In person course material.	22,23
11. List important considerations concerning lactational pharmacology.	Medication Section, pg. 147	In person course material.	27,28
12. Discuss ways to support or empower women pre and post-delivery.	Empowerment Section, pg. 153	In person course material.	26,29,30

Appendix D: Pretest/Posttest

Pre-Test/Post-Test

1. Which of the following activities is permissible under the terms of the World Health Organization's (WHO) International Code of Conduct of Marketing of Breast Milk Substitutes.
 - a. Advertisements for toddler formula on local television stations
 - b. Picture of a happy baby on the label of infant formula containers
 - c. Gift packs containing samples of formula given to new mothers at hospital discharge
 - d. Detailed information on product composition provided to health workers*
2. A cultural attitude that emphasizes the sexual nature of breast is most likely associated with:
 - a. Conflicts in custody disputes involving breastfeeding babies
 - b. Decreased breast reduction surgery
 - c. Harassment for breastfeeding in public*
 - d. Mothers enjoying the attention created by larger breast during lactation.
3. Twenty-six-year-old Sarah is having her first baby in four weeks. She asks her health care provider if she will be able to breastfeed after having a breast reeducation with her nipple auto transplanted at an earlier age. The best response is:
 - a. It may be possible for the first 3 months
 - b. She should try and see what happens*
 - c. There will be no problem breastfeeding
 - d. She won't be able to do the nerve damage
4. Accessory nipple or breast tissues is least likely to be found in which of the following locations?
 - a. Near the umbilicus
 - b. Inguinal region
 - c. Axilla
 - d. Outer thigh*
5. Which is the primary or main immunoglobulin in human milk?
 - a. IgA*
 - b. IgG
 - c. IgE
 - d. Igm
6. Which component of human milk is most variable?

- a. Minerals
 - b. Lipids*
 - c. Carbohydrates
 - d. Proteins
7. Which component of human milk is destroyed by freezing?
- a. Lysozyme
 - b. Macrophages*
 - c. Secretory IgA
 - d. Lactoferrin
8. Mary ask you what is the most effective way to increase her milk supply.
- a. Drink more fluids
 - b. Take fenugreek capsules
 - c. Hand express after feeds*
 - d. Eat more food
9. Where is the tip of the mother's nipple placed in the baby's mouth, when a baby is properly latched on?
- a. At the center of the soft palate
 - b. At the juncture of the hard and soft palates*
 - c. At the center of the hard palate
 - d. Just behind the upper gum ridge
10. Rena calls you, frustrated because her three-week-old baby's preference for nursing at the right breast is so strong that she is unable to get him to nurse on the left side. What is the least likely explanation for this baby's nursing behaviors?
- a. The baby right clavicle is fractured
 - b. The baby has a cephalohematoma on his right side
 - c. The mother has undetected breast cancer in her left breast*
 - d. There is subtle positioning difference in the mother's hold on her left side
11. The most common cause of inadequate milk supply is: **correct answer missing question thrown out.**
- a. Impaired let-down reflex
 - b. Restricted maternal fluid intake
 - c. Inadequate maternal diet
12. Keisha is a breastfeeding mother who asks you what she needs to be sure that her diet includes:
- a. Plenty of liquids to ensure sufficient milk volume
 - b. Additional B vitamins
 - c. Her normal intake of food and drink*
 - d. An extra 1200 calories per day
13. Jennifer is hesitant to breastfeed because she heard that she needs to eat a high-calorie, nutrient-rich diet during lactation. Your best response is:

