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Educating Perinatal Nurses to Promote Bonding Techniques and Increase Support of Neonatal Intensive Care Unit Parents

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EDUCATING PERINATAL NURSES TO PROMOTE BONDING TECHNIQUES AND
INCREASE SUPPORT OF NEONATAL INTENSIVE CARE UNIT PARENTS

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Neonatal Intensive Care Unit Parents

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Abstract

NICU treatment team members and perinatal nurses must strive to educate parents and promote parent/infant bonding; failure to do so can result in poor emotional well-being of the parent. Supportive behaviors of nursing staff, and the promotion of bonding techniques inside and outside of the NICU setting can provide aid to parents throughout their NICU journey. However, perinatal nurses are often not provided the necessary knowledge and skills to promote parental bonding, emotional support, empowerment, and education to parents whose infants are unexpectedly admitted to the NICU. Purpose: The purpose of this DNP project was to increase perinatal nurses' knowledge about parental bonding, emotional support, and empowerment so that they could provide better support to parents whose infants are unexpectedly admitted to the NICU. Method: This project was accomplished through a nursing centered education initiative highlighting the knowledge and skills surrounding the topic of maternal-infant bonding to better support parents with infants admitted to the NICU. The education initiative was implemented on a women's unit designated to care for women during the antepartum, intrapartum, and postpartum periods. The author assessed the effectiveness of the education initiative by utilizing an 8-question post-survey handout which was rated on a 5-point Likert scale. The survey assessed the participant's knowledge, perception of the education content following the in-service, and the likelihood of implementing new knowledge into bedside nursing practice. Results: The overarching goal of this project was to ensure that following the education presentation, perinatal nurses would be able to utilize a family centered care approach to their nursing practice, and provide a more supportive environment that promotes bonding for parents of infants in the NICU. The data reflected positive feelings towards the education content of the in-service, which demonstrates a strong likelihood of a positive change in knowledge base and nursing practice regarding bonding promotion to parents of infants in the NICU.

Dedication

This project is dedicated to my loving husband, Steven. Without his patience, encouragement, support, and love for me, completion of this project and program would have happened much later in life, and might not have ever taken place. Thank you for always pushing me to be the best person that I can be, and for pushing me to live up to my fullest potential.

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Chapter I

Introduction

The birth of an infant can be one of the most exciting times in a parent's lifetime; however, for some the process does not go exactly as they planned or hoped. Throughout pregnancy, parents develop expectations about their prenatal experiences, what will occur during their birthing process, and about parenting styles. One of the most common unplanned issues parents face is the admission of their newborn into the neonatal intensive care unit (NICU), whether that be from the delivery of a preterm newborn, or from a term newborn that has a difficult time transitioning to extrauterine life. Often, parents do not prepare for the possibility of a preterm birth, or for other birth complications resulting in admission to a NICU. The occurrence of such an unexpected event can have detrimental effects for the parents and the infant such as ineffective bonding (Zimmerman & Bauersachs, 2012).

A preterm birth interrupts the normal intrauterine growth and development of an infant, and interferes with the psychosocial adaptation of the family unit (Zimmerman & Bauersachs, 2012). In the instance of a normal, term birth, parents are often able to immediately hold and bond with their baby, initiate skin to skin contact and breastfeeding within one hour of life, and parents can take on their new roles with minimal interruption. However, in the NICU setting, for both preterm and term births, typical parenting and bonding techniques are interrupted due to medical equipment, as well as the health status of the infant; altering the parent's perception of their new role (Zimmerman & Bauersachs, 2012).

NICU treatment team members, and perinatal nurses, must strive to educate parents, and promote maternal/infant bonding; failure to do so can result in poor emotional well-being of the mother (Alkozei, McMahon, & Lahav, 2014). Poor emotional well-being of the mother has also

been linked to a negative impact on the infant's emotional and social development (Alkozei, McMahon, & Lahav, 2014). Supportive behaviors of nursing staff can provide aid to parents throughout their NICU journey; including emotional support, parent empowerment, providing a welcoming environment in the NICU, and continued parent education (Cleveland, 2008). Perinatal nurses are typically not provided the necessary knowledge and skills to promote parental bonding, family centered care, emotional support, empowerment, and education to support parents whose infants are unexpectedly admitted to the NICU. Perinatal nurses' additional education in this area should contribute to and promote the well-being of the parents and their NICU infants.

Nurses are central to patient education, and are at the forefront of communicating with parents of infants in the NICU about their infants. Perinatal nurses, outside of the NICU, must provide support to parents to aid in reducing stressors, and in promoting bonding with the NICU infant. However, because NICU nursing care differs from that of well-baby nursing care, many perinatal nurses lack knowledge about how to best support parents of infants in the NICU. Nurses working in the NICU setting often receive extensive training specific to the care of the NICU infant population. Perinatal nurses receive extensive training specific to the care of antepartum mothers, laboring mothers, and postpartum mothers, often with an emphasis on well-baby care following delivery of the infant. To bridge this gap in knowledge, and improve the quality of perinatal nursing care, nurses must be provided with basic knowledge and understanding of the foundations of parent-infant bonding and communication in the NICU setting.

Background of the Problem

The initial reaction of parents, when they first see their infant in the NICU setting, is one of fear and sadness, which can disrupt the normal bonding process of families. Parents of preterm infants can experience increased instances of depression, anxiety, and post-traumatic stress disorder (PTSD) which can ultimately result in poor outcomes for the infant, and for parental bonding (Melnik et al, 2010). Oftentimes, parents struggle during the NICU admission process because they lack the knowledge of what to expect during their infant's NICU hospitalization (Cleveland, 2008). Parents of infants in the NICU must adapt to a new environment, cope with possible threats to the infant's health, attempt to grasp the magnitude of their infant's health status, and quickly develop new expectations for parenting roles (Alkozei, McMahon & Lahav, 2014). Additionally, parents also experience confusion and emotional strain when placed in this unpredictable life situation that has occurred (Weis, Zoffmann, & Egerod, 2013).

One of the best ways to address the stress parents experience when their infant is in the NICU is through the promotion of bonding, ongoing education, and family centered care. Family centered care is provided not just to the infant, but also to the entire family unit. Promotion of family centered care within, and outside of the NICU setting, allows for the family to be incorporated in decision-making, promotes bonding and attachment, empowers parents, and supports the family's overall emotional well-being (Weis, Zoffmann, & Egerod, 2013). Zimmerman and Bauersachs (2012) suggest that family centered care can result in physiologic stability of the infant, and reduces overall stress on the family unit. According to Alkozei, McMahon, and Lahav (2014) nursing interventions should be aimed at providing parents with emotional support, and education to reduce stress and anxiety. Additionally, it is important to

include parents in everyday care and decision-making, and promote bonding between the infant and parents (Cleveland, 2008).

Parents should also be educated on how to physiologically support their infant through touch, and skin-to-skin during care times. When an infant is born prematurely, full fetal development has not had adequate time to take place, and many issues can arise. Often the largest, and first hurdle for the infant to overcome is the underdeveloped nervous and sensory system (White-Traut, 2015). As a result, it is important for the infant to live in an environment, which is quiet, and promotes minimal disruption, so that the infant does not become overstimulated (Zimmerman & Bauersachs, 2012).

White-Traut (2015) discusses that due to immature nervous systems, some infants cannot experience touch such as light stroking, but firm to moderate touch or stroking can be appropriate in some situations depending on the infant's health status. Therefore, it is important for nurses to provide additional education about bonding techniques for unstable infants, and encourage parents to offer other stimuli to the infant such as talking quietly to the infant, making eye to eye contact with the infant, and promoting for both parents to hold hands near the infant's body (White-Traut, 2015). Once the infant is stable, uninterrupted skin to skin promotes excellent bonding between parents and infants, in addition to improving the overall well-being of the infant (Zimmerman & Bauersachs, 2012).

Problem Statement

Nurses caring for mothers during the course of their prenatal care must possess knowledge about how to best support patients whose infants are the NICU. Typically, perinatal nurses are experts in their field, but lack the knowledge needed to educate their patients about nursing and medical care in the NICU setting. As a result, it is difficult for nurses to support

parents of infants in the NICU outside of the NICU setting which can lead to parental stress, and impaired bonding (Morey & Gregory, 2012). It is important for perinatal nurses to provide emotional support to parents, as well as have knowledge about what parents can expect during their infant's NICU stay. Additionally, nurses must have knowledge about alternative parenting roles, bonding techniques, and family centered care within the NICU.

Significance to nursing

Currently, nursing interventions, and patient teaching in the NICU setting typically occur once the infant is admitted. However, evidence shows that if parents are provided with adequate education prior to the NICU admission, or prior to visiting their infant, outcomes are improved (Melnyk et al., 2010). Presently, if a pregnant woman is admitted to labor and delivery or an antepartum unit, and a preterm birth is possible, the obstetric (OB) provider will recommend a patient consultation with the neonatal physician or nurse practitioner. The consult typically discusses the infant's problem, risks at delivery, planned interventions, and possible immediate admission needs of the infant upon entry into the NICU. Following this consult, there is rarely additional orientation to the NICU setting, and parents are left with feelings of fear and anxiety.

The best way to provide support to these parents is through extensive education provided primarily by the nursing staff. Melnyk et al. (2010) discusses that if parents know what to expect in the NICU, they experience less stress, less depression, and less anxiety resulting in an improvement of fetal outcomes. Whenever possible, parents should be introduced to the NICU setting prior to delivery, to become oriented and get a feel for what to expect (Cleveland, 2008).

Doctor of Nursing Practice (DNP) leaders are the key to implementation of EBP into the hospital and academic settings. As evidence, and research is gathered to support education geared towards parents of infants in the NICU about bonding, it is important to synthesize that

evidence, and integrate it into nursing practice to facilitate better patient outcomes. If parents have an idea of what to expect whenever their child is in the NICU setting, they will ultimately experience less stress, anxiety, and depression which will lead to better quality interactions with their infant (Melynk et al., 2010). To achieve these outcomes, perinatal nurses outside of the NICU setting must be educated about parental bonding techniques so that they can better support their patients.

Purpose of the Project

The purpose of this project is to educate perinatal nurses so that they will be better prepared to support, educate, and promote bonding techniques to parents with infants in the NICU. McCrow, Yevchak, and Lewis (2014) discuss the importance of ongoing education in the clinical setting, and the positive impact that it can have relating to improved patient outcomes. Through a nursing centered education initiative, nurses will gain valuable knowledge and skills to support mothers with infants admitted to the NICU. Nurses will also have the opportunity to assimilate that knowledge into their prospective patient care areas.

Chapter II

Review of the Literature

An Internet search was conducted using nursing Cumulative Index of Nursing and Allied Health Literature (CINAHL), EBSCOhost, Education Full Text, ERIC, and medical (MEDLINE, PUBMED) databases. Research articles and systematic reviews were identified utilizing a combination of key words: adult learning teaching strategies, adult learners, hospital nurse education, continuing nurse education, nurse education in acute care setting, parents, NICU, NICU parent education, parent/infant bonding, parental attachment, maternal stress, neonatal, preterm, kangaroo care, neonatal touch, family centered care, breastfeeding, and parental stress. Through this extensive literature search, there were thousands of articles and publications based on these topics.

The search criteria were limited to research published between January 2012 and December 2016 to ensure current data was collected. However, after identifying a gap in the literature pertaining to teaching strategies for nurses in the acute care setting, the literature search was extended to January 2002 to perform an adequate review of the literature. Inclusion criteria also limited articles to English only, and they had to address one of the following: parent-infant attachment/bonding in NICU; NICU parent communication; NICU parent education; or effective teaching strategies for nurses in the hospital setting.

The literature identified needs of parents in the NICU setting, ways to support parents in this setting, as well as how to promote parent empowerment in the NICU; however, the literature lacked research related to teaching strategies specific to the education of nurses in the hospital setting

Teaching Strategies for Nurses in the Hospital Setting

There are a limited number of published empirical studies related to clinical education of nurses in the acute care setting. This literature review reflected that there are few research studies examining effective teaching strategies for registered nurses (RNs), and common learning styles of RNs. The most common theme throughout the published studies is that in-service training is effective, especially whenever it can be offered to all RNs at various times so that all shifts receive the opportunity for education (Arbour, 2003; Mayes & Scott-Baer, 2010; Ron & Lowenstein, 2002; Smith, Timms, Parker, Reimels, & Hamlin, 2003; and Wolak, Cairns, & Smith, 2008).

Successful implementation of an educational intervention in the clinical setting requires a thorough needs assessment, input by clinical staff, an active learning environment, and long-term follow up (Arbour, 2003). There are numerous amounts of teaching strategies that can be implemented in the hospital setting, such as in-service education. Education of staff members in a large group setting allows for teaching material to be delivered to a broad number of participants. Additionally, educating staff during an in-service allows for the education material that is covered to be standardized knowledge amongst all members of the team.

McCrow, Yevchak, and Lewis (2014) performed a prospective cohort study to distinguish preferred learning styles of nurses working in the acute care environment to aid in determining the most effective teaching methods. The authors discuss the importance of continuing education for nurses, and its relation to positive patient outcomes, and the delivery of high quality care. However, the main barriers to continuing education efforts in the hospital include time and availability, lack of access to educators or educational spaces, and cost. To ensure that nurses gain and retain valuable continuing education information, the authors set out to assess learning styles, and preferred preferences for taking on new skills or knowledge among

142 nurses. The nurses completed the Felder-Silverman Index of Learning Styles Questionnaire, and the results reflected that the majority of nurses fell into the domains of active and reflective learners (77.54%), sequential and global learners (96.68%). As a result, the authors concluded that the most effective teaching format for these learners were in a sensory stimulating environment, such as in a simulation, or through covering a case study at an in-service based on factual information relevant to the care area (McCrow et al, 2014).

Patient education at the hospital bedside is primarily delivered by nurses. For nurses to provide effective teaching to patients, it is important for nurse educators to teach nurses extensively about content, and to teach them about teaching strategies, and the teach-back method. To educate a large group, a process must ensue in which learners gain knowledge and understanding, they develop their skills through practice, they alter their attitudes about the learning topic, and then, in turn, appreciate and value the teaching content (Fidyk, Ventura, & Green, 2014). Fidyk, Ventura, and Green developed a training course for nurses that focused on the teach-back method of patient education, and implemented the course at a small hospital through a four-hour in-service. The course was comprised of presenting a video about patient education and health literacy, speaking to the group in a didactic format, encouragement of role play, and ending with an interdisciplinary panel of clinicians discussing the importance of patient education. Fifteen nurses participated in the course, which represented approximately 35% of the hospital's nursing staff. The participants were given a basic questionnaire related to feedback of the course utilizing a 4-point Likert scale (Fidyk, Ventura, & Green, 2014). The results showed that the participants were motivated to apply their learning to the clinical setting, and that the content was engaging and related to their practice. Based on the results, the authors concluded that the course needed to be longer because of the extensive amount of content that is

discussed, the course would continue with the in-service format, and the course would be limited to 25 participants.

Arbour (2003) implemented a continuous quality improvement (CQI) approach to improving the educational needs of nurses on an intensive care unit (ICU) related to the topics of sedation, analgesia, and neuromuscular blockades. The author worked as a clinical nurse specialist (CNS) on an ICU, and performed a needs assessment amongst nursing staff caring for patients under any type of sedation. The needs assessment reflected that there was a large gap in knowledge related to sedation, analgesia, and neuromuscular blockade treatments. As a result, the goals of the CQI was to reduce patient awareness and pain while paralyzed, improve pain assessment, enhance the quality of documentation, and improve specification of the reason why the patient was under sedation. To increase knowledge, the author utilized four main teaching strategies: teaching moments at the bedside; in-service education; competency-based modules; and integration of instruction into orientation on the unit. Because of the intervention, the author noted that staff reported an increased awareness of the need for adequate analgesia, physical pain assessments were completed more frequently, and the unit's quality indicator was met for documentation of patient sedation. Following the in-service, staff expressed interest in the topic, and reported that the topic was applicable to their nursing practice which, according to the adult learning theory, is linked to greater commitment to successful implementation of an intervention (Arbour, 2003).

As educators, it is important to meet the needs and demands of nursing staff on acute care units in the hospitals. Unfortunately, nurses working the night shift often get left out of in-service opportunities because most of these sessions occur during the day shift whenever management, educators, physicians, and pharmaceutical representatives are working. Mayes and

Schott-Baer (2010) developed an in-service about cardiac arrest, and geared it towards night shift nurses. The development of this in-service was inspired based on feedback stating that the night shift staff was motivated to learn, but there were few in-services held on the night shift. The authors examined previous in-service rolls, and they reflected that many night nurses were unable to attend day time in-services, because they required sleep for their next night shift. The authors included information for the in-service about patient assessment during a cardiac arrest, signs and symptoms which might predispose the patient to cardiac arrest, information about the pathophysiology of the heart, decision making during a cardiac arrest event, and the importance of teamwork. The in-service was then offered early in the night shift (between 1900 and 2300), but staying away from busy times such as medication administration (2100) to ensure that the nurses were available, more alert, and receptive to the learning. The teaching methods which were used during the in-service were lecture, handouts, games, and role playing. The authors utilized a basic survey assessing the staff satisfaction of the in-service based on a 4-point Likert scale, and the results portrayed that staff experienced a perceived increase in confidence based on the training, and they were appreciative that the in-service material was made available to the night shift staff (Mayes & Schott-Baer, 2010).

The development and purpose of in-services are to adapt theoretical content, and practical expertise to the individual needs of the unit, or group that you are educating (Ron & Lowenstein, 2002). The authors implemented a project entitled “The Institutional Resident Quality of Life Project,” which was designed to increase the quality of life and personal well-being for elderly patients living in an assisted living institution through an in-service to all staff that came into contact with the residents. The project was implemented among staff six institutions, and each participant filled out a preliminary survey related to how well the staff member valued the

content of the in-service, and a post-intervention questionnaire grading content and benefit of the in-service. The project consisted of eight different in-services for eight consecutive weeks lasting an hour and a half each session. Teaching methods which were used were didactic lecture, hands on role playing, and short group discussions. Following completion of the project intervention, 80% of the participants completed the in-service training, and filled out the post intervention questionnaire that was based on a 4-point Likert scale. The feedback reflected increased amounts of teamwork, greater respect for the patient population, and improved relationships between staff and residents. This data reinforces the importance of conducting in-service programs (Ron & Lowenstein, 2002).