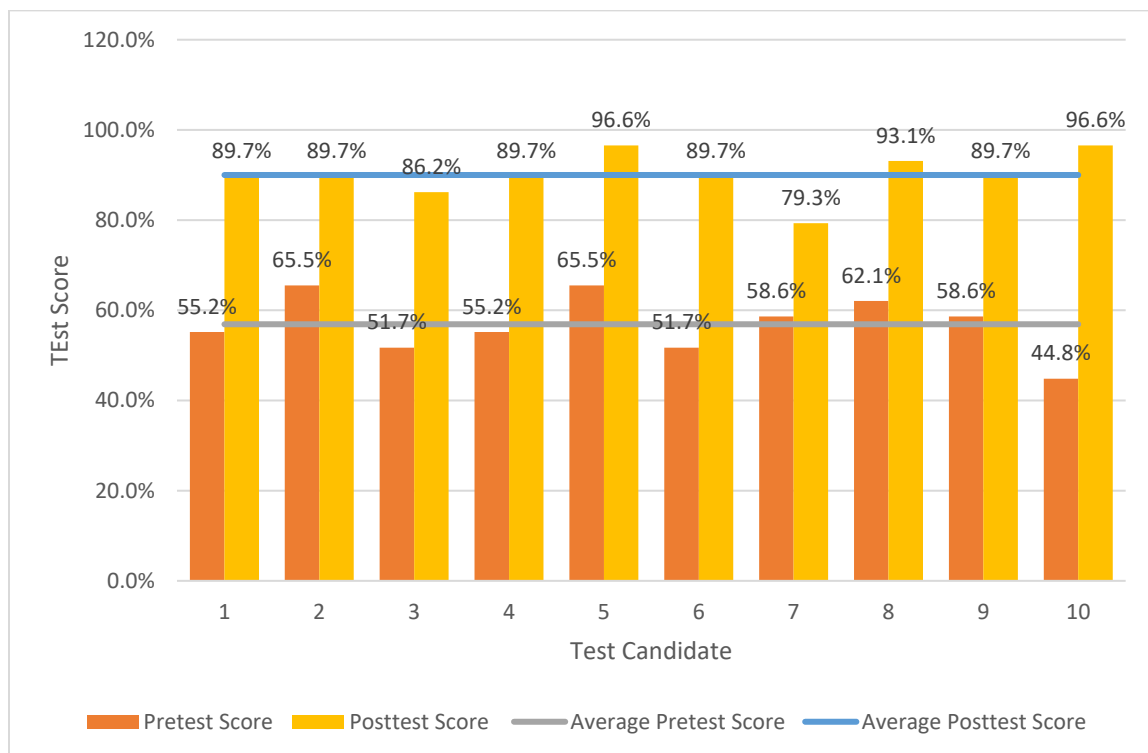
- a. Women living under a variety of circumstances are capable of fully nourishing their infants by breastfeeding*
 - b. Refer her to a supplemental food program to assure adequate nutrient intake
 - c. Provide her with a multivitamin and mineral supplement
 - d. Discharge her from breastfeeding, as her current circumstances make it doubtful that she is eating adequately
14. Amanda is a breastfeeding mother of a toddler who is also pregnant. She asks you if she needs special dietary considerations to eat for three while she is pregnant. Which suggestion is irrelevant?
- a. Double your protein*
 - b. Eat enough calories of a basic mixed diet
 - c. Gain weight within the same parameters as if you were pregnant and not breastfeeding
 - d. Do you ordinarily have special dietary needs?
15. Grace is a breastfeeding mother who is complaining of a lump in her breast. Which characteristic is least likely to be related to lactation?
- a. The lump does not change size before and after the baby feeds*
 - b. The skin over the lump is red and warm
 - c. The mother began running a low-grade fever at the same time the lump appeared
 - d. The lump feels like a soft fluid-filled sac.
16. Martin is a healthy, thriving 10-day old newborn who has a bilirubin level of 12.0 mg/dl. The first suggestion for this baby's care should be"
- a. Replace most the feeds with formula
 - b. Institute phototherapy except during feedings
 - c. Continue 10-12 effective breastfeeding every day*
 - d. Have the baby spend several sessions undressed in the sunny window
17. Carrie had surgery to drain a breast abscess. What is the most important contributing factor for breast abscess?
- a. Partial formula feeding
 - b. Maternal influenza
 - c. Sore nipples
 - d. Prolonged milk stasis*
18. You are asked to evaluate a baby's ability to breastfeed before discharge following an uncomplicated hospital birth 12 hours ago. The baby weighs about 2700g or 6 lbs. Which of the following characteristics of her sucking would lead you to suspect that this baby was not born at term?
- a. Moves smoothly from rooting behavior to latch-on
 - b. Sucks, swallows and breathes in a coordinated rhythm
 - c. Sucks in short bursts with pauses*

- d. Begins by sucking rapidly, then slow to a steady rhythm
19. You are working with a late preterm infant born at 34 weeks' gestation who has been in the hospital NICU since birth 10 days ago. The baby falls readily asleep at breast each time you assist mom to latch. Her milk supply is plentiful because of pumping. What is the most likely cause for this infant to be unable to sustain his latch at the breast?
- His suck has low intraoral pressure (vacuum) due to gestational age*
 - Prematurity causes sleepiness at breast until 40 weeks' gestation
 - This infant was fed with a bottle during his NICU stay
 - The mother has delayed lactogenesis resulting from her premature delivery
20. Krista stopped breastfeeding at 6 months, but her baby could not tolerate formula. She is requesting your help with restarting to breastfeed. What is the first suggestion you would make?
- We can talk to your doctor about prescribing medications to resume your milk supply
 - Start by putting your baby close to your breast, skin to skin, several times a day, to see how he responds*
 - Pump with a hospital grade breast pump with a double collection kit at least 8 times a day
 - It's too late now; once breastfeeding is stopped, it can't be resumed
21. Kelly's baby was born with a cleft lip. This is her second baby and she has breastfed her first baby. She asks you for help breastfeeding. What should be your first action in helping this baby breastfeed?
- Help mother position baby deeply at the breast so breast fills the baby's cleft*
 - Help the mother hand express her milk to feed with an open cup
 - Provide an electric pump with a double collection kit until the baby can latch
 - Give the mother a silicone nipple shield to create a negative pressure in bay's mouth
22. Kelsey had a breast reduction when she was 20 years old. Now that she has a baby, she may need to use:
- A breast pump to relieve engorgement
 - A nipple shield to enhance supply stimulation
 - A feeding tube system because of lactation insufficiency*
 - Breast shells to enhance nipple eversion
23. You are assisting Christine, a mother of a late preterm infant, to latch to the breast. Christine is making sufficient milk with pump support, but the baby cannot latch and maintain feeding for more than a few moments before slipping off the breast. What should be your next action?

- a. Tell mom that direct breastfeeding is too tiring for the infant and give her a bottle
 - b. Urge her to continue to pumping until the baby is ready for breastfeeding, approximately around her original due date
 - c. Suggest using a thin silicone nipple shield to keep the nipple extended in the baby's mouth during feeds*
 - d. Help her use a tube-feeding device to provide extra breastmilk at the breast
24. Which pumping stagey is most likely to maximize the amount of milk collected?
- a. Pump at the lowest comfortable pressure
 - b. Cycle the pump slowly first, then faster as milk flows
 - c. Choose a flange diameter that fits the nipple snugly
 - d. Hands on pumping*
25. Once lacto genesis 2 has occurred, mothers usually get the most milk during pumping if they:
- a. Pump at its preset minimum suction level throughout the pumping session
 - b. Raise the suction level to the pump's maximum level when milk ejection reflex occurs
 - c. Raise suction level to mother's own maximum comfort level when milk ejection occurs*
 - d. Gradually increase suction level little by little throughout the pumping session
26. June is breastfeeding and has been diagnosed with postpartum depression. Her physician discusses with you about whether or not she should continue to breastfeed during treatment. Your best response is:
- a. Several different antidepressant medications are considered compatible with breastfeeding*
 - b. All medications used to treat mental illness are contraindicated during breastfeeding
 - c. Her baby is in greater danger and should be kept away from her
 - d. The hormones of breastfeeding will exacerbate her illness
27. Which drug decreases rapidly in breastmilk after the mother stops taking the drug?
- a. Marijuana
 - b. Cocaine
 - c. Amphetamines
 - d. Alcohol*
28. Natalie received intravenous magnesium sulfate during labor to control her blood pressure and is having trouble imitating breastfeeding. The most likely explanation for this:

- a. This medication can cause maternal lethargy, confusion, and muscle relaxation*
 - b. The medicating affected the baby ability to suck
 - c. Her milk tastes unpleasant because of her medication
 - d. The drug reduced the amount of colostrum available, and the baby is frustrated.
29. Penny has just delivered her baby at 33 weeks' gestation. Which of the following statements is least likely to empower her?
- a. Don't worry dear, your baby is in good hands, we'll take care of everything*
 - b. Would you like to touch and hold her?
 - c. Your baby seems so much calmer when you're nearby
 - d. Your milk is so important for your baby: It's really great that you're expressing milk for her
30. Employers with breastfeeding support program for employees are likely to experience all of the following except:
- a. Reduced employee absenteeism
 - b. Reduced employee productivity*
 - c. Increased retention of employees
 - d. Increase employee moral