Another example of the positive impact of in-services is a program that was implemented by Smith, Timms, Parker, Reimels, and Hamlin (2003) regarding the use of physical restraints in the acute care setting of the hospital. The authors identified that many nursing personnel utilized physical restraints in place of nonrestraint devices due to a perceived lack of education and knowledge based on electronic health record (EHR) documentation. As a result, the authors developed an in-service which was specifically related to nursing assessment strategies prior to the initiation of the use of restraints, and practical restraint options for patients demonstrating disruptive behaviors such as pulling out intravenous lines. Implementation of the program consisted of twenty-three formal classroom in-service offerings at varying times to ensure that all staff had the opportunity to participate, in addition to follow up computer modules which reinforced in-service content (Smith et al., 2003). Following implementation, the authors repeated their EHR chart audits, and found that the number of days spent in restraints decreased by one to two days, the total number of patients restrained decreased by one half in the three-month time period following implementation, and successful initiation of the newly introduced

nonrestraint devices was implemented for 46 patients displaying disruptive behaviors. As a result, the study reflected the positive effects of in-service training to nurses in relation to positive patient outcomes (Smith et al., 2003).

Promoting Parent Empowerment in the NICU

The main theme throughout the literature that related to parents in the NICU was importance of early education, as well as the promotion of bonding techniques, and continued education throughout the NICU stay. The literature highlights the importance of family centered care (FCC), open lines of communication amongst parents and providers, and kangaroo care. Also, the literature encouraged providing emotional support to parents, promoting parent empowerment, promoting physical contact with the infant, and providing education to parents about ways they can best support their infant during the NICU stay (Alkozei, McMahon & Lahav, 2014; Cho et al., 2016; Cleveland, 2008; Johnson, 2013; Kommers, Oei, Chen, Feijs, & Bambang Oetomo, 2015; Melnyk et al., 2010; Morey & Gregory, 2012; Skene et al., 2015; Weiss, Goldlust, & Vaucher, 2009; Weis, Zoffman & Egerod, 2013; Welch et al., 2012;).

Parental Stress in the NICU

Alkozei, McMahon, and Lahav (2014) performed a study aimed at identifying factors that increased stress levels in mothers whose infant was in the NICU. The authors administered the Parental Stressor Scale (PSS: NICU) to eighty-five parents to assess parents' perceptions of a variety of stressors in the NICU environment. They discovered stress related to the disrupted parental role was the primary stressor expressed by these parents. The authors discuss that other stressors were directly related to equipment in the NICU, the health status of the infant, and frequent periods of prolonged separation. Because of these stressors, mothers are at a high risk of suffering from postpartum depression, and post-traumatic stress disorder (PTSD) which

negatively impacts an infant's emotional, and social state. Additionally, stress levels may be increased if the mother suffered from a traumatic delivery or had complications in her pregnancy, which extended the amount of time she was separated from her infant. In response to the results, the authors recommended that future work be geared towards implementing effective interventions to improve coping; as well as, the delivery of nursing education provided to parents prior to and following the admission to the NICU, which will expectantly reduce stress in parents and the NICU environment (Alkozei, McMahon, & Lahav, 2014).

Family Centered Care

Skene et al. (2015) developed, implemented and evaluated the method of applying evidence-based practice (EBP) family centered care (FCC) in the NICU setting, to promote parental involvement in the care of infants. FCC is care provided to the family unit as a whole. Nurses promote parent empowerment through education, communication, and emotional support. Based on the outcomes of their intervention, the authors found parental involvement in the NICU not only improved infant outcomes, but also reduced the stress parents experienced, as well as facilitated bonding between the infant and parents. The interventions which were applied to best facilitate FCC in the NICU were the following: (a) skin to skin contact between parents and infants for two to three hours at a time; (b) breastfeeding, or encouraging the mother to pump so that her breastmilk could be utilized during feedings; (c) a scent cloth exchange, or exposing the infant to a cloth provided by the NICU staff which is then worn by the parent, and is then placed in the infant's isolette to aide in identification and bonding between the parent and infant; and, (d) frequent teaching sessions for parents about infant's behavior, growth, and development. Because of implementing FCC, parents could actively participate in their infant's care.

Weis, Zoffman, and Egerod, (2013) performed a qualitative study with a descriptive and comparative design to determine the benefit of FCC. They compared to standard care in the NICU setting to FCC finding that FCC was a more supportive approach. Additionally, the study identified that the intervention of FCC helped parents cope; allowing them to openly express emotions, have the opportunity to communicate with the healthcare team in a non-threatening environment, and aided in a mutual understanding between the parental units. Throughout the implementation of the study, the authors identified a gap in nursing knowledge about FCC. The authors proposed that interventions for nurses to promote FCC must be geared towards program guidance, education, as well as organizational support.

Kangaroo Care

Kangaroo care or skin to skin, in the NICU setting is linked to improved physiologic outcomes for infants (Cho et al., 2016). Additionally, kangaroo care improves bonding, and decreases stress in parents. The authors performed a quasi-experimental study with a control group (20 infants), and an experimental group (20 infants) in which kangaroo care was implemented in infants greater than 33 weeks gestation. The authors found, infants were positively impacted when they experienced at least three 30-minute sessions each week of skin to skin contact. Infant's physiologic function stabilized, maternal stress was decreased, and an increase in maternal/infant attachment was seen after at least 10 sessions. Physiologic functions were measured by determining the body weight, heart and respiration rates, oxygen saturation, and body temperatures of the NICU infants (Cho et al., 2016). The infants that did not experience kangaroo care sessions were not negatively impacted, but their physiologic status was not as stable when compared to the experimental group.

Parent-Infant Bonding in the NICU

The bonding process between infant and mother is necessary for adequate infant growth and development, as well as for their basic survival (Kommers et al., 2015). Kommers et al. (2015) performed a systematic review that assessed how unnatural stimuli such as suboptimal bonding, infection, malnutrition, and hypoxia impacted physiological development of the NICU infant. Because of these stimuli, infants can become developmentally delayed, but the delays can be reversed through bonding interventions. The authors state that it is important for providers in the NICU setting to acknowledge the need for bonding, and physical closeness between parents and infants. Based on the systematic review, the most common intervention which promotes bonding is kangaroo care (Kommers et al., 2015). Based on the findings in the systematic review, it can be concluded that interventions which promote parent and infant bonding in the NICU should be increased, and viewed as clinically necessary to prevent infants from becoming developmentally delayed.

The quality of the relationship between parents and infants is vital for maternal mental health; as well as the infant's well-being, growth, and development. Johnson (2013) performed a literature review related to maternal-infant bonding finding that maternal/infant bonding is vital their health, and is an emotional attachment that forms over a long period of time. The author discusses the fact that the infant's ability to bond with their mother other is not something instinctual, but rather is learned by the parental unit. To promote early learning about bonding techniques, it is important for nurses to introduce this topic to mothers prior to entering the NICU setting, and to reiterate teaching throughout the infant's hospital stay. As mothers care for their infants, they become more confident in their skills as a caregiver; however, this confidence building is delayed in the NICU setting due to prematurity, or the health status of the infant. This in turn puts the mothers at risk for depression, anxiety, and PTSD. Through the systematic

review, by Johnson (2013) the promotion kangaroo care, and breastfeeding to improve the bonding process in the NICU setting is vital when caring for both infant and mother.

The importance of education, parent-infant bonding, and touch were reiterated in the literature provided by Welch et al. (2012). The authors are performed a two year long randomized controlled trial determining the short and long term physiological and behavioral effects of a family nurture intervention on preterm infants in the NICU setting. They also looked at determining the emotional and behavioral outcomes in mothers as a result of the intervention in the care of infants in the NICU. Welch et al. (2012) emphasize that prolonged physical separation between mothers and infants can have adverse effects on the entire family unit. The goal of the study is to prove that increased amounts of family interventions will have a positive impact on maternal and infant outcomes simultaneously. The authors promote “nurturing interactions” to facilitate bonding and attachment such as an odor cloth exchange, firm sustained touch, vocal soothing, eye contact, skin to skin, and breastfeeding (Welch et al., 2012, p. 4). Over the course of the study, the authors will utilize the NICU Network Neurobehavioral Scale (NNNS) to assess the infant’s neurodevelopmental status in the NICU setting. Following discharge of the infant, the authors will use a series of vetted questionnaires to help in identification of developmental delays or progress such as the Early Infancy Temperament Questionnaire, and the Brief Infant-Toddler Social and Emotional Assessment. To assess the maternal stress and anxiety levels, the authors utilize the Parenting Stress Index, the Speilberger State-Trait Anxiety Inventory, and the Center for Epidemiological Studies Depression Scale. In two follow-up articles by the same authors, the trial found that by promoting nurturing interactions, the neurodevelopmental and emotional outcomes in infants were improved, and

there was marked improvement behavioral and emotional outcomes of mothers (Welch et al., 2013; Welch et al., 2015).