Appendix E: Pretest/Posttest Change in Knowledge by Participants



Appendix F: Staff Education Program

[Staff Education Program.pdf](#)

Appendix G: Evaluation of the Staff Education Program by Participants

Objective Statement	Were the objectives met? Please circle.	
Discuss the role of the healthcare professional in the promotion of breastfeeding	Yes No	
Apply the nursing process to the practice as the role of the healthcare professional in the promotion of breastfeeding	Yes No	
Discuss the history of women and infant feeding.	Yes No	
State the normal development of the breast from birth to lactation.	Yes No	
Identify normal breastfeeding patterns in the first 24 and 48 hours of life and week one thru month 1,	Yes No	
Review the nutritional needs of the nursing dyad.	Yes No	
List measures to promote breastfeeding infants with special needs.	Yes No	
Describe different types of breast pumps and their uses.	Yes No	
List alternate feeding methods and their advantages.	Yes No	

List alternate feeding methods and their advantages.	Yes	No	
List important considerations concerning lactational pharmacology.	Yes	No	
Discuss ways to support or empower women pre and post-delivery.	Yes	No	
Additional Comments			

Appendix H: Summary of the Evaluation of the Staff Education Program by Participants

Objective Statement	Were the objectives met? Please circle.	Number of Participants answered (Yes)	Number of Participants answered (No)
Discuss the role of the healthcare professional in the promotion of breastfeeding	Yes No	10	0
Apply the nursing process to the practice as the role of the healthcare professional in the promotion of breastfeeding	Yes No	10	0
Discuss the history of women and infant feeding.	Yes No	10	0
State the normal development of the breast from birth to lactation.	Yes No	10	0
Identify normal breastfeeding patterns in the first 24 and 48 hours of life and week one thru month 1,	Yes No	10	0
Review the nutritional needs of the nursing dyad.	Yes No	10	0
List measures to promote breastfeeding infants with special needs.	Yes No	10	0

Describe different types of breast pumps and their uses.	Yes No	10	0
List alternate feeding methods and their advantages.	Yes No	10	0
List important considerations concerning lactational pharmacology.	Yes No	10	0
Discuss ways to support or empower women pretest and post-delivery.	Yes No	10	0
Additional comments	In summary the staff indicated the course was very beneficial in improving their knowledge and understanding of breastfeeding and breastfeeding support. Several comments were made indicating how much was learned from the course.		
Indication of findings		100% of participants believed the curriculum for the course met the curriculum objectives.	

Appendix I: Johns Hopkins Nursing Evidence-Based Practice

Evidence level and quality rating:	
Article title:	Number:
Author(s):	Publication date:
Journal:	
Setting:	Sample (composition and size):
Does this evidence address my EBP question? Yes No- <i>Do not proceed with appraisal of this evidence</i>	

Is this study:**Quantitative** (collection, analysis, and reporting of numerical data)

Measurable data (how many; how much; or how often) used to formulate facts, uncover patterns in research, and generalize results from a larger sample population; provides observed effects of a program, problem, or condition, measured precisely, rather than through researcher interpretation of data. Common methods are surveys, face-to-face structured interviews, observations, and reviews of records or documents. Statistical tests are used in data analysis.

➡ Go to **Section I: Quantitative**

Qualitative (collection, analysis, and reporting of narrative data)

Rich narrative documents are used for uncovering themes; describes a problem or condition from the point of view of those experiencing it. Common methods are focus groups, individual interviews (unstructured or semi structured), and participation/ observations. Sample sizes are small and are

determined when data saturation is achieved. Data saturation is reached when the researcher identifies that no new themes emerge, and redundancy is occurring. Synthesis is used in data analysis. Often a starting point for studies when little research exists; may use results to design empirical studies. The researcher describes, analyzes, and interprets reports, descriptions, and observations from participants.

➡ Go to **Section I I: Qualitative**

Mixed methods (results reported both numerically and narratively)

Both Quantitative and Qualitative methods are used in the study design. Using both approaches, in combination, provides a better understanding of research problems than using either approach alone. Sample sizes vary based on methods used. Data collection involves collecting and analyzing both Quantitative and Qualitative data in a single study or series of studies. Interpretation is continual and can influence stages in the research process.