Cleveland (2008) performed a systematic review to determine the needs of parents with an infant in the NICU setting. Her goal was to find out what supportive behaviors parents required from staff while their infant was in the NICU. Cleveland discusses that from the time parents first step foot into the NICU following delivery they struggle with, accepting their new parenting roles, stress about the infant's health status, and anxiety about what to expect throughout their infant's NICU stay. Based on Cleveland's systematic review, six needs were identified for parents in the NICU: accurate information and inclusion of care; ability to watch over and protect the infant; physical touch or contact with the infant; positive perception from nursing staff; individualized care for their infant; and a good relationship with all members of the infant's healthcare team.

To fully support parents, Cleveland determined that nurses should provide emotional support throughout the NICU hospitalization, promote parent empowerment, provide a welcoming environment, as well as provide parents with extensive education on the NICU care process. Additionally, the author also suggests that parents should be introduced to the NICU during their prenatal preparation, along with being oriented to the unit whenever feasible; so, they can begin to build understanding/expectations of their NICU experience.

Facilitating Parent Education in the NICU

Communication is key in the NICU setting amongst NICU providers, nurses, and parents. Weiss, Goldlust, and Vaucher (2009) performed a study to assess the impact on parent satisfaction following an education intervention presented to health care providers about the importance of quality communication with parents in the NICU setting. The authors

implemented an educational module required for all healthcare providers, which highlighted effective communication techniques for parents in the NICU. Additionally, the authors developed “contact cards” to be given to each NICU parent. The contact cards contained the provider names, titles, and phone numbers; along with a poster at the entrance of the NICU displaying pictures of people parents might anticipate seeing in the NICU (Weiss, Goldlust, & Vaucher, 2009). The authors utilized a pre and post intervention questionnaire that assessed parent satisfaction after the project was implemented. They found a significant increase in parent satisfaction. Upon completion of the study the authors made the following recommendations; frequent communication between parents and providers, providers should make themselves available to parents, and providers should offer understand and empathy during the infant’s NICU stay. Because of this study, it can be concluded that parent education, and open communication improve parent satisfaction, and ultimately patient outcomes

Melynk et al. (2010) studied the impact of the implementation of the author’s program called Creating Opportunities for Personal Empowerment (COPE) in a NICU setting. COPE is an evidence-based practice program that provides parents with education about their premature infant, and how they can interact in care with their infant to meet the infant’s needs and to promote growth and development. During implementation of this program into a hospital setting, the nursing staff is educated during a day-long workshop about EBP and the COPE program, as well as how to properly support parents during their infant’s NICU stay. In addition to the nursing education intervention, parents are then educated through DVDs, workbooks, and ongoing communication with NICU nursing staff during the NICU stay, and following discharge.

The authors performed a study to measure the impact of the COPE program, assess the best strategy for implementation of the program, and assess barriers or facilitators for successful implementation (Melynk et al., 2010). The study determined that nurses that were trained in the COPE workshop were more likely to integrate EBP into their nursing practice and were more likely to provide care in lines with the COPE program that promotes parental knowledge and interaction in the NICU setting. Because of the study, the authors promote educational interventions for both parents and perinatal nurses to aid in bridging the gap of bonding in the NICU setting.

Patient education provided by nurses is a key strategy for keeping patients, and their families well informed in any hospital setting. Morey and Gregory (2012) reiterated the importance of nursing education in their study that evaluated the effect of nursing education for high risk mothers before and after the delivery of a preterm/sick infant. The authors discuss the fact that a mother's ability to cope with having an infant in the NICU is affected by her perception of the situation along with the infant's health status. Morey and Gregory (2012) developed a strategy to be implemented on an antepartum unit to enhance NICU knowledge for high risk antepartum patients. The project provided patients with a tour of the NICU, a class that included an educational video about the hospital's NICU, and discussion of the clinical aspects of prematurity. Additionally, through discussion led by the project facilitator, mothers were taught about physical needs of a NICU infant, as well as given explanations for what types of care they could provide as parents, for their infant. Some of the care examples were: perform diaper changes; utilize skin to skin or kangaroo care; and breastfeed, or pump breastmilk if the infant was unable to be breastfed upon admission. The authors measured the mother's stress level with the Parental Stressor Scale: NICU (PSS: NICU) prior to the class, after the class, and

immediately after the NICU admission. The findings supported the importance of prenatal NICU education and showed that it improved maternal coping, as well as significantly decreased maternal stress.

Needs Assessment and Description of the Project

For the purpose of this project, an assessment of need was performed at a large healthcare facility in North Texas on a perinatal unit. Through interviews with the unit director, and the perinatal unit managers, a gap in perinatal nurses' knowledge of the NICU setting was identified. Working together with management, a specific population was identified to begin working with, to address the problem. Project sponsors as well as key stakeholders, an organizational assessment, identification of available resources within the facility, team selection, as well as a defined scope of the project were also mapped out with the management team.

Preterm birth, unstable health status of infants, and complicated deliveries, resulting in an infant being admitted into the NICU setting disrupts normal parenting and bonding techniques (Zimmerman & Bauersachs, 2012). The need to improve parent and infant bonding in the NICU setting via patient education from perinatal nurses was identified. However, an educational intervention will first be needed to educate perinatal nurses about bonding in the NICU due to a gap in knowledge about the NICU patient population, and typical nursing care. This need was identified through interviews with nurses in the NICU and special care nursery setting, as well as through interviews with perinatal nurses on the antepartum, labor and delivery, and postpartum units.

Population Identification

The main population identified to benefit most from this project is mothers who are anticipated to have, or who currently have an infant in the NICU setting. These mothers might

be admitted to the antepartum unit, or they would be identified in the labor and delivery setting where preterm birth, or a complicated delivery was deemed imminent. Following delivery, the mothers would then follow with admission to the postpartum or gynecological unit for the remainder of their stay. Additionally, the nursing staff on the antepartum, labor and delivery, postpartum, and gynecological units would also benefit from this project. These nurses will gain valuable information about how to better support the NICU parent population through the promotion of bonding techniques. The gynecological unit was added to the group of perinatal nurses because it is the primary unit at the facility that cares for NICU mothers.

Project Sponsor and Key Stakeholders

The project sponsor is a faith-based, nonprofit, Magnet® designated healthcare facility located in North Texas. The medical center is an 888-bed acute care hospital, and is affiliated with a hospital system comprised of a total of 24 acute-care and short-stay hospitals. The center for women and infants has delivered more than 120,000 babies since 1983, and is the second busiest hospital in the area. Additionally, the center for women and infants has a high-risk antepartum pregnancy care unit, a level III NICU, and a special care nursery (SCN) that is utilized as a transitional unit to the NICU.

The key stakeholders identified for this education initiative were deemed to have an interest in the positive outcomes for the project. Individuals who agreed to work directly with this author were: Director of Women's Services; Manager of the Antepartum Unit; the two managers of the Labor and Delivery Unit; Manager of the Postpartum Unit; manager of the Special Care Nursery; Manager of the NICU; Manager of the Gynecological Care Unit; and nurses of the above units who agree to participate in the patient education initiative. The facility's Nurse Scientist agreed to be the mentor to the student for this project. Additionally, the

perinatal nurses are stakeholders in this project because they will benefit from valuable education that will aid in promoting better bonding and attachment for mothers with NICU infants.

Organizational Assessment

An organizational assessment was performed with the managers of each perinatal unit, and the NICU, to ensure that the mission of the project was in alignment with the mission and values for the faith-based hospital. The project focuses on integrating EBP into the clinical setting through a nurse education initiative which aligns with core competencies within the hospital's Magnet® designation. Additionally, the project focuses on nurses promoting the emotional well-being of parents, and improved bonding between parents and infants which lies within the hospital's mission of improving the health of the people in the community in which they serve, along with their families (Texas Health Resources, 2017).

Resources

An assessment was conducted at the facility to determine if there were any current interventions being utilized on the nursing units to welcome parents to the NICU setting, or educate them about their infant's growth and development. Upon review, there were no print materials available that address the nature of this project, nor contribute to this project. The NICU does have a program called a Peek-a-Boo webcam service that allows parents, and up to **twenty-five** friends or family members, to view the NICU infant in real time. Additionally, the mother and father can record their voices while speaking to the infant, or sing to the infant to promote bonding and familiarity. However, parents are not introduced to the Peek-a-Boo concept prior to the infant's admission into the NICU. An introduction to this service, will be included in the content of the project.

The cost of implementing this project is minimal in terms of training materials for nurses, and is estimated to be less than \$500. However, the cost for the training which will be given to nurses to promote parent-infant bonding is estimated to be approximately \$30 for one hour per nurse with an estimated number of 60 nurses to be trained, totaling at \$1800. The cost per nurse was estimated according to the median market value for an RNII at the facility. However, the hospital is willing to cover this cost as an in-kind contribution of the education time for the nurses involved. The project will be presented by this author at a unit meeting in which there may also be additional presenters present, which is no cost to the author.