➡ Go to **Section I I: Mixed Methods**

Research Evidence Appraisal Tool

Section I: Quantitative

Level of Evidence (Study Design)

A	Is this a report of a single research study?	<input type="radio"/> Yes	<input type="radio"/> No Go to C
	1. Was there manipulation of an independent variable?	<input type="radio"/> Yes	<input type="radio"/> No
	2. Was there a control group?	<input type="radio"/> Yes	<input type="radio"/> No
	3. Were study participants randomly assigned to the intervention and control groups?	<input type="radio"/> Yes	<input type="radio"/> No
If Yes to questions 1, 2, and 3 , this is a <u>randomized controlled trial (RCT) or experimental study</u> .			LEVEL I
If Yes to questions 1 and 2 and No to question 3 or Yes to question 1 and No to questions 2 and 3 , this is <u>quasi-experimental</u> . (Some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups and may have a control group).			LEVEL I
If No to questions 1, 2, and 3 , this is <u>nonexperimental</u> . (No manipulation of independent variable; can be descriptive, comparative, or correlational; often uses secondary data).			LEVEL I
Study Findings That Help Answer the EBP Question			

Skip to the **Appraisal of Quantitative Research Studies** section

Research Evidence Appraisal Tool

Section I: Quantitative (continued)

<p>B Is this a summary of multiple sources of research evidence? Is this a summary of multiple sources of research?</p>	<p><input type="radio"/> Yes <i>Continue</i></p>	<p><input type="radio"/> No Use Appendix C</p>
<p>1. Does it employ a comprehensive search strategy and rigorous appraisal method? If this study includes research, nonresearch, and experiential evidence, it is an integrative review (see Appendix C).</p>	<p><input type="radio"/> Yes <i>Continue</i></p>	<p><input type="radio"/> No Use Appendix C</p>
<p>2. For systematic reviews and systematic reviews with meta-analysis (see descriptions below):</p>		
<p>a. Are all studies included RCTs?</p>	<p>LEVEL I</p>	
<p>b. Are the studies a combination of RCTs and quasi-experimental, or quasi-experimental only?</p>	<p>LEVEL I</p>	
<p>c. Are the studies a combination of RCTs, quasi-experimental, and nonexperimental, or non-experimental only?</p>	<p>LEVEL III</p>	
<p>A <u>systematic review</u> employs a search strategy and a rigorous appraisal method but does not generate an effect size. A <u>meta-analysis</u>, or systematic review with meta-analysis, combines and analyzes results from studies to generate a new statistic: the effect size.</p>		

Study Findings That Help Answer the EBP Question

Skip to the **Appraisal of Systematic Review** (With or Without a Meta-Analysis) section

Research Evidence Appraisal Tool

Appraisal of Quantitative Research Studies

Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	<input type="radio"/>	Yes	<input type="radio"/>	No	
Was the purpose of the study clearly presented?	<input type="radio"/>	Yes	<input type="radio"/>	No	
Was the literature review current (most sources within the past five years or a seminal study)?	<input type="radio"/>	Yes	<input type="radio"/>	No	
Was sample size sufficient based on study design and rationale?	<input type="radio"/>	Yes	<input type="radio"/>	No	
If there is a control group: • Were the characteristics and/ or demographics similar in both the control and intervention groups?	<input type="radio"/>	Yes	<input type="radio"/>	No	N/ A
• If multiple settings were used, were the settings similar?	<input type="radio"/>	Yes	<input type="radio"/>	No	N/ A
• Were all groups equally treated except for the intervention group(s)?	<input type="radio"/>	Yes	<input type="radio"/>	No	N/ A

Are data collection methods described clearly?	<input type="radio"/>	Yes	<input type="radio"/>	No	
Were the instruments reliable (Cronbach's α [alpha] \geq 0.70)?	<input type="radio"/>	Yes	<input type="radio"/>	No	N/ A
Was instrument validity discussed?	<input type="radio"/>	Yes	<input type="radio"/>	No	N/ A
If surveys or questionnaires were used, was the response rate \geq 25%?	<input type="radio"/>	Yes	<input type="radio"/>	No	N/ A
Were the results presented clearly?	<input type="radio"/>	Yes	<input type="radio"/>	No	
If tables were presented, was the narrative consistent with the table content?	<input type="radio"/>	Yes	<input type="radio"/>	No	N/ A
Were study limitations identified and addressed?	<input type="radio"/>	Yes	<input type="radio"/>	No	
Were conclusions based on results?	<input type="radio"/>	Yes	<input type="radio"/>	No	
Complete the <u>Quality Rating for Quantitative Studies</u> section					

Research Evidence Appraisal Tool

Appraisal of Systematic Review (With or Without Meta- Analysis)		
Were the variables of interest clearly identified?	<input type="radio"/> Yes	<input type="radio"/> No
Was the search comprehensive and reproducible?	<input type="radio"/> Yes	<input type="radio"/> No
• Key search terms stated	<input type="radio"/> Yes	<input type="radio"/> No
• Multiple databases searched and identified	<input type="radio"/> Yes	<input type="radio"/> No
• Inclusion and exclusion criteria stated	<input type="radio"/> Yes	<input type="radio"/> No
Was there a flow diagram that included the number of studies eliminated at each level of review?	<input type="radio"/> Yes	<input type="radio"/> No
Were details of included studies presented (design, sample, methods, results, outcomes, strengths, and limitations)?	<input type="radio"/> Yes	<input type="radio"/> No
Were methods for appraising the strength of evidence (level and quality) described?	<input type="radio"/> Yes	<input type="radio"/> No
Were conclusions based on results?	<input type="radio"/> Yes	<input type="radio"/> No
• Results were interpreted	<input type="radio"/> Yes	<input type="radio"/> No
• Conclusions flowed logically from the interpretation and systematic review question	<input type="radio"/> Yes	<input type="radio"/> No
Did the systematic review include a section addressing limitations and? how they were addressed?	<input type="radio"/> Yes	<input type="radio"/> No

Complete the Quality Rating for Quantitative Studies section (below)

Quality Rating for Quantitative Studies

Circle the appropriate quality rating below:

A High quality: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence.

B Good quality: Reasonably consistent results; sufficient sample size for the study design; some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence.

C Low quality or major flaws: Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.

Research Evidence Appraisal Tool

Section I I: Qualitative

Level of Evidence (Study Design)

A Is this a report of a single research study?

Yes

this is Level III

No

go to II B

Study Findings That Help Answer the EBP Question

Complete the Appraisal of Single Qualitative Research Study section (below)

Appraisal of a Single Qualitative Research Study

Was there a clearly identifiable and articulated:

• Purpose?

Yes No

• Research question?

Yes No

• Justification for method(s) used?

Yes No

• Phenomenon that is the focus of the research?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Were study sample participants representative?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Did they have knowledge of or experience with the research area?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Were participant characteristics described?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Was sampling adequate, as evidenced by achieving saturation of data?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Data analysis: • Was a verification process used in every step by checking and confirming with participants the trustworthiness of analysis and interpretation?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• Was there a description of how data were analyzed (i.e., method), by computer or manually?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do findings support the narrative data (quotes)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Do findings flow from research question to data collected to analysis undertaken?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Are conclusions clearly explained?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Skip to the <u>Quality Rating for Qualitative Studies</u> section		

Research Evidence Appraisal Tool

B: For summaries of multiple qualitative research studies (meta-synthesis), was a comprehensive search strategy and rigorous appraisal method used?	<input type="radio"/> Yes Level I II	<input type="radio"/> No go to Appendix D
Study Findings That Help Answer the EBP Question		
Complete the <u>Appraisal of Meta- Synthesis Studies</u> section (below)		

Appraisal of Meta- Synthesis Studies		
Were the search strategy and criteria for selecting primary studies clearly defined?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Were findings appropriate and convincing?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Was a description of methods used to:		
• Compare findings from each study?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• Interpret data?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Did synthesis reflect:	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• New insights?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• Discovery of essential features of phenomena?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
• A fuller understanding of the phenomena?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Was sufficient data presented to support the interpretations?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
Complete the Quality Rating for Qualitative Studies section (below)		

Quality Rating for Qualitative Studies

Circle the appropriate quality rating below:

No commonly agreed-on principles exist for judging the quality of Qualitative studies. It is a subjective process based on the extent to which study data contributes to synthesis and how much information is known about the researchers' efforts to meet the appraisal criteria.

For meta-synthesis, there is preliminary agreement that quality assessments should be made before synthesis to screen out poor-quality studies¹.

A/B High/Good quality is used for single studies and meta-syntheses².

The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry.