Team

As mentioned previously, the individual sponsors of the project are the director and managers of the women's services units at the facility. These individuals include the Director of Women's Services; the Manager of the Antepartum Unit; the two managers of the Labor and Delivery Unit; the Manager of the Postpartum Unit; the manager of the Special Care Nursery; the Manager of the NICU; and the Manager of the Gynecological Care Unit. This author will facilitate development, implementation, and evaluation of the project. Additionally, this author will work closely with the Nurse Scientist, and the managers in the NICU and SCN to ensure that the nursing and patient teaching materials are in line with best practice, and with the facility's policies and procedures. Finally, once the materials are established, the author will work with the rest of the sponsors to ensure ease of the implementation of the educational intervention amongst nurses.

Project Scope, Mission, Goals, and Objective Statements

Scope

This project is aimed at providing education to perinatal nursing staff outside of the NICU setting to provide a more family centered, and supportive bonding environment for parents of infants in the NICU. The educational intervention will focus on educating perinatal nurses on the best strategies they can use to teach and support parents whose infants may be admitted to the NICU. Learning content included in the educational intervention will focus on how to provide emotional support to parents of infants in the NICU, promote bonding techniques appropriate for stable and unstable infants, as well as stress the importance of communication amongst parents, nurses, and providers.

Project Mission

The mission of this project is to increase the knowledge base of perinatal nurses so that they can be better prepared to educate parents of infants in the NICU. Through this educational intervention, nurses will gain enhanced perinatal nursing knowledge and will be able to better serve this specific patient population. Providing nursing staff with tools to better support patients will result in improved patient outcomes. Additionally, parents of infants in the NICU will benefit from the education provided by nurses as they will have an opportunity to increase their knowledge of what to expect during their infant's NICU hospitalization, what they can do to better meet their infant's needs in addition to their own, and improve their overall interactions during the NICU stay (Melynk, et al., 2010).

Project Goal

Through education geared towards nursing staff, the goal of this project is to increase perinatal nursing knowledge about parent and infant interactions in the NICU, and introduce methods which aid in the promotion of parent and infant bonding.

Project Objectives

The expected outcome of the project is that perinatal nurses on the antepartum, labor and delivery, postpartum, and gynecological units will experience an increase in knowledge base about how to better support parents of infants in the NICU. This will be achieved through the following objectives:

1. Deliver an in-service to perinatal nursing staff which will be aimed at increasing knowledge of how to support parents of infants in the NICU, and promote bonding;
2. Decrease perinatal nursing staff's knowledge deficit of effective bonding techniques that can be utilized in the NICU setting;
3. Increase perinatal nurse's knowledge about what parents should expect in the NICU environment for their infant;
4. Promote supportive nursing behaviors outside of the NICU setting for parents of infants in the NICU centered around the promotion of bonding and family centered care;
5. Promote a change in perinatal nursing staff's bedside practice to better support parents of infants in the NICU.

Chapter III

Theoretical Underpinnings

The theory chosen for this project is Malcom Knowles' adult learning theory. This theory is based on andragogy, or the art and science of helping adults learn, and suggests that adults have specific learning requirements that differ from child learners (Kaufman, 2003). Adult learners value knowledge that will improve their skills and practice which is directly related to their current knowledge base. Adult learners are self-directed, experienced, and are oriented and motivated to learn (Gatti-Petito et al., 2013). Additionally, the adult learning theory suggests that adults thrive in a learning environment which is collaborative and utilizes a problem-based approach to teaching topics.

According to Malcom Knowles, there are five assumptions related to the characteristics of adult learners which are based on self-concept, the adult learner experience, readiness to learn, orientation to learning, and motivation to learn (Knowles, 1990). Additionally, four principles for adult learning, which are adult learner involvement, learning based on the adult's past experience, learning which is relevant and impactful to the adult learner, and a problem centered approach to learning, guided the foundation for this project (Knowles, 1990). Self-concept is directly related to the self-directedness of the adult learner. Self-concept and the adult's readiness to learn, allows adult learners to have the ability to identify a lack in their knowledge base, and then seek clarification to close that gap in knowledge. This clarification, can come in the form of continuing education specific to the adult learner's discipline, or through pursuing higher education. As adults grow older, they gather knowledge through their experiences, and assimilate it into their work, which is the epitome of the adult learner experience, another

assumption of Knowles. Finally, as adults age, or mature, their motivation to learn increases as compared to whenever they were child learners.

The adult learning theory was chosen because of the project's goal of implementing education amongst perinatal nurses to aid in improving bonding outcomes for parents of infants in the NICU. During the development of the project, the management team of the perinatal nurses will be active participants through input on the content which will be presented to the nursing staff. The management team will act as a small focus group of perinatal nurses who will verbalize the overall education needs of the nursing units. This is in line with Knowles' first principle of keeping adult learners involved in the design and development of learning.

Knowles' second principle is related to associating learning to past knowledge and experiences. The participants in this project are perinatal nurses who have all worked, in some form, with parents of infants in the NICU. Through the implementation of the education, which will be provided through an in-service to staff, nurses will have the opportunity to draw upon current knowledge related to perinatal nursing, and build upon that knowledge through the addition of knowledge about bonding in the NICU setting.

The third principle is ensuring that learning is relevant and impactful to the adult learner. Adults are most interested in topics which are directly related to their interests, and those which are most relevant to their work. The education provided to perinatal nursing staff during the in-service will be relevant to practice because it will aid them in better serving their patient population, and is directly related to perinatal nursing.

Finally, Knowles' fourth principle is ensuring that learning is problem centered. Adults approach learning as solving a problem which is recognized in the workplace (Kaufman, 2003). The problem identified for this project is a gap in knowledge for perinatal nurses about how to

effectively support parents of infants in the NICU outside of the NICU setting. To aid nurses in finding a solution to this problem, this author will implement the education initiative amongst perinatal nurses to educate nurses about how to better support parents of infants in the NICU. Following the education, nurses will be able to educate parents, and increase parents' knowledge and skills about bonding and appropriate parent/infant interactions in the NICU setting.

By utilizing the underpinnings from the adult learning theory to aid in forming the content for the education initiative, the teaching strategy of this project will be more effective, and the learners will be more receptive to the content provided. By following Knowles' four principles, as mentioned previously, teaching will be geared towards ensuring that the perinatal nursing staff will be able to: acknowledge the relevance of the project to their nursing practice, have the opportunity to increase their knowledge base by participating in the in-service, integrate the content into their nursing practice, and aid in bridging the gap in bonding between parents and infants in the NICU setting.

Chapter IV

Project Plan

Setting

The setting for the implementation of the education initiative will be at a faith-based, nonprofit, Magnet® designated healthcare facility located in North Texas, which is an 888-bed acute care hospital. The education initiative will be implemented on a women's unit designated to care for women during the antepartum, intrapartum, and postpartum periods.

Population of Interest

The population of interest for this education initiative is the perinatal nurses who regularly come into contact with parents at risk of having an infant admitted to the NICU setting. The perinatal nurses caring for these patients may work on one of several units including antepartum, labor and delivery, postpartum, or gynecology.

A needs assessment identified the need to educate perinatal nurses about parent-infant bonding in the NICU so that they can better support parents. Based on the needs assessment, there is a knowledge gap amongst perinatal nurses outside of the NICU about common care and interventions provided to NICU infants, as well as bonding techniques which can be promoted. The project is aimed at implementing an educational intervention highlighting family centered care and bonding techniques in the NICU setting so that these nurses can better support patients throughout their hospital stay.

Measures, Instruments, Activities

Implementation of the project will be held during four optional meetings on the perinatal nursing units. These meetings will be open to all perinatal staff members, which will allow for maximum participation at the facility, and will provide a platform for training and presentations

arranged by the perinatal leadership team. Two of the meetings will be presented for the day shift nurses, and two of the meetings will be presented for the night shift nurses. The author will be given approximately one hour to present the education material of the project to the perinatal nurses.

Educational activities which will be presented for this project will be in the form of in-service training. The author will be the last to present the project in the form of in-service training during town-hall meetings, to ensure that the participants consent to participating in the education initiative. If any of the perinatal nurses do not want to stay, or participate in the inservice, or the post survey, they will be able to leave at any time before, during, or after the presentation. Palis and Quiros (2014) discuss that an effective lecture is planned, and is delivered by promoting learning and thinking through questioning, facilitating listening through handouts outlining the lecture, structure and organization, and enthusiasm about lecture content. Therefore, handouts will be available to staff for content outline and clarification. Additionally, the author will advertise the in-service training prior to the meetings through flyers which will be distributed throughout the unit breakrooms, as well as announcements distributed via email by unit managers.

The author will obtain informed consent, per University of Nevada, Las Vegas Biomedical Institutional Review Board's (IRB) guidelines, prior to the start of the in-service. The author will provide all participants with the information sheet for exempt research studies, per University of Nevada, Las Vegas Biomedical Institutional Review Board's (IRB) guidelines, prior to the start of the in-service. By agreeing to verbally participate in the project activities including the in-service and a post survey, this means that they consent to participating in the project. If any of the perinatal nurses do not want to stay, or participate in the inservice, or the

post survey, they will be able to leave at any time before, during, or after the presentation (See Appendix B).

According to Reavy (2016), post project surveys are a suggested evaluation tool for the collection of data, because they provide descriptive information, which can be easily collected from participants. The questions for the surveys were developed through an extensive literature review, as well as a needs assessment with the unit managers (Johnston, Leung, Fielding, Tin, & Ho, 2003). At the time of this author starting this project, no vetted post education survey existed specifically to the primary target population. Validity of the questions in the post education survey will be vetted through face to face contact with this author's committee members.

The post survey will assess the perinatal nurses' knowledge about the importance of bonding techniques in the perinatal setting, and their willingness to implement their new knowledge into practice by utilizing an 8-question post survey handout. The participants will rate their answers on a 5-point Likert scale (See Appendix B). The survey will assess the participant's knowledge, and perception of the education content following the in-service. Once the in-service has been completed, nurses will be requested to complete the post survey and return them to the author. The survey will be anonymous, to ensure confidentiality of the participants. Completed surveys will be kept in a locked drawer in the author's office and will be destroyed three years after completion of the project.

Timeline & Project Tasks

The timeline for this project began in January 2017 with the development of the project proposal (See Appendix A). A basic proposal of the project was presented to the managers and director at the project facility in February 2017 so that the facility could approve working with

the author, as well as facilitate the completion of a needs assessment. Following proposal of the project in May of 2017 with the project committee, development of the educational content will be completed in preparation for submission as a part of the IRB application. An application will be submitted to the Institutional Review Boards (IRB) at the University of Nevada Las Vegas, and at the healthcare facility for their approval. Following IRB approval, project implementation will begin in the fall of 2017. Final tasks will include evaluation of the project, with a final project defense to the project committee at the University of Nevada Las Vegas.

Personnel, Resources, & Supports to Project

The management team and facility nurse scientist will be the primary resources and supporters of this project. As outlined earlier, the individuals working directly with the author will be Director of Women's Services, the Manager of the Antepartum Unit, the two managers of the Labor and Delivery Unit, the Manager of the Postpartum Unit, the manager of the Special Care Nursery, the Manager of the NICU, and the Manager of the Gynecological Care Unit. Additionally, the facility's Chief Nursing Officer (CNO) has expressed his support of this project. The director and managers will aid in ensuring that all project content is applicable to their units and patient population, and that the content is in line with the facility's policies, procedures, and overall mission of the hospital through ongoing communication with the author during the construction of the educational content to be presented. The facility mentor of the project will be the facility's Nurse Scientist who will be the primary liaison between the author and the facility.

Risks and Threats

Potential risks and threats to this project include lack of interest by nursing staff about the project content, lack of desire to implement the educational content into practice, and low

attendance of nurses at the meetings. These threats were identified and discussed amongst the management team and nurse scientist, and several strategies were suggested to try and avoid these problems. These strategies include advertisement of the project to nursing staff prior to the meetings; offering meetings for both night and day shift nursing staff; and handouts will be made available to nursing staff unable to attend the meetings. An additional threat to the project might be unanticipated changes which are out of the author's control such as changes in the facility's policies and procedures that might impact the content included in the project.

Evaluation Plan

Project evaluation will be conducted following implementation of the project at the facility. The author will collect the post surveys (via paper form) without any participant identifiers and compile the data during the data collection and evaluation period. Success of the project will be determined based on an evaluation of whether or not each project objective, previously mentioned in chapter two of this project, was met.

Upon implementation, the author will evaluate the post survey response rate based on the number of surveys handed out compared to the number of surveys completed at the end of the in-service. The post survey will demonstrate if the participants of the education initiative were satisfied with the teaching style, the presentation, and if they are likely to implement their new knowledge into practice. The author will compare the post survey response data to the objectives of the project to see if the education content increases the participant's perceived knowledge gain, as well as assess the response rate of the likelihood of implementing new knowledge into practice. By assessing the likelihood of implementing knowledge into practice, the author will be able to evaluate if the recommendations in the education content are likely to reach the intended patient population.

The author will evaluate overall implementation of the in-service and assess if changes or improvements will be needed in the future. This assessment will take place through evaluation of the post survey data. While the results themselves will not be quantified in a number or percentage, a modification need could be justified if a large amount of disagrees or strongly disagrees to any of the eight questions were seen on the surveys. If the Director of Women's Services, and the Perinatal Nurse Management Team agree that the education content will be a beneficial practice change, measures will be taken, following project completion, to aid in developing a long-term plan for a more permanent training platform to be established for new and novice perinatal nursing staff members. Additionally, this author will work with the director of women's services, and the perinatal nursing management team to assess sustainability of various training platforms. Training platforms which can be utilized by the facility include a training module through the facility's computer-based training site; a PowerPoint presentation which can be utilized during hospital orientation; or training handouts which can be readily available on the perinatal nursing units.

Chapter V

Project Implementation and Summary

Precis

One of the most common unplanned issues parents face at the birth of their newborn is admission into the neonatal intensive care unit (NICU), whether that be from the delivery of a preterm newborn, or from a term newborn that has a difficult time transitioning to extrauterine life. NICU treatment team members and perinatal nurses must strive to educate parents and promote parent/infant bonding; failure to do so can result in poor emotional well-being of the parent. Supportive behaviors of nursing staff, and the promotion of bonding techniques inside and outside of the NICU setting can provide aid to parents throughout their NICU journey. However, perinatal nurses are often not provided the necessary knowledge and skills to promote parental bonding, emotional support, empowerment, and education to parents whose infants are unexpectedly admitted to the NICU.

To bridge this gap in knowledge, and improve the quality of perinatal nursing care, nurses must be provided with basic knowledge and understanding of the foundations of bonding and communication within the NICU setting. The purpose of this project was to educate perinatal nurses so that they will be better prepared to support, educate, and promote bonding techniques to parents with infants in the Neonatal Intensive Care Unit (NICU). This project consisted of an education presentation which was provided for both day and night shift nurses during four separate in-service times. Each presentation lasted approximately one hour. The education content included evidence-based practice content and strategies designed to promote parent and infant bonding in the NICU setting. Following the presentation, the perinatal nursing staff participants were given an eight-item post survey on a 5-point Likert scale to evaluate

teaching style, the presentation, and likelihood for them to implement their new knowledge into practice.

Initiation of the Project

Institutional Review Board (IRB) approval from the University of Nevada Las Vegas was obtained. Additionally, a determination of non-human subject research was obtained from the institution planned for the project setting. It was determined by the IRB manager that this DNP project did not require oversight of the institution's IRB because it did not qualify as human subjects research as defined by the Department of Health and Human Services and the Food and Drug Administration.

Following IRB approval, the author contacted the perinatal nurse management team to schedule the education in-services. Once specific dates, times, and location were determined, the advertisement for the in-service was sent to all of the managers so that they could send it via email to the perinatal nursing staff. The author also printed out and laminated the advertisement for the management team so that they could post it throughout the perinatal units. These two methods ensured that the author would not have access to identifying information of the perinatal nursing staff recruited to participate in the educational in-service.

The author scheduled a one-hour time frame to present the educational in-services to the perinatal nursing staff, and for the staff to then complete the post-survey at the end of the in-service. The educational in-service included a PowerPoint presentation, as well as an informational handout summarizing the content covered in the PowerPoint which was handed out to each perinatal nurse. In order to sustain knowledge about the education content included in the in-service, the author provided the perinatal nursing staff participants with the information sheet. This information sheet highlighted key points covered throughout the in-service

presentation and can be utilized as a guide for nursing staff as they talk with patients about bonding and parenting techniques which can be utilized inside and outside of the NICU setting. The informational handout was also emailed to the perinatal nurse management team following the completion of the in-services, to ensure that the entire perinatal nursing staff had access to the educational content that was covered for future reference.

Threats and Barriers

Threats and barriers were identified as the project was initiated and included scheduling conflicts and poor participant attendance. Following IRB approval from UNLV and quality improvement (QI) determination from the hospital entity, it was determined by the perinatal nurse management team that they would like to wait until after the Christmas holiday to begin offering the educational in-services. This delayed implementation of the DNP project by one month. Also, one of the in-service presentations had to be rescheduled, by request of the perinatal management team, due to inclement weather. This delayed project implementation completion by one additional week. A new advertisement was composed to reflect the change in the in-service date and time, and staff were notified by the management team via email. However, no nurses attended the final in-service which had been rescheduled to one week later. The quick turnaround time of the change in the date and time of the final in-service could be an attributing factor to the lack of participation barrier of the project.