Evidence of some or all of the following is found in the report:

- **Transparency:** Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated.
- **Diligence:** Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence.
- **Verification:** The process of checking, confirming, and ensuring methodologic coherence.
- **Self-reflection and self-scrutiny:** Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations.
- **Participant-driven inquiry:** Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated.
- **Insightful interpretation:** Data and knowledge are linked in meaningful ways to relevant literature.

C Lower-quality studies contribute little to the overall review of findings and have few, if any, of the features listed for High/Good quality.

Research Evidence Appraisal Tool

Section I I I: Mixed Methods

Level of Evidence (Study Design)

You will need to appraise both the Quantitative and Qualitative parts of the study independently, before appraising the study in its entirety.

1. Evaluate the Quantitative part of the study using Section I.	Level	Quality
Insert here the level of evidence and overall quality for this part:		
2. Evaluate the Qualitative part of the study using Section II.	Level	Quality
Insert here the level of evidence and overall quality for this part:		
3. To determine the level of evidence, circle the appropriate study design:		
<ul style="list-style-type: none"> • Explanatory sequential designs collect Quantitative data first, followed by the Qualitative data; and their purpose is to explain Quantitative results using Qualitative findings. The level is determined based on the level of the Quantitative part. • Exploratory sequential designs collect Qualitative data first, followed by the Quantitative data; and their purpose is to explain Qualitative findings using the Quantitative results. The level is determined based on the level of the Qualitative part, and it is always Level I I I. • Convergent parallel designs collect the Qualitative and Quantitative data concurrently for the purpose of providing a more complete understanding of a phenomenon by merging both datasets. These designs are Level I I I. • Multiphasic designs collect Qualitative and Quantitative data over more than one phase, with each phase informing the next phase. These designs are Level I I I. 		
Study Findings That Help Answer the EBP Question		
<p style="background-color: #cccccc; padding: 5px;">Complete the <u>Appraisal of Mixed Methods Studies</u> section (below)</p>		

Johns Hopkins Nursing Evidence-Based Practice
Research Evidence Appraisal Tool

Appraisal of Mixed Methods Studies³

Was the mixed-methods research design relevant to address the Quantitative and Qualitative research questions (or objectives)?

 Yes

 No

 N/A

Was the research design relevant to address the Quantitative and Qualitative aspects of the mixed-methods question (or objective)?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
For convergent parallel designs, was the integration of Quantitative and Qualitative data (or results) relevant to address the research question or objective?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
For convergent parallel designs, were the limitations associated with the integration (for example, the divergence of Qualitative and Quantitative data or results) sufficiently addressed?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Complete the <u>Quality Rating for Mixed- Method Studies</u> section (below)			

3 National Collaborating Centre for Methods and Tools. (2015). Appraising Qualitative, Quantitative, and Mixed Methods Studies included in Mixed Studies Reviews: The MMAT. Hamilton, ON: McMaster University. (Updated 20 July 2015). <http://www.nccmt.ca/resources/search/232>

Quality Rating for Mixed-Methods Studies
Circle the appropriate quality rating below
<p>A <u>High quality:</u> Contains high-quality Quantitative and Qualitative study components; highly relevant study design; relevant integration of data or results; and careful consideration of the limitations of the chosen approach.</p> <p>B <u>Good quality:</u> Contains good-quality Quantitative and Qualitative study components; relevant study design; moderately relevant integration of data or results; and some discussion of limitations of integration.</p> <p>C <u>Low quality or major flaws:</u> Contains low quality Quantitative and Qualitative study components; study design not relevant to research questions or objectives; poorly integrated data or results; and no consideration of limits of integration.</p>

Appendix J: Johns Hopkins Nursing Evidence-Based Practice: Non-Research Evidence

Appraisal Tool

Author(s):		Publication Date:	
Journal:			
Does this evidence address the EBP question?		<input type="checkbox"/> Yes	<input type="checkbox"/> No Do not proceed with appraisal of this evidence
<p>Clinical Practice Guidelines: Systematically developed recommendations from nationally recognized experts based on research evidence or expert consensus panel. LEVEL IV</p> <p>Consensus or Position Statement: Systematically developed recommendations based on research and nationally recognized expert opinion that guides members of a professional organization in decision-making for an issue of concern. LEVEL IV</p>			
<ul style="list-style-type: none"> • Are the types of evidence included identified? • Were appropriate stakeholders involved in the development of recommendations? • Are groups to which recommendations apply and do not apply clearly stated? • Have potential biases been eliminated? • Were recommendations valid (reproducible search, expert consensus, independent review, current, and level of supporting evidence identified for each recommendation)? • Were the recommendations supported by evidence? • Are recommendations clear? 		<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No
<p>Literature Review: Summary of published literature without systematic appraisal of evidence quality or strength. LEVEL V</p>			