According to the literature, there can be a variety of hurdles which can occur during the implementation of an in-service. Such hurdles include nursing participation, ensuring that both day and night shift nurses can participate, as well as ensuring that the learners appreciate the value of the content (Fidyk, Ventura, & Green, 2014; Mayes & Schott-Baer, 2010). There was a total of 11 participants in the in-services and the post-survey. This number is small in

comparison to the approximate total number of potential 175 participants. This means that approximately 6% of the perinatal nursing staff participated in the in-service and post-survey activities. Upon completion of the in-services, several participants had informal questions and comments directed to the author whereupon it was discovered that three to four participants were occupational therapists, lactation consultants, and special care nurses, all of whom regularly come into contact with infants and parents in the NICU setting. Although this content was relevant to these learners, they were not the intended audience for the in-service because care of infants and parents in the NICU setting is their professional expertise. Additionally, assessing the unit or job description of each participant was not official information collected by the author. It is important to note that these participants could have been the attributing factors to the neutral answers to the post-survey questions. The intended audience for the in-service was perinatal nurses caring for patients on the antepartum, labor and delivery, and postpartum units.

Data Collection

Data collection was performed by utilizing an 8-question post-presentation survey based on a 5-point Likert scale. The post-survey assessed the effectiveness of teaching style, the likelihood of implementing new knowledge about bonding into bedside nursing practice, change in attitudes towards the promotion of bonding before and after a parent's child was admitted to the NICU, and confidence in the perinatal nurse's skills in educating parents of infants in the NICU about bonding techniques before and after the in-service. The post-surveys did not contain any participant identifiers, and there was not any identifying information collected from the perinatal nursing staff during the in-service. Perinatal nursing staff in attendance were given the option to complete the survey and were not required to do so in order to participate in the in-service.

Data Analysis

An analysis of the data gathered from the post-surveys was conducted to determine project outcomes. Descriptive statistics were used to analyze the data using the Statistical Package for Social Science (SPSS) version 22, to evaluate outcomes of the post-survey. The participants answered each survey on a 5-point Likert scale with one meaning that the participant strongly disagreed with the statement, and five meaning that the participant strongly agreed with the statement. Each participant's answers for the 8-question post-survey were entered into SPSS to assess frequencies of answers, and to determine the standard deviation for each question.

Findings

There was a total of 11 attendees for the in-services, and all attendees participated in the post-survey activity. Post-survey data from the 11 participants demonstrated an overall improvement in the participant's knowledge about bonding promotion for parents of infants in the NICU and showed positive feelings that nursing practice would benefit from the education content learned in the in-service with answers reflecting agree, or strongly agree. For post-survey questions 4, 5, and 8, there were neutral answers for at least three participants, however, all other post-survey answers were answered as either agree or strongly agree.

Table 1. Frequency Distribution of Valid Data (N = 11)

Question Response Value	Question Mean	Question SD	Frequency	Percent	Cumulative Percent
PISQ 1	4.727	.467	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			-	-	-
Response 4			3	27.3	27.3
Response 5			8	72.7	100
PISQ 2	4.636	.504	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			-	-	-
Response 4			4	36.4	36.4
Response 5			7	63.6	100
PISQ 3	4.454	.522	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			-	-	-
Response 4			6	54.5	54.5
Response 5			5	45.5	100
PISQ 4	4.545	.687	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			1	9.1	9.1
Response 4			3	27.3	36.4
Response 5			7	63.6	100
PISQ 5	4.272	.904	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			3	27.3	27.3
Response 4			2	18.2	45.5
Response 5			6	54.5	100
PISQ 6	4.727	.467	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			-	-	-
Response 4			3	27.3	27.3
Response 5			8	72.7	100
PISQ 7	4.727	.467	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			-	-	-
Response 4			3	27.3	27.3
Response 5			8	72.7	100
PISQ 8	4.545	.687	-	-	-
Response 1			-	-	-
Response 2			-	-	-
Response 3			1	9.1	9.1
Response 4			3	27.3	36.4
Response 5			7	63.6	100

Notes. All respondent data (N = 11) are valid with no missing data. All percentages are valid.

Discussion

Throughout the planning and implementation phases, the author utilized the perinatal nurse management team as a small focus group who verbalized the education and planning needs of the perinatal nurses. The author sent the management team copies of the educational content to be utilized in the in-service (PowerPoint® slides as well as an informational handout) to ensure that all content was relevant to the nursing staff and was in alignment with hospital policies and procedures. The initial feedback to the author from the management team was positive, and there were expressions of excitement about how well the education content could impact patient outcomes, as well as Press Ganey scores in the long-term. Press Ganey is a formal public reporting initiative that asks patients to rate and report their experiences regarding inpatient hospital stays (Press Ganey, 2018). Additionally, the author worked closely with the perinatal nurse management team with scheduling times for the in-services to ensure that they were presented at convenient times while considering day and night shift nurses, as well as typical workflow throughout each day on the nursing units. By ensuring that the learning content was impactful, problem centered, relevant to nursing practice, and by keeping the management team involved with the planning and implementation phases of the project, the author was able to ensure that the principles of Knowles' adult learning theory were met.

The data shows that a modification of the education content is not needed because there were no answers reflecting disagree or strongly disagree to any of the eight questions were seen on the surveys. According to the perinatal nurses' answers to the post intervention survey questions (PISQ) the responses reflected that the educational content was complimentary to each participant's learning style, and the education provided increased overall knowledge about bonding, alternative parenting techniques which can be utilized in the NICU setting, bonding

techniques which can be promoted in the NICU setting, and it would improve overall bedside nursing care. Because there were no disagree or strongly disagree answers the data reflects positive feelings towards the education content of the in-service, which demonstrates a strong likelihood of a positive change in knowledge base and nursing practice regarding bonding promotion to parents of infants in the NICU. As a result, this project has the potential to make a long-term positive impact on both parents and infants in the NICU setting, as well as on the nursing practice of perinatal nursing staff.

Review of the Literature

Although the literature did not reflect an intervention in which perinatal nurses were educated about bonding promotion, and family centered care, the literature did reflect a quality improvement project which educated nurses in the NICU setting about similar topics. For example, Melynk et al. (2010) assessed the effectiveness of dissemination and implementation of their program called Creating Opportunities for Personal Empowerment (COPE) as well as barriers and facilitators to successful implementation. A total of 81 out of 180 nurses participated in this education program, which was 45% of the NICU staff at the hospital. The authors provided an 8-hour workshop about EBP and COPE, and nurses who were unable to attend the workshop viewed the taped workshop on a DVD (Melynk et al., 2010). Following implementation, the authors found an increased likelihood of implementing EBP and EBP beliefs into bedside practice based on post implementation survey results. These findings are similar to those of this project, however the sample size was much greater (6% versus 45%). It is likely that these results differ in numbers because the project was focused to one nursing unit, staff interest in the project was higher, and the authors offered the opportunity to view the education content on a separate day via video.

Mayes and Schott-Baer (2010) examined the teaching and learning experiences of nightshift nurses and discussed the importance of offering educational opportunities outside of traditional 09:00 to 17:00 hours. To ensure that nightshift nurses were accommodated for this project, the perinatal nursing in-service was offered twice at 07:00 per the perinatal nursing management team's request. It was suggested by the author to offer in-services during actual nightshift hours of 19:00 to 07:00, but the management team believed that attendance would be poor due to high patient volumes and busy periods throughout the shifts on each perinatal nursing unit.

Limitations of the Project

Although the project data supports a positive change in knowledge base about bonding promotion following the in-service, there were some limitations. First, the number of participants was small in relation to the total number of nurses at the hospital entity. As a result, the data might not represent the outcomes which might have been reflected with a larger number of participants. Second, on three of the four days that the in-services were held, it was communicated to the author by the labor and delivery manager that the patient load was higher than usual, making it difficult to send nurses to the in-service during their shifts. Perhaps participation would have been improved if the author provided in-services to each separate unit, as opposed to holding four in-services. Thirdly, the participants reported what their base knowledge was prior to the presentation in the post-survey. There was no pre-survey completed due to time constraints, and there was a self-report knowledge gain in the post-survey.

Potential for Sustainability

To promote continued education about this topic, and to sustain staff knowledge about the importance of the promotion of bonding techniques for the NICU setting, the perinatal nurse

management team might consider developing a mandatory long-term plan for a permanent training platform via computer-based modules. By utilizing an asynchronous method to distribute information to nursing staff, participation would increase, and a larger group of perinatal nursing staff would be educated about the importance of bonding promotion.

The information provided in the in-services could also be delivered by members of the perinatal nursing staff who are trained by the author. These members could act as super-users on the nursing units and could deliver the education content to staff nurses during staff meetings, or during nursing shifts. By utilizing super-users, along with the utilization of the information sheet, the perinatal nurses can obtain and implement their new knowledge into bedside nursing practice, and positively impact the intended patient population.

Dissemination

Dissemination of the results of this project is planned to report project results to the stakeholders, academic community, and interdisciplinary professionals in comparable settings. Knowledge is power within the nursing community and ensuring that nurses are trained at the utmost level will ensure positive outcomes for patients and the communities in which they exist. The results of this project have the potential to influence change in nursing bedside practice and may improve the gap in knowledge among perinatal nursing staff about the importance of educating parents of infants in the NICU about bonding techniques prior to and following an infant's NICU admission.