Organizational Experience:

Quality Improvement: Cyclical method to examine organization-specific processes at the local level. **LEVEL V**

Financial Evaluation: Economic evaluation that applies analytic techniques to identify, measure, and compare the cost and outcomes of two or more alternative programs or interventions. **LEVEL V**

Program Evaluation: Systematic assessment of the processes and/or outcomes of a program and can involve both quantitative and qualitative methods. **LEVEL V**

Setting:

Sample (composition/size):

<ul style="list-style-type: none"> • Was the aim of the project clearly stated? • Was the method adequately described? • Were process or outcome measures identified? • Were results adequately described? • Was interpretation clear and appropriate? • Are components of cost/benefit analysis described? 	<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No	<input type="checkbox"/> N/A
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Case Report: In-depth look at a person, group, or other social unit. **LEVEL V**

<ul style="list-style-type: none"> • Is the purpose of the case report clearly stated? • Is the case report clearly presented? • Are the findings of the case report supported by relevant theory or research? • Are the recommendations clearly stated and linked to the findings? 	<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> No
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Community Standard, Clinician Experience, or Consumer Preference

Community Standard: Current practice for comparable settings in the community **LEVEL V**

Clinician Experience: Knowledge gained through practice experience **LEVEL V**

Consumer Preference: Knowledge gained through life experience **LEVEL V**

Information Source(s):

Number of Sources:

<ul style="list-style-type: none"> • Source of information has credible experience. • Opinions are clearly stated. • Identified practices are consistent. 	<input type="checkbox"/> Yes <input type="checkbox"/> Yes <input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/> No <input type="checkbox"/> N/A
<p>Findings that help you answer the EBP question:</p>		
<p>QUALITY RATING FOR CLINICAL PRACTICE GUIDELINES, CONSENSUS OR POSITION STATEMENTS (LEVEL IV)</p> <p>A High quality: Material officially sponsored by a professional, public, private organization, or government agency; documentation of a systematic literature search strategy; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies and definitive conclusions; national expertise is clearly evident; developed or revised within the last 5 years.</p> <p>B Good quality: Material officially sponsored by a professional, public, private organization, or government agency; reasonably thorough and appropriate systematic literature search strategy; reasonably consistent results, sufficient numbers of well-designed studies; evaluation of strengths and limitations of included studies with fairly definitive conclusions; national expertise is clearly evident; developed or revised within the last 5 years.</p> <p>C Low quality or major flaws: Material not sponsored by an official organization or agency; undefined, poorly defined, or limited literature search strategy; no evaluation of strengths and limitations of included studies, insufficient evidence with inconsistent results, conclusions cannot be drawn; not revised within the last 5 years.</p>		

QUALITY RATING FOR ORGANIZATIONAL EXPERIENCE (LEVEL V)

- A High quality:** Clear aims and objectives; consistent results across multiple settings; formal quality improvement or financial evaluation methods used; definitive conclusions; consistent recommendations with thorough reference to scientific evidence
- B Good quality:** Clear aims and objectives; formal quality improvement or financial evaluation methods used; consistent results in a single setting; reasonably consistent recommendations with some reference to scientific evidence
- C Low quality or major flaws:** Unclear or missing aims and objectives; inconsistent results; poorly defined quality improvement/financial analysis method; recommendations cannot be made

QUALITY RATING FOR LITERATURE REVIEW, EXPERT OPINION, COMMUNITY STANDARD, CLINICIAN EXPERIENCE, CONSUMER PREFERENCE (LEVEL V)

- A High quality:** Expertise is clearly evident; draws definitive conclusions; provides scientific rationale; thought leader in the field
- B Good quality:** Expertise appears to be credible; draws fairly definitive conclusions; provides logical argument for opinions
- C Low quality or major flaws:** Expertise is not discernable or is dubious; conclusions cannot be drawn