The author will share project findings with the stakeholders through a presentation at the hospital in which implementation occurred. The audience will include project participants, perinatal nurse management staff, and other institutional leaders. The presentation will include a summary of the project, and its results with recommendations on sustainability in the future. For

this project, due to IRB standards, the in-services were unable to be mandatory for all perinatal nursing staff to attend. Therefore, recommendations to the management team would be to present the content again in a mandatory setting via in-person in-services, videos, or computer-based modules. Furthermore, it will be suggested to the management team to assess NICU parent satisfaction surveys one year after all nurses receive the education content to assess if the content is reaching and positively impacting the desired population (parents of infants in the NICU).

Finally, to disseminate project results on a greater scale, the project will be presented as a poster presentation at a National nursing conference. Additionally, the author is planning to present the education content at another hospital entity which has expressed interest in educating their perinatal nurses as a quality improvement project in hopes of obtaining increased participation. Following implementation of this project at one other institution this paper will be adjusted to the format of a manuscript and will be submitted to applicable peer-reviewed journals for potential publication.

Conclusion

This pilot project demonstrated proof of concept about the need to improve perinatal nurses' knowledge about evidence-based bonding techniques, and parental support and empowerment skills. Further investigation is needed to support the evidence-based practice findings found throughout the literature review. Implications for nursing are impacted by educating likely parents of infants in the NICU, which has the potential to impact the current morbidity and mortality rate of NICU infants, as well as potentially decrease NICU infants' length of stay. Several barriers were encountered throughout this pilot project and can be adjusted for future implementation of the education content. For example, barriers could be

reduced by offering free continuing education units (CEUs) to participants which are needed for registered nurses to maintain licensure, having interactive training sessions which are mandatory for nursing staff, and utilizing interactive training modalities. Future follow-up studies are needed to ensure that the perinatal nursing staff is utilizing the EBP content at the bedside, and that the content is reaching the intended patient population.

Appendix A

Timeline

January 2017	Establishment of DNP Chair and Committee
February 2017	Proposal to sponsoring facility, Needs Assessment
March 2017	Ongoing Project Development
April 2017	Ongoing Project Development
May 2017	DNP Project Proposal Defense to University of Nevada Las Vegas
June 2017	Ongoing Project Development
July 2017	Ongoing Project Development
August 2017	Ongoing Project Development
September 2017	Submit project to the Office of Research Integrity for Institutional Review Board Consideration at The University of Nevada Las Vegas and to the Institutional Review Board at Texas Health Resources for project approval
October 2017	IRB approval received from The University of Nevada Las Vegas; Submit for Determination to the IRB committee at Texas Health Resources
November 2017	Await IRB Determination from Texas Health Resources
December 2017	Educational Intervention
January 2018	Educational Intervention, Data Analysis, Evaluation of the Project
February 2018 – April 2018	Defense

Appendix B

Tools and Measurements

Post Intervention Survey

Please provide answers to the following statements. Put a circle around the response that you feel **best** reflects your experience.

1. The education material was presented in a way that was complimentary to my learning style.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

2. The education material will help me to improve parent and infant bonding techniques for NICU parents and infants.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

3. Prior to the in-service, I felt as though I could educate parents of infants in the NICU about expectations and parenting roles.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

4. I gained valuable knowledge about how to promote bonding, supportive nursing behaviors, and family centered care to parents of infants in the NICU.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

5. I learned at least one new way to promote bonding and family centered care to patients with infant's in the NICU that I was unaware of prior to this in-service.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

6. I feel as though I will implement the education material that I learned today into my clinical setting to improve supportive care to parents of infants in the NICU.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

7. I feel as though my nursing practice and my patients will benefit from my new knowledge gained from the in-service training.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

8. Following this in-service, I am more confident in my skills of promoting parent and infant bonding techniques outside of the NICU.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

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Curriculum Vitae

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Education

Doctor of Nursing Practice in Executive Nurse Leadership
University of Nevada Las Vegas (enrolled and due to complete in Spring, 2018)

Masters of Science in Nursing Education
University of Oklahoma Health Sciences Center August, 2012 – July, 2013

Bachelors of Science in Nursing
Texas Christian University August, 2005 – May, 2009

Nurse Educator Education

Capstone Project for Masters: Development of a Graduate Nurse Clinical Residency
which was Implemented at Baylor Medical Center at Uptown in Dallas, Texas

Scholarly Project for DNP: Educating Perinatal Nurses to Increase Support of Neonatal
Intensive Care Unit Patients which will be implemented at Texas Health Presbyterian Dallas in
Dallas, Texas

DNP Nursing Residency: Participate on a collaborative quality improvement team to reduce the
nulliparous term singleton vertex (NTSV) cesarean section delivery rate at Texas Health
Presbyterian Allen in Allen, Texas

Education Practicum:

Spring 2013

University of Oklahoma Health Sciences Center – Assistant to Clinical Instructor for Women's
Health at Mercy Hospital in Oklahoma City, Oklahoma

Summer 2013

University of Oklahoma Health Sciences Center – Lab Assistant during Introduction to Nursing
Assessment, Oklahoma City, Oklahoma

University of Oklahoma Health Sciences Center – Act as Adjunct Faculty for Introduction to
Professional Nursing online course, Oklahoma City, Oklahoma

Relevant Employment Experience

Clinical Faculty (MS, RN)

Summer, 2013

University of Oklahoma Health Sciences Center – Act as Adjunct Faculty for Introduction to
Professional Nursing online course, Oklahoma City, Oklahoma

August, 2013 – May, 2016 (Part time Clinical Faculty)
August, 2016 – Present (Full Time Clinical Faculty)
Baylor University Louise Herrington School of Nursing, Dallas, Texas
Instructor for Junior 1 Clinical for Traditional Track and Fastbacc Track students at Baylor Heart and Vascular Hospital (Introduction to Professional Nursing Practice)
Instructor for Physical Health Assessment lab for Junior 1 students
Instructor for Junior 2 Clinical for Fastbacc Track students at Baylor Waxahachie and Baylor Heart and Vascular Hospital
Instructor for Senior 1 (traditional and Fastbacc students) clinical at Parkland Health and Hospital & Baylor Scott and White McKinney (Caring for the Childbearing Family) in OB, Newborn, and Women's Health

Staff Nurse (RN)
June, 2009 – May, 2012
Parkland Health and Hospital System, Dallas, Texas, Labor and Delivery
May, 2012 – May, 2014
Baylor Medical Center at Uptown, Dallas, Texas, Preoperative nursing and Post Anesthesia Care Unit (PACU)
May, 2014 – Present
Texas Health Presbyterian Allen, Allen, Texas, Labor and Delivery & Maternal/Newborn

Charge Nurse (RN)
January, 2012 – May, 2012
Parkland Health and Hospital System, Dallas, Texas, Labor and Delivery

January, 2013 – May, 2014
Baylor Medical Center at Uptown, Dallas, Texas, Preoperative nursing and Post Anesthesia Care Unit (PACU)

July, 2014 – Present
Texas Health Presbyterian Allen, Allen, Texas, Labor and Delivery & Maternal/Newborn

Clinical Preceptor
March, 2011 – May, 2012
Parkland Health and Hospital System, Dallas, Texas, Labor and Delivery

September, 2012 – May, 2014
Baylor Medical Center at Uptown, Dallas, Texas, Preoperative nursing and Post Anesthesia Care Unit (PACU)

July, 2015 – Present
Texas Health Presbyterian Allen, Allen, Texas, Labor and Delivery

Professional Service

Nursing Advisory Council, January, 2013 – May, 2014
Baylor Medical Center at Uptown, Dallas, Texas

Infection Control and Prevention Committee, June, 2014 – August, 2017
Texas Health Presbyterian Allen, Allen, Texas, Labor and Delivery

Bereavement Committee, 2015 – Present
Texas Health Presbyterian Allen, Allen, Texas, Labor and Delivery

Faculty Affairs Committee, August, 2016 – Present
Baylor University Louise Herrington School of Nursing

Undergraduate Academic Policies Committee, August, 2017 – Present
Baylor University Louise Herrington School of Nursing

Community Service Activities

Allen Community Outreach Volunteer during the 2017 holiday season helping with assembling Thanksgiving and Christmas meals in a bag.

North Texas Giving Day Volunteer at Baylor University Louise Herrington School of Nursing (2016 and 2017)

Volunteer for Know Where You Are Going Day at Baylor University in Waco, Texas for incoming freshman in the fall; December, 2017

Allen High School Career Night volunteer – March, 2018

Volunteer for Baylor University Louise Herrington School of Nursing Preview Day for the incoming nursing cohort for the fall – March, 2018

Volunteer for Allen ISD annual health and wellness fair drawing blood – March, 2018

Affiliations/Memberships

American Nurses Association (ANA) 2013 – Current

Texas Nurses Association (TNA) 2013 – Current

National League for Nursing (NLN) 2013 – Current

Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) 2016 – Current

Sigma Theta Tau International (STTI) 2018 – Current

Western Institute of Nursing (WIN) 2018 – Current

Licensure/Certifications

Registered Nurse:

Texas Nursing License # 768775 Expires 3/31/2019

Advanced Cardiac Life Support (ACLS) Provider, Expires March, 2019

Basic Life Support (BLS) Provider, Expires January, 2019
Neonatal Resuscitation Provider (NRP), Expires May, 2020
STABLE certified
Intermediate fetal monitoring certification
Advanced fetal monitoring certification